Pediatric Practice & Research

Journal

Editor in Chief
Resul YILMAZ, Prof. Dr.

ISSN: 2147-6470
volume:7 issue:supp year:2019

IRUPEC 2019 TAM METİN BİLDİRİ EK SAYISI

OPEN ACCESS

RÛMÎ PEDİATRİ DERNEĞİ

MHA MEDIHEALTH ACADEMY

Pediatric Practice & Research
Journal

ISSN: 2147-6470

VOLUME 7 ISSUE Supp YEAR 2019

Pediatric Practice and Research Journal is the official journal of the Rumi Pediatric Society. A three annually publication, it has been published continuously since 2013.

Prof. Dr. Resul YILMAZ
Address: Selçuk Üniversitesi, Tıp Fakültesi Çocuk Yoğun Bakım Bilim Dalı Alaeddin Keykubat Yerleşkesi Selçuklu/Konya 42075 Türkiye
Phone: +90 (332) 241 50 00-44513
Fax: +90 (332) 241 21 84
e-mail: pedpracres@yandex.com
web: http://www.pprjournal.com

Pediatric Practice & Research

Journal

ISSN: 2147-6470

Pediatric Practice & Research
Journal

ISSN: 2147-6470

SELÇUK ÜNİVERSİTESİ

RÛMÎ PEDİATRİ DERNEĞİ

PROJECT

WPS

USERN™ [Universal Scientific Education & Research Network | usern.org]

IRUPEC 2019

Uluslararası

Rümi Pediatri Kongresi

IRUPEC ve 3. J PROJECT Kongresi
Ortak Bilimsel Eğitim Etkinliği

TAM METİN BİLDİRİ KİTAPÇIĞI

www.irupec.com

4-7 Aralık 2019
KONYA / TÜRKİYE
DEDEMAN OTEL & CONVENTION CENTER

DAVET

Değerli Meslektaşlarım,

4-7 Aralık 2019 tarihleri arasında adı Mevlana Celaleddin Rûmi ile özdeşleşmiş, uzun yıllar Selçuklu Devleti'ne başkentlik yapmış güzel Konya'mızda ilk kez düzenleyeceğimiz 1. Uluslararası Rûmi Pediatri Kongresi'nde (IRUPEC 2019) sizleri aramızda görmekten çok büyük bir mutluluk ve onur duyacağız. Kongre tarihi belirlenirken Şeb-i Arus Haftası'ndaki zengin sosyal ve kültürel etkinliklerin hemen öncesi özellikle tercih edilmiştir. Böylece katılımcılarımızın hem bilimsel anlamda pediatrinin en güncel konularını kurslar ve bilimsel toplantılarda uzmanlarından dinlemeleri, hem de sosyal ve kültürel anlamda zamanlarını en iyi biçimde geçirmeleri hedeflenmiştir.

Rûmi Pediatri Kongresi ülkemizdeki birçok güzide kongreye alternatif olmayı değil, Avrupa'dan Asya'ya ve Ortadoğu'ya uzanan geniş bir coğrafyada bilimsel işbirliğini, uluslararası ölçekte gerçekleştirmeyi hedeflemektedir. Şeb-i Arus haftasının bu işbirliği için iyi bir vesile olduğunu düşünmekteyiz. IRUPEC 2019 bilimsel programı üç ana salonda gerçekleştirilecektir. Salonlardan birinde tüm kongre boyunca İngilizce oturumlarda konularında yetkin yerli ve yabancı hocalarımızın engin bilgi ve deneyimlerinden faydalanırken, diğer salonumuzdaki Türkçe oturumlarda güncel konular ve pratik bilgiler ile meslekdaşlarımızın bilgilerini tazelemeyi ve başka bir salonumuzda da pediatri hemşireliği ve bakımı konusundaki en güncel kanıtları dinleyicileriyle buluşturmayı hedeflemekteyiz. İngilizce oturumlarda eşzamanlı olarak Türkçe tercüme de yapılacaktır. Amacımız meslektaşlarımızın bilgilerini, deneyimlerini ve görgülerini paylaştığı; sosyal ve kültürel programlarla yerli ve yabancı meslekdaşlarıyla tanışıp kaynaştığı bir bilimsel şöleni sizlere sunmaktır.

Kongremizin sizlerin kıymetli katılımlarıyla anlam kazanıp amacına ulaşacağını belirtiyor, düzenleme komitesi ve Rûmi Pediatri Derneği adına kongremizin hepimiz için çok yararlı olmasını diliyor, saygılar sunuyorum.

Prof. Dr. Hanifi Soylu
Rûmi Pediatri Derneği Başkanı
Kongre Başkanı

İNDEX

Kongre Düzenleme Kurulu

KONGRE ONURSAL BAŞKANLARI
Dr. MUSTAFA ŞAHİN Selçuk Üniversitesi Rektörü
Dr. CEM ZORLU Necmettin Erbakan Üniversitesi Rektörü

KONGRE BAŞKANI
Dr. HANİFİ SOYLU Selçuk Üniversitesi Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları ABD, Rumi Pediatri Derneği Başkanı

KONGRE 2. BAŞKANLARI
Dr. İSMAİL REİSLİ Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları ABD Başkanı
Dr. RESUL YILMAZ Selçuk Üniversitesi Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları ABD

KONGRE SEKRETERYA
Dr. ALAADDİN YORULMAZ Selçuk Üniversitesi Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları ABD
Dr. MURAT KONAK Selçuk Üniversitesi Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları ABD
Dr. FATİH AKIN Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları ABD

DÜZENLEME KURULU
Dr. Hayrullah ALP Dr. Ali Kemal Belviranlı Kadın Doğum Ve Çocuk Hastalıkları Hastanesi
Dr. Fatma TAŞ ARSLAN Selçuk Üniversitesi Hemşirelik Fakültesi
Dr. Hasibe ARTAÇ Selçuk Üniversitesi Tıp Fakültesi
Dr. Hüseyin ALTUNHAN Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Fuat BUĞRUL Selçuk Üniversitesi Tıp Fakültesi
Dr. Hüseyin ÇAKSEN Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Fatma DUKSAL, T.C.S.B.Ü. Konya Eğitim Ve Araştırma Hastanesi
Dr. Ahmet Midhat ELMACI Dr. Ali Kemal Belviranlı Kadın Doğum Ve Çocuk Hastalıkları Hastanesi
Dr. Halil Haldun EMİROĞLU Selçuk Üniversitesi Tıp Fakültesi
Dr. Melike EMİROĞLU Selçuk Üniversitesi Tıp Fakültesi
Dr. Meltem DORUM GÜMÜŞ Selçuk Üniversitesi Tıp Fakültesi
Dr. Şükrü Nail GÜNER Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Ahmet Sami GÜVEN Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Ayşe KARTAL Selçuk Üniversitesi Tıp Fakültesi
Dr. Sevgi KELEŞ Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Sibel KÜÇÜKOĞLU Selçuk Üniversitesi Hemşirelik Fakültesi
Dr. Ahmet SERT Selçuk Üniversitesi Tıp Fakültesi
Dr. Özlem TEMEL KÖKSOY, T.C.S.B.Ü. Konya Eğitim Ve Araştırma Hastanesi
Dr. Abdullah YAZAR Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Aylin YÜCEL Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi

** Düzenleme Kurulu listesi soyisme göre alfabetik olarak sıralanmıştır.*

BİLİMSEL KURUL

Dr. Hassan Abolhassani, Karolinska Institutet, Sweden
Dr. Ayfer ACIKGOZ, Osmangazi Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Bölümü
Dr. Asghar AGHAMOHAMMADI, Tehran University of Medical Science, Iran
Dr. Alessandro AİUTİ, San Raffaele Telethon Institute for Gene Therapy, İtalya
Dr. Bedriye AK, Abant İzzet Baysal Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Bölümü
Dr. Ömer Faruk AKCA, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Özge METİN AKCAN, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Jalil Ibrahim AL-EZZİ, University of Diyala, College of Medicine, Irak
Dr. Halima AL RUBAİ, Leader of Neurocritical Program, Royal Hospital, Muscat, Umman
Dr. Ömür ARDENIZ, Faculty of Medicine, Ege University, TURKEY
Dr. Derya ARSLAN, T.C.S.B.Ü. Konya Eğitim Ve Araştırma Hastanesi
Dr. Şükrü ARSLAN, Selçuk Üniversitesi Tıp Fakültesi
Dr. Sertaç ARSLANOĞLU, İstanbul Medeniyet Üniversitesi Tıp Fakültesi
Dr. Mehmet Emre ATABEK, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Bülent ATAŞ, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Yusuf AYDEMİR, Eskişehir Osmangazi Üniversitesi Tıp Fakültesi
Dr. Kürşad AYDIN, Medipol Üniversitesi Tıp Fakültesi
Dr. Metin AYDOĞAN, Kocaeli Üniversitesi Tıp Fakültesi
Dr. Zafer BAĞCI, T.C.S.B.Ü. Konya Eğitim Ve Araştırma Hastanesi
Dr. Nerin BAHCECILER, Faculty of Medicine, Near East University, Cyprus
Dr. Arzu BAKIRTAŞ, Gazi Üniversitesi Tıp Fakültesi
Dr. Mihaela BATANEANT, School of Medicine, V. Babeş University of Medicine, Romania.
Dr. Gülsüm İclal BAYHAN, T.C. S. B. Yıldırım Beyazıt Üniversitesi Yenimahalle Eğitim Ve Araştırma Hastanesi
Dr. Ali BAYKAN, Erciyes Üniversitesi Tıp Fakültesi
Dr. Tamer BAYSAL, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Murat BEKTAŞ, Dokuz Eylül Üniversitesi Hemşirelik Fakültesi
Dr. Mikhail BELEVTSEV, Belarusian Research Center for Pediatric Oncology and Hematology, Belarus
Dr. Merih BERBEROĞLU, Ankara Üniversitesi Tıp Fakültesi
Dr. Abdullah BEREKET, Marmara Üniversitesi Tıp Fakültesi
Dr. Anastasiia BONDARENKO, Shupik National Medical Academy of Post-Graduate Education, Ukraine
Dr. Oksana BOYARCHUK, I. Horbachevsky Ternopil National Medical University, Ukraine
Dr. Şefika Elmas BOZDEMİR, Bursa Dörtçelik Çocuk Hastalıkları Hastanesi
Dr. Günseli BOZDOGAN, Faculty of Medicine, Acibadem Hospital, TURKEY
Dr. Ayşegül BÜKÜLMEZ, Afyon Kocatepe Üniversitesi Tıp Fakültesi
Dr. Deniz CAGDAS AYVAZ, Faculty of Medicine, Hacettepe University, TURKEY
Dr. Zafer CALISKANER, Meram Faculty of Medicine, Necmettin Erbakan University, TURKEY
Dr. Yıldız CAMCIOĞLU, İstanbul Üniversitesi Cerrahpaşa Tıp Fakültesi
Dr. Mehmet CEYHAN, Hacettepe Üniversitesi Tıp Fakültesi
Dr. Talal CHATİLA, Harvard Medical School, Amerika Birleşik Devletleri
Dr. Rafael GONZÁLEZ CORTÉS, Gregorio Marañón General University Hospital, İspanya
Dr. Aykut ÇAĞLAR, T.C.S.B.Ü. Dr. Behçet Uz Çocuk Hastalıkları Ve Cerrahisi Eğitim Ve Araştırma Hastanesi
Dr. Ümran ÇALIŞKAN, KTO Karatay Üniversitesi Tıp Fakültesi

Dr. Coşkun ÇELTİK, T.C.S.B.Ü. İstanbul Ümraniye Eğitim ve Araştırma Hastanesi
Dr. Fatih Hilmi ÇETİN, Selçuk Üniversitesi Tıp Fakültesi
Dr. Merih ÇETİNKAYA, T.C.S.B.Ü. İstanbul Kanuni Sultan Süleyman Eğitim ve Araştırma Hastanesi
Dr. İlhan ÇİFTÇİ, Selçuk Üniversitesi Tıp Fakültesi
Dr. Peter CIZNAR, Bratislava National Institute for Children's Diseases, Slovakia
Dr. Serap DEMİRCİOĞLU, Marmara Üniversitesi Tıp Fakültesi
Dr. Selim DERECİ, T.C.S.B.Ü. Adıyaman Eğitim Ve Araştırma Hastanesi
Dr. Dilek DİLLİ, Ankara Dr. Sami Ulus Kadın Doğum, Çocuk Sağlığı Ve Hastalıkları Eğitim Ve Araştırma Hastanesi
Dr. Figen DOGU, Faculty of Medicine, Ankara University, TURKEY
Dr. Hatice DONMEZ, Necmettin Erbakan Üniversitesi, Seydişehir Sağlık Bilimleri Fakültesi Hemşirelik ABD
Dr. Muhammed İrfan DÖNMEZ, T.C.S.B.Ü. Konya Eğitim Ve Araştırma Hastanesi
Dr. İsmail DURSUN, Erciyes Üniversitesi Tıp Fakültesi
Dr. Beray Selver EKLİOĞLU, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Yasser Nabawy ELSAYED, University of Manitoba, Winnipeg, Kanada
Dr. Abdalla H. ELTAYEB, Prince Sultan Military Medical City, Riyadh, Suudi Arabistan
Dr. V. Meltem ENERGİN, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Ömer ERDEVE, Ankara Üniversitesi Tıp Fakültesi
Dr. Melinda ERDŐS, University of Debrecen, Hungary
Dr. Erol ERDURAN, Karadeniz Teknik Üniversitesi Tıp Fakültesi
Dr. Emine GECKIL, Necmettin Erbakan Üniversitesi Hemşirelik Fakültesi
Dr. Gülbin GÖKÇAY, İstanbul Üniversitesi İstanbul Tıp Fakültesi
Dr. Zeynel GÖKMEN, Başkent Üniversitesi Konya Uygulama ve Araştırma Merkezi
Dr. Bahar GÖKTÜRK, Başkent Üniversitesi Konya Uygulama ve Araştırma Merkezi
Dr. Metin GÜNDÜZ, Selçuk Üniversitesi Tıp Fakültesi
Dr. Tülay GÜRAN, Marmara Üniversitesi Tıp Fakültesi
Dr. Şükrü HATUN, Koç Üniversitesi Tıp Fakültesi
Dr. Şamil HIZLI, Yıldırım Beyazıt Üniversitesi, Tıp Fakültesi
Dr. Aydan IKINCIOGULLARI, Faculty of Medicine, Ankara University, TURKEY
Dr. Figen Işik ESENAY, Ankara Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Anabilim Dalı
Dr. Vlora ISMAILI-YAHA, University Clinical Center of Kosovo, Kosovo.
Dr. Emmanuelle JOUANGUY, Paris Descartes University, Imagine Institute, France.
Dr. Erhan KABASAKAL, T.C. Sağlık Bakanlığı Halk Sağlığı Genel Müdürlüğü Aşı Daire Başkanı
Dr. Nuray KANBUR, Hacettepe Üniversitesi Tıp Fakültesi
Dr. Mehmet Kenan KANBUROĞLU, Recep Tayyip Erdoğan Üniversitesi Tıp Fakültesi
Dr. Ateş KARA, Hacettepe Üniversitesi Tıp Fakültesi
Dr. Fatih KARA, T.C: Sağlık Bakanlığı Halk Sağlığı Genel Müdürü
Dr. İnci KARA, Selçuk Üniversitesi Tıp Fakültesi
Dr. Neslihan KARACA EDEER, Faculty of Medicine, Ege University, TURKEY
Dr. Tevfik KARAGÖZ, Hacettepe Üniversitesi Tıp Fakültesi
Dr. Elif KARAKOC AYDINER, Faculty of Medicine, Marmara University, TURKEY
Dr. Özgür KASAPÇOPUR, İstanbul Üniversitesi Cerrahpaşa Tıp Fakültesi
Dr. Salih KAVUKÇU, Dokuz Eylül Üniversitesi Tıp Fakültesi
Dr. Tanıl KENDİRLİ, Ankara Üniversitesi Tıp Fakültesi
Dr. Emine Nural KİPER, Hacettepe Üniversitesi Tıp Fakültesi

Dr. Can KOCABAŞ, Muğla Sıtkı Koçman Üniversitesi Tıp Fakültesi
Dr. İ. Çelebi KOCAOĞLU, T.C.S.B.Ü. Konya Eğitim Ve Araştırma Hastanesi
Dr. Esin KOÇ, Gazi Üniversitesi Tıp Fakültesi
Dr. Hasan KOÇ (E), Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Mehmet KOÇ, Konya İl Sağlık Müdürü
Dr. Yavuz KÖKSAL, Selçuk Üniversitesi Tıp fakültesi
Dr. Özlem TEMEL KÖKSOY, T.C.S.B.Ü. Konya Eğitim Ve Araştırma Hastanesi
Dr. Larysa KOSTYUCHENKO, West Ukrainian Specialized Children's Medical Centre, Ukraine.
Dr. Georgina KULI-LITO, University Hospital Centre Mother Theresa University Hospital, Albania
Dr. Selim KURTOGLU, Memorial Hospital, Kayseri, TURKEY
Dr. Zafer KURUGOL, Faculty of Medicine, Ege University, TURKEY
Dr. Onur KUTLU, Bezmialem Vakıf Üniversitesi Tıp Fakültesi
Dr. Ahmet Emin Kürekçi, Lösante Çocuk ve Yetişkin Hastanesi
Dr. Aletta D. KRANEVELD, Faculty Of Veterinary Medicine, Utrecht University, NETHERLANDS
Dr. Kamile MARAKOĞLU, Selçuk Üniversitesi Tıp Fakültesi
Dr. Gasper MARKELJ, Ljubljana University Medical Centre, Slovenia
Dr. László MARÓDI, University of Debrecen, Hungary
Dr. Marianna MURDJEVA, Medical University of Plovdiv, Bulgaria
Dr. Gulnara NASRULLAYEVA, Azerbaijan Medical University,Azerbaijan
Dr. Elissaveta NAUMOVA, University Hospital Alexandrovska, Bulgaria.
Dr. Nadhim Ghazal NOAMAN, University of Dyala, College of Medicine, Irak
Dr. Asiye NUHOĞLU (E), SBÜ, Istanbul Sisli Hamidiye Etfal Çocuk Hastanesi, Yenidoğan Kliniği
Dr. Dursun ODABAŞ (E), Necmettin Erbakan Üniversitesi
Dr. Mehmet Burhan OFLAZ, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Nurullah OKUMUŞ, Afyonkarahisar Sağlık Bilimleri Üniversitesi
Dr. Fahri OVALI, İstanbul Medeniyet Üniversitesi Tıp Fakültesi
Dr. Ender ÖDEMİŞ, Acıbadem Mehmet Ali Aydınlar Üniversitesi Tıp Fakültesi
Dr. Abdurrahman ÖNEN, Memorial Şişli Hastanesi
Dr. Fazil ORHAN, Faculty of Medicine, Karadeniz Technical University, TURKEY
Dr. Emel ÖRÜN, Özel Koru Ankara Hastanesi
Dr. Rahmi ÖRS, Özel Medova Hastanesi
Dr. Aynur AYTEKİN ÖZDEMİR, Medeniyet Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik ABD
Dr. Ahmet ÖZEN, Faculty of Medicine, Marmara University, TURKEY
Dr. Hasan ÖZEN, Hacettepe Üniversitesi Tıp Fakültesi
Dr. Seza ÖZEN, Hacettepe Üniversitesi Tıp Fakültesi
Dr. Ülkühan ÖZTOPRAK, Ankara Dr. Sami Ulus Kadın Doğum Çocuk Sağlığı Ve Hastalıkları Eğitim Ve Araştırma Hastanesi
Dr. Karaman PAGAVA, Tbilisi State Medical University, Georgia
Dr. Sevgi PEKCAN, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Nima REZAEİ, Tehran University of Medical Sciences, İran
Dr. Sergio ROSENZWEIG, Bethesda National Institutes of Health, USA.
Dr. Cansın SAÇKESEN, Koç Üniversitesi Tıp Fakültesi
Dr. Tamer SEKMENLİ, Selçuk Üniversitesi Tıp Fakültesi
Dr. Ayşe SERDAROĞLU, Gazi Üniversitesi Tıp Fakültesi

Dr. Merike SISASK, Estonian-Swedish Mental Health and Suicidology Institute, Estonya
Dr. Ayper SOMER, İstanbul Üniversitesi İstanbul Tıp Fakültesi
Dr. Lale SATIROGLU TUFAN, Faculty of Medicine, Ankara University, TURKEY
Dr. Pasquale STRİANO, University of Genoa, Italy
Dr. Tuba Esra ŞAHLAR, T.C. Sağlık Bakanlığı Halk Sağlığı Genel Müdürlüğü Kadın ve Üreme Sağlığı Daire Başkanı
Dr. Fatih ŞAP, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Hulusi Burak TANIR, Adana Şehir Eğitim ve Araştırma Hastanesi
Dr. Nuriye TARAKÇI, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. İlhan TEZCAN, Faculty of Medicine, Hacettepe University, TURKEY
Dr. Başak TEZEL, T.C. Sağlık Bakanlığı Halk Sağlığı Genel Müdürlüğü Çocuk ve Ergen Sağlığı Daire Başkanı
Dr. Tuğrul TİRYAKİ, T.C.S.B.Ü. Ankara Çocuk Sağlığı Ve Hastalıkları Hematoloji Onkoloji Eğitim Ve Araştırma Hastanesi
Dr. Hüseyin TOKGÖZ, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Serhat TÜRKOĞLU, Selçuk Üniversitesi Tıp fakültesi
Dr. Canan TÜRKYILMAZ, Gazi Üniversitesi Tıp Fakültesi
Dr. Irina TUZANKINA, The Medical Institute of Orel State University, Russia
Dr. Ekrem ÜNAL, Erciyes Üniversitesi Tıp Fakültesi
Dr. Alla VOLOKHA, Shupyk National Medical Academy of Postgraduate Education, Ukraine
Dr. Özhan YALÇIN, Ankara Üniversitesi Tıp Fakültesi
Dr. Haluk YAVUZ, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Mustafa YAVUZ KOKER, Faculty of Medicine, Erciyes University, TURKEY
Dr. Talat Mesud YELBUZ, King Abdulaziz Cardiac Center, Suudi Arabistan
Dr. Akif YEŞİLİPEK, Bahçeşehir Üniversitesi Tıp Fakültesi
Dr. Dinçer YILDIZDAŞ, Çukurova Üniversitesi Tıp Fakültesi
Dr. Hayri Levent YILMAZ, Çukurova Üniversitesi Tıp Fakültesi
Dr. Man Yİ, University of Manitoba, Winnipeg, Kanada
Dr. Kadriye YURDAKÖK, Hacettepe Üniversitesi Tıp Fakültesi
Dr. Murat YURDAKÖK, Hacettepe Üniversitesi Tıp Fakültesi
Dr. Selçuk YÜCESAN, Başkent Üniversitesi Konya Uygulama ve Araştırma Merkezi
Dr. Adil ZAMANI, Meram Faculty of Medicine, Necmettin Erbakan University, TURKEY
Dr. Ayşegül Zamani, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Shen-Ying ZHANG, The Rockefeller University, USA
Dr. Bülent ZÜLFİKAR, İstanbul Üniversitesi Cerrahpaşa Tıp Fakültesi

** Bilim Kurulu listesi soyisme göre alfabetik olarak sıralanmıştır.*

SELÇUK ÜNİVERSİTESİ

RÛMÎ PEDİATRİ DERNEĞİ

PROJECT

WPS

USERN™ [Universal Scientific Education & Research Network | usern.org]

IRUPEC 2019

Uluslararası

Rümi Pediatri Kongresi

IRUPEC ve 3. J PROJECT Kongresi
Ortak Bilimsel Eğitim Etkinliği

TAM METİN BİLDİRİ KİTAPÇIĞI

www.irupec.com

4-7 Aralık 2019
KONYA / TÜRKİYE
DEDEMAN OTEL & CONVENTION CENTER

DAVET

Değerli Meslektaşlarım,

4-7 Aralık 2019 tarihleri arasında adı Mevlana Celaleddin Rûmi ile özdeşleşmiş, uzun yıllar Selçuklu Devleti'ne başkentlik yapmış güzel Konya'mızda ilk kez düzenleyeceğimiz 1. Uluslararası Rûmi Pediatri Kongresi'nde (IRUPEC 2019) sizleri aramızda görmekten çok büyük bir mutluluk ve onur duyacağız. Kongre tarihi belirlenirken Şeb-i Arus Haftası'ndaki zengin sosyal ve kültürel etkinliklerin hemen öncesi özellikle tercih edilmiştir. Böylece katılımcılarımızın hem bilimsel anlamda pediatrinin en güncel konularını kurslar ve bilimsel toplantılarda uzmanlarından dinlemeleri, hem de sosyal ve kültürel anlamda zamanlarını en iyi biçimde geçirmeleri hedeflenmiştir.

Rûmi Pediatri Kongresi ülkemizdeki birçok güzide kongreye alternatif olmayı değil, Avrupa'dan Asya'ya ve Ortadoğu'ya uzanan geniş bir coğrafyada bilimsel işbirliğini, uluslararası ölçekte gerçekleştirmeyi hedeflemektedir. Şeb-i Arus haftasının bu işbirliği için iyi bir vesile olduğunu düşünmekteyiz. IRUPEC 2019 bilimsel programı üç ana salonda gerçekleştirilecektir. Salonlardan birinde tüm kongre boyunca İngilizce oturumlarda konularında yetkin yerli ve yabancı hocalarımızın engin bilgi ve deneyimlerinden faydalanırken, diğer salonumuzdaki Türkçe oturumlarda güncel konular ve pratik bilgiler ile meslekdaşlarımızın bilgilerini tazelemeyi ve başka bir salonumuzda da pediatri hemşireliği ve bakımı konusundaki en güncel kanıtları dinleyicileriyle buluşturmayı hedeflemekteyiz. İngilizce oturumlarda eşzamanlı olarak Türkçe tercüme de yapılacaktır. Amacımız meslektaşlarımızın bilgilerini, deneyimlerini ve görgülerini paylaştığı; sosyal ve kültürel programlarla yerli ve yabancı meslekdaşlarıyla tanışıp kaynaştığı bir bilimsel şöleni sizlere sunmaktır.

Kongremizin sizlerin kıymetli katılımlarıyla anlam kazanıp amacına ulaşacağını belirtiyor, düzenleme komitesi ve Rûmi Pediatri Derneği adına kongremizin hepimiz için çok yararlı olmasını diliyor, saygılar sunuyorum.

Prof. Dr. Hanifi Soylu
Rûmi Pediatri Derneği Başkanı
Kongre Başkanı

İNDEX

Kongre Düzenleme Kurulu

KONGRE ONURSAL BAŞKANLARI
Dr. MUSTAFA ŞAHİN Selçuk Üniversitesi Rektörü
Dr. CEM ZORLU Necmettin Erbakan Üniversitesi Rektörü

KONGRE BAŞKANI
Dr. HANİFİ SOYLU Selçuk Üniversitesi Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları ABD, Rumi Pediatri Derneği Başkanı

KONGRE 2. BAŞKANLARI
Dr. İSMAİL REİSLİ Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları ABD Başkanı
Dr. RESUL YILMAZ Selçuk Üniversitesi Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları ABD

KONGRE SEKRETERYA
Dr. ALAADDİN YORULMAZ Selçuk Üniversitesi Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları ABD
Dr. MURAT KONAK Selçuk Üniversitesi Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları ABD
Dr. FATİH AKIN Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları ABD

DÜZENLEME KURULU
Dr. Hayrullah ALP Dr. Ali Kemal Belviranlı Kadın Doğum Ve Çocuk Hastalıkları Hastanesi
Dr. Fatma TAŞ ARSLAN Selçuk Üniversitesi Hemşirelik Fakültesi
Dr. Hasibe ARTAÇ Selçuk Üniversitesi Tıp Fakültesi
Dr. Hüseyin ALTUNHAN Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Fuat BUĞRUL Selçuk Üniversitesi Tıp Fakültesi
Dr. Hüseyin ÇAKSEN Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Fatma DUKSAL, T.C.S.B.Ü. Konya Eğitim Ve Araştırma Hastanesi
Dr. Ahmet Midhat ELMACI Dr. Ali Kemal Belviranlı Kadın Doğum Ve Çocuk Hastalıkları Hastanesi
Dr. Halil Haldun EMİROĞLU Selçuk Üniversitesi Tıp Fakültesi
Dr. Melike EMİROĞLU Selçuk Üniversitesi Tıp Fakültesi
Dr. Meltem DORUM GÜMÜŞ Selçuk Üniversitesi Tıp Fakültesi
Dr. Şükrü Nail GÜNER Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Ahmet Sami GÜVEN Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Ayşe KARTAL Selçuk Üniversitesi Tıp Fakültesi
Dr. Sevgi KELEŞ Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Sibel KÜÇÜKOĞLU Selçuk Üniversitesi Hemşirelik Fakültesi
Dr. Ahmet SERT Selçuk Üniversitesi Tıp Fakültesi
Dr. Özlem TEMEL KÖKSOY, T.C.S.B.Ü. Konya Eğitim Ve Araştırma Hastanesi
Dr. Abdullah YAZAR Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Aylin YÜCEL Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi

** Düzenleme Kurulu listesi soyisme göre alfabetik olarak sıralanmıştır.*

BİLİMSEL KURUL

Dr. Hassan Abolhassani, Karolinska Institutet, Sweden
Dr. Ayfer ACIKGOZ, Osmangazi Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Bölümü
Dr. Asghar AGHAMOHAMMADI, Tehran University of Medical Science, Iran
Dr. Alessandro AİUTİ, San Raffaele Telethon Institute for Gene Therapy, İtalya
Dr. Bedriye AK, Abant İzzet Baysal Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Bölümü
Dr. Ömer Faruk AKCA, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Özge METİN AKCAN, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Jalil Ibrahim AL-EZZİ, University of Diyala, College of Medicine, Irak
Dr. Halima AL RUBAİ, Leader of Neurocritical Program, Royal Hospital, Muscat, Umman
Dr. Ömür ARDENIZ, Faculty of Medicine, Ege University, TURKEY
Dr. Derya ARSLAN, T.C.S.B.Ü. Konya Eğitim Ve Araştırma Hastanesi
Dr. Şükrü ARSLAN, Selçuk Üniversitesi Tıp Fakültesi
Dr. Sertaç ARSLANOĞLU, İstanbul Medeniyet Üniversitesi Tıp Fakültesi
Dr. Mehmet Emre ATABEK, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Bülent ATAŞ, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Yusuf AYDEMİR, Eskişehir Osmangazi Üniversitesi Tıp Fakültesi
Dr. Kürşad AYDIN, Medipol Üniversitesi Tıp Fakültesi
Dr. Metin AYDOĞAN, Kocaeli Üniversitesi Tıp Fakültesi
Dr. Zafer BAĞCI, T.C.S.B.Ü. Konya Eğitim Ve Araştırma Hastanesi
Dr. Nerin BAHCECILER, Faculty of Medicine, Near East University, Cyprus
Dr. Arzu BAKIRTAŞ, Gazi Üniversitesi Tıp Fakültesi
Dr. Mihaela BATANEANT, School of Medicine, V. Babeş University of Medicine, Romania.
Dr. Gülsüm İclal BAYHAN, T.C. S. B. Yıldırım Beyazıt Üniversitesi Yenimahalle Eğitim Ve Araştırma Hastanesi
Dr. Ali BAYKAN, Erciyes Üniversitesi Tıp Fakültesi
Dr. Tamer BAYSAL, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Murat BEKTAŞ, Dokuz Eylül Üniversitesi Hemşirelik Fakültesi
Dr. Mikhail BELEVTSEV, Belarusian Research Center for Pediatric Oncology and Hematology, Belarus
Dr. Merih BERBEROĞLU, Ankara Üniversitesi Tıp Fakültesi
Dr. Abdullah BEREKET, Marmara Üniversitesi Tıp Fakültesi
Dr. Anastasiia BONDARENKO, Shupik National Medical Academy of Post-Graduate Education, Ukraine
Dr. Oksana BOYARCHUK, I. Horbachevsky Ternopil National Medical University, Ukraine
Dr. Şefika Elmas BOZDEMİR, Bursa Dörtçelik Çocuk Hastalıkları Hastanesi
Dr. Günseli BOZDOGAN, Faculty of Medicine, Acibadem Hospital, TURKEY
Dr. Ayşegül BÜKÜLMEZ, Afyon Kocatepe Üniversitesi Tıp Fakültesi
Dr. Deniz CAGDAS AYVAZ, Faculty of Medicine, Hacettepe University, TURKEY
Dr. Zafer CALISKANER, Meram Faculty of Medicine, Necmettin Erbakan University, TURKEY
Dr. Yıldız CAMCIOĞLU, İstanbul Üniversitesi Cerrahpaşa Tıp Fakültesi
Dr. Mehmet CEYHAN, Hacettepe Üniversitesi Tıp Fakültesi
Dr. Talal CHATİLA, Harvard Medical School, Amerika Birleşik Devletleri
Dr. Rafael GONZÁLEZ CORTÉS, Gregorio Marañón General University Hospital, İspanya
Dr. Aykut ÇAĞLAR, T.C.S.B.Ü. Dr. Behçet Uz Çocuk Hastalıkları Ve Cerrahisi Eğitim Ve Araştırma Hastanesi
Dr. Ümran ÇALIŞKAN, KTO Karatay Üniversitesi Tıp Fakültesi

Dr. Coşkun ÇELTİK, T.C.S.B.Ü. İstanbul Ümraniye Eğitim ve Araştırma Hastanesi
Dr. Fatih Hilmi ÇETİN, Selçuk Üniversitesi Tıp Fakültesi
Dr. Merih ÇETİNKAYA, T.C.S.B.Ü. İstanbul Kanuni Sultan Süleyman Eğitim ve Araştırma Hastanesi
Dr. İlhan ÇİFTÇİ, Selçuk Üniversitesi Tıp Fakültesi
Dr. Peter CIZNAR, Bratislava National Institute for Children's Diseases, Slovakia
Dr. Serap DEMİRCİOĞLU, Marmara Üniversitesi Tıp Fakültesi
Dr. Selim DERECİ, T.C.S.B.Ü. Adıyaman Eğitim Ve Araştırma Hastanesi
Dr. Dilek DİLLİ, Ankara Dr. Sami Ulus Kadın Doğum, Çocuk Sağlığı Ve Hastalıkları Eğitim Ve Araştırma Hastanesi
Dr. Figen DOGU, Faculty of Medicine, Ankara University, TURKEY
Dr. Hatice DONMEZ, Necmettin Erbakan Üniversitesi, Seydişehir Sağlık Bilimleri Fakültesi Hemşirelik ABD
Dr. Muhammed İrfan DÖNMEZ, T.C.S.B.Ü. Konya Eğitim Ve Araştırma Hastanesi
Dr. İsmail DURSUN, Erciyes Üniversitesi Tıp Fakültesi
Dr. Beray Selver EKLİOĞLU, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Yasser Nabawy ELSAYED, University of Manitoba, Winnipeg, Kanada
Dr. Abdalla H. ELTAYEB, Prince Sultan Military Medical City, Riyadh, Suudi Arabistan
Dr. V. Meltem ENERGİN, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Ömer ERDEVE, Ankara Üniversitesi Tıp Fakültesi
Dr. Melinda ERDŐS, University of Debrecen, Hungary
Dr. Erol ERDURAN, Karadeniz Teknik Üniversitesi Tıp Fakültesi
Dr. Emine GECKIL, Necmettin Erbakan Üniversitesi Hemşirelik Fakültesi
Dr. Gülbin GÖKÇAY, İstanbul Üniversitesi İstanbul Tıp Fakültesi
Dr. Zeynel GÖKMEN, Başkent Üniversitesi Konya Uygulama ve Araştırma Merkezi
Dr. Bahar GÖKTÜRK, Başkent Üniversitesi Konya Uygulama ve Araştırma Merkezi
Dr. Metin GÜNDÜZ, Selçuk Üniversitesi Tıp Fakültesi
Dr. Tülay GÜRAN, Marmara Üniversitesi Tıp Fakültesi
Dr. Şükrü HATUN, Koç Üniversitesi Tıp Fakültesi
Dr. Şamil HIZLI, Yıldırım Beyazıt Üniversitesi, Tıp Fakültesi
Dr. Aydan IKINCIOGULLARI, Faculty of Medicine, Ankara University, TURKEY
Dr. Figen Işik ESENAY, Ankara Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Anabilim Dalı
Dr. Vlora ISMAILI-YAHA, University Clinical Center of Kosovo, Kosovo.
Dr. Emmanuelle JOUANGUY, Paris Descartes University, Imagine Institute, France.
Dr. Erhan KABASAKAL, T.C. Sağlık Bakanlığı Halk Sağlığı Genel Müdürlüğü Aşı Daire Başkanı
Dr. Nuray KANBUR, Hacettepe Üniversitesi Tıp Fakültesi
Dr. Mehmet Kenan KANBUROĞLU, Recep Tayyip Erdoğan Üniversitesi Tıp Fakültesi
Dr. Ateş KARA, Hacettepe Üniversitesi Tıp Fakültesi
Dr. Fatih KARA, T.C: Sağlık Bakanlığı Halk Sağlığı Genel Müdürü
Dr. İnci KARA, Selçuk Üniversitesi Tıp Fakültesi
Dr. Neslihan KARACA EDEER, Faculty of Medicine, Ege University, TURKEY
Dr. Tevfik KARAGÖZ, Hacettepe Üniversitesi Tıp Fakültesi
Dr. Elif KARAKOC AYDINER, Faculty of Medicine, Marmara University, TURKEY
Dr. Özgür KASAPÇOPUR, İstanbul Üniversitesi Cerrahpaşa Tıp Fakültesi
Dr. Salih KAVUKÇU, Dokuz Eylül Üniversitesi Tıp Fakültesi
Dr. Tanıl KENDİRLİ, Ankara Üniversitesi Tıp Fakültesi
Dr. Emine Nural KİPER, Hacettepe Üniversitesi Tıp Fakültesi

Dr. Can KOCABAŞ, Muğla Sıtkı Koçman Üniversitesi Tıp Fakültesi
Dr. İ. Çelebi KOCAOĞLU, T.C.S.B.Ü. Konya Eğitim Ve Araştırma Hastanesi
Dr. Esin KOÇ, Gazi Üniversitesi Tıp Fakültesi
Dr. Hasan KOÇ (E), Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Mehmet KOÇ, Konya İl Sağlık Müdürü
Dr. Yavuz KÖKSAL, Selçuk Üniversitesi Tıp fakültesi
Dr. Özlem TEMEL KÖKSOY, T.C.S.B.Ü. Konya Eğitim Ve Araştırma Hastanesi
Dr. Larysa KOSTYUCHENKO, West Ukrainian Specialized Children's Medical Centre, Ukraine.
Dr. Georgina KULI-LITO, University Hospital Centre Mother Theresa University Hospital, Albania
Dr. Selim KURTOGLU, Memorial Hospital, Kayseri, TURKEY
Dr. Zafer KURUGOL, Faculty of Medicine, Ege University, TURKEY
Dr. Onur KUTLU, Bezmialem Vakıf Üniversitesi Tıp Fakültesi
Dr. Ahmet Emin Kürekçi, Lösante Çocuk ve Yetişkin Hastanesi
Dr. Aletta D. KRANEVELD, Faculty Of Veterinary Medicine, Utrecht University, NETHERLANDS
Dr. Kamile MARAKOĞLU, Selçuk Üniversitesi Tıp Fakültesi
Dr. Gasper MARKELJ, Ljubljana University Medical Centre, Slovenia
Dr. László MARÓDI, University of Debrecen, Hungary
Dr. Marianna MURDJEVA, Medical University of Plovdiv, Bulgaria
Dr. Gulnara NASRULLAYEVA, Azerbaijan Medical University,Azerbaijan
Dr. Elissaveta NAUMOVA, University Hospital Alexandrovska, Bulgaria.
Dr. Nadhim Ghazal NOAMAN, University of Dyala, College of Medicine, Irak
Dr. Asiye NUHOĞLU (E), SBÜ, Istanbul Sisli Hamidiye Etfal Çocuk Hastanesi, Yenidoğan Kliniği
Dr. Dursun ODABAŞ (E), Necmettin Erbakan Üniversitesi
Dr. Mehmet Burhan OFLAZ, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Nurullah OKUMUŞ, Afyonkarahisar Sağlık Bilimleri Üniversitesi
Dr. Fahri OVALI, İstanbul Medeniyet Üniversitesi Tıp Fakültesi
Dr. Ender ÖDEMİŞ, Acıbadem Mehmet Ali Aydınlar Üniversitesi Tıp Fakültesi
Dr. Abdurrahman ÖNEN, Memorial Şişli Hastanesi
Dr. Fazil ORHAN, Faculty of Medicine, Karadeniz Technical University, TURKEY
Dr. Emel ÖRÜN, Özel Koru Ankara Hastanesi
Dr. Rahmi ÖRS, Özel Medova Hastanesi
Dr. Aynur AYTEKİN ÖZDEMİR, Medeniyet Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik ABD
Dr. Ahmet ÖZEN, Faculty of Medicine, Marmara University, TURKEY
Dr. Hasan ÖZEN, Hacettepe Üniversitesi Tıp Fakültesi
Dr. Seza ÖZEN, Hacettepe Üniversitesi Tıp Fakültesi
Dr. Ülkühan ÖZTOPRAK, Ankara Dr. Sami Ulus Kadın Doğum Çocuk Sağlığı Ve Hastalıkları Eğitim Ve Araştırma Hastanesi
Dr. Karaman PAGAVA, Tbilisi State Medical University, Georgia
Dr. Sevgi PEKCAN, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Nima REZAEİ, Tehran University of Medical Sciences, İran
Dr. Sergio ROSENZWEIG, Bethesda National Institutes of Health, USA.
Dr. Cansın SAÇKESEN, Koç Üniversitesi Tıp Fakültesi
Dr. Tamer SEKMENLİ, Selçuk Üniversitesi Tıp Fakültesi
Dr. Ayşe SERDAROĞLU, Gazi Üniversitesi Tıp Fakültesi

Dr. Merike SISASK, Estonian-Swedish Mental Health and Suicidology Institute, Estonya
Dr. Ayper SOMER, İstanbul Üniversitesi İstanbul Tıp Fakültesi
Dr. Lale SATIROGLU TUFAN, Faculty of Medicine, Ankara University, TURKEY
Dr. Pasquale STRİANO, University of Genoa, Italy
Dr. Tuba Esra ŞAHLAR, T.C. Sağlık Bakanlığı Halk Sağlığı Genel Müdürlüğü Kadın ve Üreme Sağlığı Daire Başkanı
Dr. Fatih ŞAP, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Hulusi Burak TANIR, Adana Şehir Eğitim ve Araştırma Hastanesi
Dr. Nuriye TARAKÇI, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. İlhan TEZCAN, Faculty of Medicine, Hacettepe University, TURKEY
Dr. Başak TEZEL, T.C. Sağlık Bakanlığı Halk Sağlığı Genel Müdürlüğü Çocuk ve Ergen Sağlığı Daire Başkanı
Dr. Tuğrul TİRYAKİ, T.C.S.B.Ü. Ankara Çocuk Sağlığı Ve Hastalıkları Hematoloji Onkoloji Eğitim Ve Araştırma Hastanesi
Dr. Hüseyin TOKGÖZ, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Serhat TÜRKOĞLU, Selçuk Üniversitesi Tıp fakültesi
Dr. Canan TÜRKYILMAZ, Gazi Üniversitesi Tıp Fakültesi
Dr. Irina TUZANKINA, The Medical Institute of Orel State University, Russia
Dr. Ekrem ÜNAL, Erciyes Üniversitesi Tıp Fakültesi
Dr. Alla VOLOKHA, Shupyk National Medical Academy of Postgraduate Education, Ukraine
Dr. Özhan YALÇIN, Ankara Üniversitesi Tıp Fakültesi
Dr. Haluk YAVUZ, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Mustafa YAVUZ KOKER, Faculty of Medicine, Erciyes University, TURKEY
Dr. Talat Mesud YELBUZ, King Abdulaziz Cardiac Center, Suudi Arabistan
Dr. Akif YEŞİLİPEK, Bahçeşehir Üniversitesi Tıp Fakültesi
Dr. Dinçer YILDIZDAŞ, Çukurova Üniversitesi Tıp Fakültesi
Dr. Hayri Levent YILMAZ, Çukurova Üniversitesi Tıp Fakültesi
Dr. Man Yİ, University of Manitoba, Winnipeg, Kanada
Dr. Kadriye YURDAKÖK, Hacettepe Üniversitesi Tıp Fakültesi
Dr. Murat YURDAKÖK, Hacettepe Üniversitesi Tıp Fakültesi
Dr. Selçuk YÜCESAN, Başkent Üniversitesi Konya Uygulama ve Araştırma Merkezi
Dr. Adil ZAMANI, Meram Faculty of Medicine, Necmettin Erbakan University, TURKEY
Dr. Ayşegül Zamani, Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi
Dr. Shen-Ying ZHANG, The Rockefeller University, USA
Dr. Bülent ZÜLFİKAR, İstanbul Üniversitesi Cerrahpaşa Tıp Fakültesi

** Bilim Kurulu listesi soyisme göre alfabetik olarak sıralanmıştır.*

Tam Metin Bildiriler

FT01

Sleep-related bruxism response to melatonin treatment: three school age children

Dr.Öğr.Üyesi Semih Erden

Meram Tıp Fak. Çocuk Psikiyatri AD

Abstract

Bruxism related to sleep involves activation of the chewing muscles and results in tooth clenching, chattering, and grinding. Risk factors related to bruxism in sleep are obstructive sleep apnea, alcohol, caffeine, parasomnias such as sleep-talking and sleepwalking, anxiety, and other psychiatric and neurologic disorders, and some medications. There is still no treatment proven to be effective for the treatment of sleep bruxism. This case presents three school-aged children who presented with bruxism who responded to low-dose melatonin.

Keywords: *sleep; child; bruxism; melatonin*

Melatonin tedavisi ile düzelen uyku ile ilişkili bruksizm: üç okul çağı çocuğu

Özet

Uykuda diş gıcırdatma, çiğneme kaslarının aktivasyonunu içerir, bu da uyku sırasında diş sıkma, dişlerin gıcırdaması ve öğütme ile sonuçlanır. Uykuda diş gıcırdatma risk faktörleri, obstruktif uyku apnesi, alkol, kafein, uykuda konuşma, uyurgezerlik gibi parasomnialar, anksiyete ve diğer psikiyatrik ve nörolojik bozukluklar ve bazı ilaçlardır. Halen, uykuda diş gıcırdatma tedavisinde etkili olduğu kanıtlanmış bir tedavi yoktur. Bu olguda uykuda diş gıcırdatma şikayeti ile başvuran düşük doz melatonine cevap veren üç okul çağı çocuğu sunuldu.

Anahtar Kelimeler: *uyku; çocuk; bruksizm; melatonin*

Giriş

Parasominialar çocukların yarısını etkilemekte olup, uykuda sayıklama ve uyku ile ilişkili bruksizim bunlardan bazılarıdır (1). Uyku ile ilişkili bruksizm, çiğneme kaslarının aktivasyonunu içerir, bu da uyku sırasında diş sıkma, dişlerin gıcırdaması ve öğütme ile sonuçlanır. Non-REM uykusunun üç aşamasından herhangi birinde oluşabilir. Çocukluk döneminde sık görülür ve prevalansı ilerleyen yaşla birlikte giderek azalır. Uyku ile ilgili bruksizm için tedavi seçenekleri arasında davranış modifikasyonları, dişleri korumak için oral cihazlar ve farmakoterapi bulunur. Bu olguda uyku ile ilişkili bruksizm ile başvuran düşük doz melatonine cevap veren üç okul çağı çocuk sunuldu.

Olgu 1

7 yaşında kız çocuk gece uykuda diş gıcırdatma ve sayıklama nedeniyle polikliniğe başvurdu. Gece diş gıcırdatması yaklaşık iki yıldır varmış. Hemen her gece oluyor ve yaklaşık otuz saniye sürüyormuş. Gece sayıklaması iki yaşından beri varmış ve her gece 2-3 defa oluyormuş. Uykuda gündüz yaşadığı olayları anlatıyormuş. Ailesinin uyarılarına cevap vermiyor ve uyanmadan geri uykuya devam ediyormuş. Uykuda motor hareket ya da bağırma olmuyormuş. Sabah kalktığında konuştuğunu hatırlamıyormuş. Gece uykuya dalmakta zorlanırmış. Bebekliğinden beri geç uyur ve sık sık uyanırmış. Gündüzleri dalgınlık ve yorgunluk şikayetleri varmış. Eşlik eden başka bir hastalığı yokmuş. Daha önce uyku hijyeni

ile ilgili düzenlemelerin yapıldığı ve onun fayda görmediği öğrenildi. Ailesi onun diş gıcırdatmaları ile ilgili çok endişeliydi. Uykuda diş gıcırdatma ve uykuda sayıklama Melatonin 1.5mg/gün başlandı. On beş günün sonunda sayıklamaları kayboldu, diş gıcırdatma süresi ve atakları azaldı. Bir ayın sonunda gıcırdatma atakları tamamen ortadan kayboldu. Aile ilaç ile ilgili herhangi bir yan etki bildirmedi.

Olgu 2
9 yaşında erkek çocuk uykuda diş gıcırdatma şikayetiyle polikliniğe getirildi. Diş gıcırdatmasının 4 yıldır olduğu ve son 6 aydır giderek arttığı öğrenildi. Bu şikayetleri gece birçok kez oluyor ve yaklaşık on saniye sürüyormuş. Ailesi uyku ile ilişkili başka bir şikayet tariflemiyordu. İki yıl önce dikkat eksikliği ve hiperaktivite bozukluğu tanısı konduğu ve uzun salınımlı metilfenidat 27 mg/gün kullandığı öğrenildi. İlaç başlandıktan sonra diş gıcırdatmasında herhangi bir değişiklik olmamış. Hastanın özgeçmiş ve soygeçmişinde başka bir özellik yoktu. Ailesi onun diş gıcırdatmaları ile ilgili çok endişeliydi. Diş gıcırdatması için melatonin 1.5 mg/gün başlandı. On günün sonunda diş gıcırdatmasının biraz azaldığı öğrenildi. Bir ayın sonunda diş gıcırdatma süresi ve atakları belirgin bir şekilde azaldı. Tedavinin 3. ayında diş gıcırdatma atakları tamamen ortadan kayboldu. Kendisi ve ailesi ilaç ile ilgili herhangi bir yan etki bildirmedi.

Olgu 3
6 yaşında erkek çocuk uykuda diş gıcırdatma ve uykuda bağırma şikayeti ile polikliniğe getirildi. Diş gıcırdatmasının iki yıl önce başladığı ve son bir aydır giderek arttığı öğrenildi. Diş gıcırdatması, ilk zamanlar haftada yaklaşık 3 kez oluyor ve yaklaşık 3-4 saniye sürüyormuş. Son bir aydır hemen her gün olmaya başlamış. Gece uykuda bağırmasının ise, 2 hafta önce başladığı öğrenildi. Uykuda iken bir anda korkarak uyanıyor ve bir süre oturur pozisyonda konuşuyor ve bağırıyormuş. Ancak bu anda uyanık olmuyormuş. Yaklaşık 2-3 dakika sonra sakinleşip geri uykuya dönüyormuş. Sabah kalktığında gece olanları hatırlamıyormuş. Hastanın özgeçmiş ve soygeçmişinde başka bir özellik yoktu. Yapılan laboratuvar tetkiklerde herhangi bir patoloji saptanmadı. Uykuda diş gıcırdatma ve gece terörü tanısıyla, uyku hijyeni ile ilgili düzenlemeler yapıldı. 1 ay sonunda şikayetlerinde belirgin değişiklik olmayınca melatonin 1.5 mg/gün başlandı. On beş günün sonunda diş gıcırdatmaları biraz azaldı, ancak gece korkuları ve bağırması hala devam ediyordu. Daha sonra melatonin 3 mg/gün olarak düzenlendi. Bir ayın sonunda diş gıcırdatması belirgin bir şekilde azaldı. Gece korkuları da daha azdı. Tedavinin 3. ayında diş gıcırdatma atakları tamamen ortadan kayboldu. Ailesi ilaç ile ilgili herhangi bir yan etki bildirmedi.

Tartışma
Bu okul çağındaki çocuklarda melatonin uygulaması ile uyku ile ilişkili diş gıcırdatmanın kaybolduğu gözlenmiştir. Çocuklarda uyku ile ilişkili diş gıcırdatmanın tedavisinde, melatonin kullanımı bugüne kadar literatürde rapor edilmemiştir.
Uyku ile ilişkili diş gıcırdatmanın ana risk faktörleri, obstruktif uyku apnesi, alkol, kafein, uykuda konuşma, uyurgezerlik gibi parasomnialar, anksiyete ve diğer psikiyatrik ve nörolojik bozukluklar ve bazı ilaçlardır (2). Halen, uyku bruksizminin tedavisinde etkili olduğu kanıtlanmış bir tedavi yoktur. Uyku bruksizmi, risk faktörleri ve tetikleyicilerden kaçınma, uyku hijyeni, gevşeme teknikleri ve bilişsel davranışçı terapi içeren davranışsal stratejilerle yönetilebilir (3-6). Ancak bunlar kontrollü çalışmalardan elde edilen kanıtlarla desteklenmemiştir. Bruksizmde dopaminerjik sistemde sorun olduğu kabul edilir ve amfetamin, antipsikotik gibi ajanlar bruksizmi tetikleyebilir (7-9). Pramipeksol gibi dopamin agonistleri, bruksizm tedavisinde etkisiz olduğu bildirilmiştir. Bununla birlikte, uykuya bağlı

bruksizmin, otonom, kardiyak ve motor modülatör ağlarda aktivitenin artmasına katkıda bulunan beyin sapı retiküler aktivasyon sisteminin kısa ve geçici aktivitesine bağlı olduğu varsayılmaktadır (10). Hem erişkinlerde hem de uykuya bağlı bruksizmi olan çocuklarda idrarda yüksek katekolamin düzeyleri saptanmıştır. Alfa-adrenerjik bir agonist olan klonidin uygulamasının uyku ile ilişkili bruksizm epizotlarını azaltması bu durumu desteklemektedir. Ağız kuruluğu ve baş dönmesi sık görülen yan etkisidir. Klonezepam ile ilgili çalışmalar bruksizmi engelleyebileceğini göstermektedir (11). Ancak yüksek dozlarda sabah uyku hali riski ile ilişkilidir. Hidroksizin ve gapabentin uyku ile ilişkili bruksizmde etkili olabileceği bildirilen diğer ajanlardandır. İlaca bağlı bruksizim durumlarında olgu bildirimi çalışmalar buspirone'un semptomları azaltabileceği veya ortadan kaldırabileceğini göstermektedir (12, 13).
Pineal bir hormon olan melatonin insanlarda uyku başlatılması ve sürdürülmesi ile yakından ilgilidir. Melatonin klinikte insomnia, jet lag, vardiyalı çalışmada sıklıkla kullanılmaktadır. REM uykusu davranış bozukluğunda da faydalı olduğu bildirilmektedir (14). Buna karşın melatoninin etki ve yan etkileri hala tam olarak bilinmemektedir. Şu an için melatonin kullanımı için önerilen herhangi bir dozaj kılavuz bulunmamaktadır.

Bu olgularda tedavi için melatonin kullanmayı planladık ve şikayetlerin gerildiğini gözlemledik. Tam olarak nasıl bir mekanizma ile etki ettiğini bilmiyoruz. Ancak uykuya dalma süresi ve uyku kalitesi üzerine düzenleyici etkisi ile bruksizm şikayetlerinin azalmış olabileceğini düşünüyoruz. Bu olgunun takip süresi kısa olsa da ilaca erken cevap vermesi önemlidir.

Bildiğimiz kadarıyla, bu çocuklarda melatonin uygulamasının, uykuda diş gıcırdatma için tedavi edici olduğunu öne süren ilk rapordur. Bu olgu uyku ile ilişkili bruksizmde diğer ajanlara kıyasla düşük yan etki riski nedeniyle melatoninin tedavide kullanılabileceğini öne sürebilir. Melatoninin, uyku ilişkili diş gıcırdatmada nasıl bir terapötik rol oynadığını açıklığa kavuşturmak için daha fazla araştırma yapılması gerekmektedir.

Referanslar

1. *American Academy of Sleep Medicine (2005). Diagnostic and Coding Manual 51-55.*
2. *Guaita M, Hogl B. Current Treatments of Bruxism. Curr Treat Options Neurol. 2016;18(2):10.*
3. *Lobbezoo F, van der Zaag J, van Selms MK, et al. Principles for the management of bruxism. J Oral Rehabil. 2008;35(7):509-23.*
4. *Shulman J. Teaching patients how to stop bruxing habits. J Am Dent Assoc. 2001;132(9):1275-7.*
5. *Jadidi F, Castrillon E, Svensson P. Effect of conditioning electrical stimuli on temporalis electromyographic activity during sleep. J Oral Rehabil. 2008;35(3):171-83.*
6. *Ommerborn MA, Schneider C, Giraki M, et al. Effects of an occlusal splint compared with cognitive-behavioral treatment on sleep bruxism activity. Eur J Oral Sci. 2007;115(1):7-14.*
7. *Falisi G, Rastelli C, Panti F, et al. Psychotropic drugs and bruxism. Expert Opin Drug Saf. 2014;13(10):1319-26.*
8. *Milosevic A, Agrawal N, Redfearn P, et al. The occurrence of toothwear in users of Ecstasy (3,4-methylenedioxymethamphetamine). Community Dent Oral Epidemiol. 1999;27(4):283-7.*
9. *Uca AU, Uguz F, Kozak HH, et al. Antidepressant-Induced Sleep Bruxism: Prevalence, Incidence, and Related Factors. Clin Neuropharmacol. 2015;38(6):227-30.*
10. *Lavigne GJ, Huynh N, Kato T, et al. Genesis of sleep bruxism: motor and autonomic-cardiac interactions. 2007;52(4):381-4.*

11. *Saletu A, Parapatics S, Anderer P, et al. Controlled clinical, polysomnographic and psychometric studies on differences between sleep bruxers and controls and acute effects of clonazepam as compared with placebo. Eur Arch Psychiatry Clin Neurosci. 2010;260(2):163-74.*
12. *Bostwick JM, Jaffee MS. Buspirone as an antidote to SSRI-induced bruxism in 4 cases. J Clin Psychiatry. 1999;60(12):857-60.*
13. *Albayrak Y, Ekinci O. Duloxetine-induced nocturnal bruxism resolved by buspirone: case report. Clin Neuropharmacol. 2011;34(4):137-8.*
14. *Boeve BF, Silber MH, Ferman TJ. Melatonin for treatment of REM sleep behavior disorder in neurologic disorders: results in 14 patients. Sleep Med. 2003;4(4):281-4.*

FT02

OLGU SUNUMU: ADOLESANDA SİGARA BIRAKTIRMA

Dr. Kamile MARAKOĞLU, Dr. Aslıhan TİTREK

Selçuk Üniversitesi Tıp Fakültesi Aile Hekimliği Ana Bilim Dalı, Konya

Amaç:Dünya Sağlık Örgütü verilerine göre, Dünya'da 1,3 milyar insanın sigara içmekte olduğu, yılda 5 milyon insanın ise sigaraya bağlı nedenlerle hayatını kaybettikleri bildirilmektedir. 2030 yılında bu sayının 8 milyona ulaşacağı beklenmektedir. Türkiye'de Küresel Yetişkin Tütün Araştırması raporlarına göre 15 yaş üzeri 14,8 milyon(%27) kişi tütün kullanmaktadır. Erkeklerde tütün kullanma sıklığı %41,5 iken kadınlarda %13,1'dir. Bu bildiride Selçuk Üniversitesi Tıp Fakültesi Aile Hekimliği Sigara Bırakma Polikliniğine başvuran bir adolesanda sigara bıraktırma tedavisi ve takibini anlatmayı hedefledik.

Olgu:15 yaşında bir adolesan sigara bırakma polikliniğine ailesiyle birlikte başvurdu. 13 yaşında sigara içmeye başlayan hastanın 2 paket/yıl sigara içme öyküsü vardı. Hastanın öz geçmişinde bipolar affektif bozukluk tanısı mevcuttu. Operasyon öyküsü yok. Daha önce 2 kez sigara bırakmayı denemiş ancak tıbbi destek hiç almamış. Hasta 1 yıl önce lityum 300 mg 2x1, aripiprazol 5 mg 1x1 kullanmış olup, muayene esnasında essitalopram 10 mg kullanıyordu. Soy geçmişinde anne baba trafik kazasında exitus. Evlat edinen anne baba sigara alkol kullanmıyordu. Biyolojik anne babasında sigara ve alkol bağımlılığı mevcutmuş. Hastanın değerlendirilmesinde boy:157cm(25percentil), kilo:60kg(75percentil), ateş:36,5°C, TA:100/70mmHg, sistemik muayenesi doğaldı. Fagerstrom nikotin bağımlılık puanı:5, Beck Depresyon Ölçeği Puanı:15, CO:6 ppm olarak ölçüldü. BKİ:24,3 kg/m² idi. Hastanın Solunum fonksiyon Testi ölçümlerinde FEV1:91, FVC:80, FEV1/FVC:95, PEF:45, FEF25-75:85, Akçiger yaşı:24 idi. Sigara bırakma danışmanlığı verildi. Hasta Çocuk Psikiyatri Polikliniğine konsulte edildi. Sigara bırakmasında sakınca olmadığı belirtildi. Hastaya tedavisi şu şekilde düzenlendi: NRT (Nikotin Replasman tedavisi) 8 hafta boyunca 17,5mg/gün nikotin bandı, 4X1 2mg nikotin sakızı önerildi. Hastaya nasıl kullanacağı detaylı olarak anlatıldı ve sigara bırakma danışmanlığı verildi. Hasta 1. hafta, 2. hafta, 1. ay, 2. ay, 3. ay ve 6. ay takiplerinde sigara içmiyordu, nikotin yoksunluk semptomları açısından rahattı. 11. ay sigara kontrolü başarılıydı.

Sonuç: Sigara bırakmanın farmakolojik tedavisinde FDA onaylı Vareniklin, Bupropion ve NRT kullanılmaktadır. Ancak adolesan gruba sigara bıraktırmada ilaç seçimine dikkat edilmelidir. Adolesanlarda yapılan çalışmalarda Bireysel Davranış Değişikliği Terapisi eşliğinde orta ve düşük düzey NRT'nin adolesanlarda nikotin çekilme belirtilerini azalttığı ayrıca güvenli ve etkili olduğuna dair literatürler mevcuttur.

ADOLESANDA SİGARA BIRAKTIRMA

Dr. Kamile MARAKOĞLU, Dr. Aslıhan TİTREK

Selçuk Üniversitesi Tıp Fakültesi Aile Hekimliği Ana Bilim Dalı, Konya

Tütün kullanımı ve sigara, tüm dünya ülkeleri için en önemli ve önlenebilir halk sağlığı sorunlarından birisidir. Dünya Sağlık Örgütüne (WHO) göre dünyada her 13 saniyede bir kişi sigaradan hayatını kaybetmektedir. Dünya'da tütün kullanımına bağlı hastalıklar nedeniyle yılda 6 milyon kişi ölmektedir. Bu sayının 2030 yılında 8 milyonu aşacağı tahmin edilmektedir (1-4). Ülkemizde bu sayı yılda 100 bin kişiyi aşmaktadır ve tüm ölümlerin %23'ü tütüne bağlı hastalıklar sebebiyle olmaktadır. Dünyada 15 yaş üzeri nüfusta 1.5 milyar kişi (her üç erişkinden biri) tütün bağımlısı olup bunların %80'i orta ve gelişmekte olan

ülkelerdedir (5).Ülkemizde 2008 yılında yapılan Küresel Yetişkin Tütün Araştırması (KYTAR) göre 15 yaş ve üzerindeki yetişkinlerin %32,si; erkeklerin %48'i, kadınların %15'i, 2012 KYTAR sonucuna göre 15 yaş ve üzerindeki yetişkinlerin %27'si; erkeklerin %42'si, kadınların %13'ü sigara kullanmaktadır (3,6-8). Küresel Gençlik Tütün Araştırması'nın 2017 verilerine göre 13-15 yaş arası öğrencilerin %17,9'u halen bir tütün ürünü içmektedir. Öğrencilerin %7,7'si sigara içmekte ve bu oranın erkeklerde %9,9, kızlarda %5,3 olduğu görülmektedir (9).

WHO düzenli olarak günde 1 adet sigara içen kişiyi sigara tiryakisi ve bağımlısı olarak tanımlamaktadır (10).Sigara kullanımı erişkinlik döneminde; başta akciğer kanseri olmak üzere dudak, dil, gırtlak, yemek borusu, mide, böbrek, lösemi gibi pek çok kansere, kalp-damar hastalıklarına, KOAH ve astıma, erken yaşlanmaya ve erken ölüme yol açabilmektedir. Cildin erken yaşlanması, mide ülseri ve gastro-özofagealreflü, katarakt, tat ve koku alma duyularında zayıflama, kemik yoğunluğunda azalma, diş kaybı, iyileşme zorluğu, şeker hastalığı, bel ve sırt ağrıları, bağışıklık sisteminde zayıflama da diğer bilinen zararlarıdır. İçilen sigaradan dolayı akciğer kanseri riski 22 kat, ağız kanseri riski 30 kat artmaktadır (11-13).

Ölüme yol açan davranış ve bağımlılıklar incelendiğinde; obezite, alkol kullanımı, enfeksiyonlar, toksik ajanlar, yangınlar, trafik kazaları ve esrar, eroin gibi yasadışı madde kullanımları arasında sigara ölüme yol açan durumlar arasında ilk sırada yer almaktadır. Ergenlik döneminde sigara tüketilmesi hem erkek hem de kadında infertiliteyi (kısırlığı) artırmaktadır. Gebelik esnasında ise düşükleri tetiklemekte, istenmeyen gebelik kayıplarına (ölü doğum), hipertansiyona ve gebelik toksemisine, folat, Bı, B6, B12 vitamin eksikliklerine, yarık damak ve dudak oluşumuna, akciğer gelişiminde problemlere yol açmaktadır. Gebelikte sigara içimi ile düşük doğum ağırlıklı bebek arasında bağlantı vardır. Gebelikte sigara içme, %20-30 düşük doğum ağırlıklı bebeğe neden olmaktadır. Sigara içindeki karbonmonoksit, nikotin, toluen, siyanid ve kadmiyum gibi bileşimlerin dramatik olarak fetal büyüme defektlerine yol açtığı gösterilmiştir. Bebeklik ve çocukluk döneminde ise annenin sigara içmesi ve pasif maruziyet çocuklarda bilişsel-davranış problemlere, hiperaktiviteye ve sebebi açıklanamayan mentalredardasyonlara yol açmaktadır. Ani bebek ölümlerine, sık orta kulak ve üst solunum yolu enfeksiyonlarına, astım ve pnomöniye, yanıklar ve yanıklara bağlı ölümlere yol açmaktadır. Annenin emzirme döneminde sigara içimi süt miktarını ve içeriğini ciddi şekilde etkilemektedir. Annelerin doğum sonrası sigara içmeyi sürdürmeleri anne sütünün miktarını %30 azaltmakta, sütteki yağ miktarını, C vitaminini de azaltarak yeni doğanların daha az kilo almasına neden olmaktadır. Anne sütüne geçen nikotini alan bebekte intestinal kolik (gaz sancısı), bulantı, kusma, uyku problemi ve aşırı ağlama meydana gelmektedir (14-16).

Sigara bırakmanın değerlendirilmesi ve sigara bırakmaya destek ve tedavi primer bakımla uğraşan hekimlerin ilgi alanları ve görevleri arasındadır. Sigara bırakma kolay bir süreç olmamakla birlikte davranışsal, fiziksel ve psikolojik bir bağımlıktır. Çok az sigara içicisi sigara bağımlılığından ilk denemesinde başarılı olurken ortalama yaklaşık beşinci denemede başarılı olunabilmektedir (17). Sigara bırakma tedavisinin ilk adımı hastayı sigara bırakma konusunda motive etmek, bilgilendirmek, gerekli destek ve tedaviyi başlamaktır. Ardından uygun farmakolojik tedavi planlanmalıdır. Sigaranın bırakılması için çeşitli farmakolojik tedaviler uygun bulunmuştur (18,19).

Sigara bırakmanın medikal tedavisinde; bireysel davranış değişikliği ve psikoterapinin yanında temel olan FDA (Food Drug Administration) onaylı medikal ilaçların kullanımıdır. Ayrıca hastaların sigara ile ilgili bağımlılık durumlarını ölçmek amacıyla hastalara Fagerström Nikotin Bağımlılık Testi (FNBT) ilk muayene esnasında uygulanmalıdır. Altı sorudan oluşan ve nikotin bağımlılık düzeyini ölçmek amacıyla kullanılan bu testte

alınabilecek en yüksek puan 10'dur. 0-2 puan çok az, 3-4 puan az, 5 puan orta, 6-7 puan yüksek, 8 puan ve üzeri çok yüksek derecede nikotin bağımlılığını göstermektedir (19). Hastalara ilk muayene esnasında ekspiryum havasında karbonmonoksit (CO) ölçümleri yapılması uygun görülmektedir (20). Hastanın daha önceki sigara bırakma deneyimleri, FNBT, daha önceki ve mevcut kullandığı ilaç ve yöntemler de göz önünde bulundurularak kişiye özel en etkili ve güvenli ilaç hastaya önerilmelidir.

Bu bildiride Selçuk Üniversitesi Tıp Fakültesi Aile Hekimliği Sigara Bırakma Polikliniğine başvuran bir adolesanda sigara bıraktırma tedavisini ve takibinin anlatılması amaçlandı.
Olgu:15 yaşında bir adolesan sigara bırakma polikliniğine ailesiyle birlikte başvurdu. 13 yaşında sigara içmeye başlayan hasta günde 20 adet sigara içmekte olup, 2 paket/yıl sigara içme öyküsü vardı. Hastanın öz geçmişinde bipolar affektif bozukluk tanısı mevcuttu. Operasyon öyküsü yok. Daha önce 2 kez sigara bırakmayı denemiş ancak tıbbi destek hiç almamış. Hasta 1 yıl önce lityum 300 mg 2x1, aripiprazol 5 mg 1x1 kullanmış olup, muayene esnasında essitalopram 10 mg kullanıyordu. Soy geçmişinde anne baba trafik kazasında exitus. Evlat edinen anne baba sigara alkol kullanmıyordu. Biyolojik anne babasında sigara ve alkol bağımlılığı mevcutmuş. Hastanın değerlendirilmesinde boy:157cm(25percentil), kilo:60kg(75percentil), ateş:36,5°C, TA:100/70mmHg, sistemik muayenesi doğaldı. FNBT:5, Beck Depresyon Ölçeği Puanı:15, CO:6 ppm olarak ölçüldü. BKİ:24,3 kg/m² idi. Hastanın Solunum fonksiyon Testi ölçümlerinde FEV1:91, FVC:80, FEV1/FVC:95, PEF:45, FEF25-75:85, Akçiger yaşı:24 idi. Sigara bırakma danışmanlığı verildi. Hasta Çocuk Psikiyatri Polikliniğine konsulte edildi. Sigara bırakmasında sakınca olmadığı belirtildi. Hastaya tedavisi şu şekilde düzenlendi: NRT (Nikotin Replasman Tedavisi) 8 hafta boyunca 17,5mg/gün nikotin bandı, 4x1 2mg nikotin sakızı önerildi. Hastaya nasıl kullanacağı detaylı olarak anlatıldı ve sigara bırakma danışmanlığı ve Bireysel Davranış Değişikliği Terapisi verildi. Hasta 1. hafta, 2. hafta, 1. ay, 2. ay, 3. ay ve 6. ay takiplerinde sigara içmiyordu, nikotin yoksunluk semptomları açısından rahattı. 11. ay sigara kontrolü başarılıydı.
Tartışma ve Sonuç:
Her yaşta nikotin bağımlılığı gelişebilmesine rağmen ilk sigara, genellikle erken ergenlik döneminde denenmektedir. İlk gençlik yıllarında sigara bağımlılığını oluşturan en önemli etken sosyal çevre ve arkadaş gurubudur. Bağımlıların 3/4'ü 20 yaşından önce düzenli sigara içmeye başlamaktadırlar (21,22). Adolesanlarda sigara bıraktırmada öncelikli olan Bireysel Davranış Değişikliği Terapisi olup gerekli durumlarda medikal tedavi başlarken ve takip ederken çok dikkatli olmak gerekmektedir.
Erişkinlerde sigara bağımlılığının medikal tedavileri arasında ilk tercih tedaviler; NRT (nikotin sakızı, nikotin bandı, nazal spreyler, dilaltı tabletler), bupropion, vareniklin. Daha nadir tercihler arasında ise klonidin ve nortritilin'in sigara bıraktırmada etkili olduğu klinik deneylerle gösterilmekle birlikte kullanımı yaygın değildir (23,24). Tablo 1'de Sigara bırakma tedavi yöntemleri hakkında bilgi yer almaktadır (4,25,26).

TABLO 1: Sigara bırakma tedavi yöntemleri, tedavi süreleri ve yan etkileri

Tedavi	Etki mekanizması	Tedavi	Yan etkiler
Nikotin Replasman Tedavisi*	***Beyinde dopamin salgılatan nikotinik reseptörleri doğrudan uyarır***		
Sakız, pastil, *mikrotablet	*Buccal mukozadan venöz dolaşıma salınır*	8-12 hafta	Çene yorgunluğu, gastrointestinal yan etkiler, kullanım zorluğu
Bant *	*Nikotinin deriden emilimi, uzun etki süresi*	8-12 hafta	Deri irritasyonu, ödem 24 saatlik yamalar uyku bozuklukları, eğer sigara içmeye devam ederlerse bulantı, kusma, çarpıntı, hipotansiyon, görme ve işitme bozuklukları gibi nikotin toksite belirtileri
Sprey*	*Nikotin nasal mukoza aracılığıyla venöz sisteme hızla ulaşır*	8-12 hafta	Lokal irritasyon, sulu göz, hapşırma, öksürük, çarpıntı, baş ağrısı
İnhaler *	*İnhalasyon yoluyla*	8-12 hafta	Göze hoş görünmeyebilir
Bupropion*	***Çoklu etki mekanizması: noradrenerjik sistem, dopamin transporter inhibisyonu ve nikotin asetilkolin fonksiyonel antagonizması***	7-9 hafta	Uykusuzluk, baş ağrısı, ağız kuruluğu, tremor, %0,1 nöbet riski
Veranicline *	***α4β2 nikotinik reseptör parsiyel agonisti***	12 hafta	Bulantı, gastrointestinal yan etkiler, canlı rüyalar, uykusuzluk
Klonidin*	***alfa reseptör agonistidir***	3-4 hafta	Ortostatik hipotansiyon, baş dönmesi, yorgunluk, uykululuk
Nortriptillin **	***Noradrenerjik bir antidepresandır***		Ağız kuruluğu, görme bulanıklığı, sersemlik, aşırı dozlarında ritim bozuklukları

*İlk seçenek tedavi, **İkinci seçenek tedavi, FDA tarafından onaylanmamıştır.

Nikotin Replasman Tedavisi (NRT); Sigarayı bırakma yöntemlerinden biri olarak nikotin yerine koyma (replasman) tedavisinin amacı, sigaranın kesilmesini izleyen dönemde ortaya çıkan nikotin yoksunluk belirtilerin ortadan kaldırmaktır. NRT için kullanılan preparatlar; transdermal nikotin bandı, nikotin sakızı, nazal sprey, sublingual tablet ve inhalerdir. Ülkemizde bu preparatlardan yalnızca transdermal nikotin bandı ve nikotin sakızı ve bulunmaktadır. Ülkemizde bu preparatlardan (Nicorette Invısı, Nicotinell, Nicorette) bulunmaktadır. Nicorette Invısı 10mg, 15mg ve 25mg'lik 7 flaster şeklinde bulunmaktadır.

Bir banttan 16 saat süresince nikotin salınmaktadır. Ülkemizde bulunan preparatların kullanımı Tablo 2 ve 3'te görülmektedir (4,27).

TABLO 2: Nicorette Invısı kullanım talimatı

Çok sayıda sigara tüketen kişiler (Fagerstöm testi 6 ve üzeri olanlar veya günde 20 adetten fazla içenler)			**Az sayıda sigara tüketen kişiler (Fagerstöm testi 6 ve altı olanlar veya günde 20 adetten az içenler)**		
Doz rejimi		Süre	Doz rejimi		Süre
1.adım	25 mg	İlk 8 hafta			
2.adım	15mg	Son iki hafta	2.adım	15 mg	İlk 8 hafta
3.adım	10mg	Son 2 hafta	3.adım	10 mg	Son 4 hafta

Nicotinell TTS 10: 17,5 mg nikotin içeren 10 cm2 büyüklüğünde 7 plaster; Nicotinell TTS 20: 35 mg nikotin içeren 20 cm2 büyüklüğünde 7 plaster; Nicotinell TTS 30: 52,5 mg nikotin içeren 30 cm2 büyüklüğünde 7 plaster şeklinde piyasada bulunmaktadır (Tablo 3). Nikotin sakızının 2 ve 4 mg olmak üzere iki formu vardır (Nicotinell ve Nicorette). 4 mg'lık form ağır bağımlılar için daha uygundur. Nikotin bandının kullanımı diğer formlara göre daha rahattır. Saatte 0,5-1,5 mg nikotin salınmaktadır (Tablo 4). (4,24-27)

TABLO 3: Nicotinell bant kullanım talimatı

	Başlangıç evresi 3-4 hafta	**Takip tedavisi 3-4 hafta**	**Sonlandırma tedavisi 3-4 hafta**
Çok sayıda sigara tüketen kişiler (Fagerstöm testi 5 ve üzeri olanlar veya günde 20 adetten fazla içenler)	Nicotinell 21mg/24sa	Nicotinell 14mg/24sa** ya da Nicotinell 21mg/24sa kadar artış*	Nicotinell 7mg/24sa** ya da Nicotinell14mg/24sa sonrasında Nicotinell 7mg/24sa
Az sayıda sigara tüketen kişiler (Fagerstöm testi 6 ve altı olanlar veya günde 20 adetten az içenler)	Nicotinell 14mg/24sa**ya da Nicotinell 21mg/24sa kadar artış	Nicotinell 7mg/24sa** ya da Nicotinell 14mg/24sa kadar artış	Tedavinin sonlandırılması** ya da Nicotinell 7mg/24sa

*Tedaviyi sonlandırma semptomların ne kadar kontrollü olduğuna göre değişmektedir.
**Tedavi hastanın semptomlarına sonuçların tatmin edici olma durumuna göre değişebilir.

TABLO 4: Nikotin sakızının kullanım dozu ve yan etkileri

Tedavi	Doz	Kullanım ve Yan etki
Nikotin sakızı	2 ve 4 mg olmak üzere iki form mevcut olup günde 25 adetten az içenlere 2 mg lık form, günde 25 adetten fazla içenlere 4 mg lık form önerilmektedir.	Maximum fayda sağlamak için aralıklı çiğneme modeli ve yanak arasında bekletme önerilmektedir. Sakız ile birlikte ilk yarım saat içinde asitli gıdaların ve sıvıların tüketimi sakızın etkinliğini azaltmaktadır. Protezler veya dolgular ile kullanımı zorlaşmaktadır. Nikotin sakızı ve diğer farmakaolojik tedaviler ile kombine edilmesi başarıyı artırmaktadır. FDA gebelik kategorisi C dir. Kalp hastalarında, dental rahatsızlığı olanlarda ve temporamandibular eklem rahatsızlığı olanlarda dikkatli kullanılmalıdır. Yan etkileri: Gastrointestinal şikayetler, ağız ya da boğaz tahrişi

Yapılan çalışmalarda adolesanlarda sigara bırakma tedavisinde NRT kullanımı ön görülmektedir (28,29).

2006 yılında, İngiltere'de Roddy ve arkadaşlarının yapmış olduğu çalışmada sosyoekonomik durumu yetersiz 11-21 yaş arası sigara içen 264 adolesan ve gençe yüz yüze görüşme tekniği ile anket uygulanmış. Bunların 98'i sigara bırakma çalışmasına dahil edilmiş. Çalışmaya dahil edilen kişiler randomize olarak 49'ar kişilik 2 gruba ayrılmış. Bir gruba altı haftalık nikotin bandı tedavisi, diğer gruba plasebo tedavi uygulanmış. Bu çalışmada nikotin bandının gençlerde güvenli olduğu ama, istedikleri sigara bırakma başarısını elde edemedikleri görülmüştür (28).

Hanson ve arkadaşları 2003 yılında Amerika'da sigara içen adolesanlarda nikotin bandının etkinliğini inceleyen çift kör, randomize kontrol çalışmasını yapmışlardır. Çalışmaya son altı aydır her gün düzenli olarak günde 10 ve üzeri sigara içen 13-19 yaş arası 100 adolesan dahil edilmiş. Katılımcılar 13 hafta boyunca 10 yüz yüze poliklinik görüşmesi ile takip edilmiş. Nikotin bandı grubunda günde ≥15 sigara içenlere ilk 6 hafta 21 mg/gün nikotin bandı, sonraki 2 hafta 14 mg/gün nikotin bandı ve en son 2 hafta 7 mg/gün nikotin bandı tedavi protokolü ile takip edilirken, günde 10-14 arasında sigara içenlere ise ilk 6 hafta 14 mg/gün nikotin bandı, sonraki 4 hafta 7 mg/gün nikotin bandı tedavi protokolü ile takip edilmiş. Plasebo bant grubuna göre nikotin bandı kullan grupta sigaraya istek ve genel yoksunluk semptom skoru anlamlı derecede düşük bulunmuştur (p=0.011, p=0.025). Yan etki açısından plasebo grubuna göre farklılık bulunmamış. Bu çalışmada adolesanlarda sigara bırakma tedavisinde NRT etkili ve güvenli bir yöntem olduğu vurgulanmıştır (29).

Bupropion; Bupropion sigara içme isteği üzerine azaltıcı etkisi olan bir antidepresandır. Sigara bırakma tedavisinde etkili olduğu gösterilmiştir. Bupropion antidepresan etkisini noradrenerjik sistemden üzerinden gösterir. Başlangıç dozu günde tek doz 150 mg'dır. Üç gün bu şekilde devam edilir, 4. Gün günlük doz 300 mg'a çıkarılır ve tedavi sonuna kadar bu şekilde devam edilir. Hasta sigara içmeyi ikinci hafta keser ve 12 haftalık bir tedavi önerilir (25,26,30).

Adolesanlarda bupropion kullanımı sınırlı sayıda çalışmada görülmüştür. 2015 yılında Scott ve arkadaşlarının Arizona'da yapmış olduğu adolesanlarda bupropion ile sigara bırakma

isimli çalışmasında 14-17 yaş arası 312 düzenli sigara içen adolesan randomize, çift kör, 3 gruba ayrılmış. Birinci gruba 300mg sürekli salınımlı bupropion, ikinci gruba 150 mg sürekli salınımlı bupropion verilmiş ve üçüncü gruba plasebo verilmiş. Çalışmanın sonucunda 300 mg bupropion verilen grupta yüksek bağımlılarda, karbonmonoksit ve idrar kotinin ölçümlerine göre sigarayı bırakma sıklığı anlamlı derecede yüksek bulunmuştur (31).

Vareniklin; Vareniklin nikotinik α4β2 reseptörlerin parsiyel agonistidir. Mezolimbik yolakta dopamin salınımı arttırır. FDA tarafından sadece sigara bağımlılığında kullanımı için 2006 yılında onay verilmiştir. Başlangıç dozu günde 0,5 mg'dır. Üç gün bu şekilde devam edilir, 4. gün 1 mg'a çıkarılır ve tedavi sonuna kadar bu şekilde devam edilir. Hasta sigara içmeyi ikinci hafta keser ve 12 haftalık bir tedavi önerilir. Gebelik kategorisi C'dir (24-26).
2019 yılında Gray ve arkadaşlarının Amerika'da yapmış olduğu adolesanlarda sigara bırakmada vareniklinin etkinliği ve güvenliği isimli çalışmasında; 157 düzenli sigara içen adolesan randomize çift kör olarak (1:1 oranında) vareniklin ve plasebo olarak 2 gruba ayrılıp tedavi verilmiş. Katılımcıların 12 hafta tedavi takibi sonrasında sigara bırakma durumları, solunum havasındaki CO ve idrarda kotinin düzeyleri ile doğrulanmış. Çalışma sonunda iki grup arasında yan etki açısından anlamlı bir farklılık görülmemiştir [vareniklin grubunda hiç yan etki yaşamayan sıklığı %71,4 (n=55), plasebo grubunda hiç yan etki yaşamayan %75 (n=60)] (32).
Sigara bırakmanın farmakolojik tedavisinde erişkinlerde FDA onaylı Vareniklin, Bupropion ve NRT kullanılmaktadır. Ancak adolesan gruba sigara bıraktırmada ilaç seçimine dikkat edilmelidir. Adolesanlarda yapılan çalışmalarda Bireysel Davranış Değişikliği Terapisi eşliğinde gerekli durumlarda orta ve düşük düzey NRT'nin adolesanlarda nikotin çekilme belirtilerini azalttığı ayrıca güvenli ve etkili olduğuna dair literatürler mevcuttur.

Kaynaklar:

1. *World Health Organization. WHO report on the global tobacco epidemic 2013. [Updated 2013; cited 2014 Oct 30]. http://www.who.int/tobacco/global_report/2013/en/ (Erişim Tarihi: 27.11.2019).*

2. *Gunay T, Pekel O, Simsek H, Sahan C, Soysal A, Kilinc O, Ergor G. Smoking habits and cessation success, what differs among adults and elderly? Saudi MEd J. 2014;6:585-589.*

3. *Marakoğlu K, Çetin Kargın N, Uçar RM, Kızmaz M. Evaluation of pharmacologic therapies accompanied by behavioural therapy on smoking cessation success: a prospective cohort study in Turkey. Psychiatry and Clinical Psychopharmacology 27.3 (2017): 221-227.*

4. *Marakoğlu K, Çetin Kargın N. Medical treatment of nicotine addiction. Türkiye Klinikleri 2016;7(5).*
5. *Türkiye'de Tütün Kontrol Çalışmaları. https://www.saglik.gov.tr/TR,3286/turkiyede-tutun-kontrolu-calismalari-31052012.html (Erişim Tarihi:26.11.2019).*

6. *Global adult tobacco survey, Ankara. Turkey 2008 [cited 2010 July 2]. https://www.who.int/tobacco/surveillance/en_tfi_gats_turkey_2009.pdf (Erişim Tarihi: 27.11.2019).*

7. *Global adult tobacco survey, Ankara. Turkey 2012 [cited 2016 Jan 30]. http://www.who.int/tobacco/surveillance/survey/gats/report_tur_2012.pdf?ua=1 (Erişim Tarihi: 27.11.2019).*

8. *Turkish Statistical Institute. Global adult tobacco survey, Ankara, Turkey 2012 [Updated 2012; cited 2013 Oct]. http://www.tuik.gov.tr/PreHaberBultenleri.do?id=13425 (Erişim Tarihi:26.11.2019).*

9. *Küresel Gençlik Tütün Araştırması (KGTA-2017). https://hsgm.saglik.gov.tr/depo/birimler/tutun-mucadele-bagimlilik-db/duyurular/KGTA-2017_pdf.pdf (Erişim Tarihi: 27.11.2019).*

10. *Kutlu R, Marakoğlu K, Çivi S. Selçuk Üniversitesi Tıp Fakültesi hemşirelerinde sigara içme durumu ve etkileyen faktörler. C. Ü. Tıp Fakültesi Dergisi 27 (1): 29 – 34, 2005.*

11. *Zerin M, Karakılçık AZ, Cebeci B, İriadam M. Üniversite öğrencilerinde kısa ve uzun süre sigara içiminin bazı solunum parametreleri üzerine etkisi. Gaziantep Med J 2010; 16 (3): 9-12.*

12. *Salepçi BM, Havan A, Fidan A, Kıral N, Saraç G. Sigara bırakma polikliniğinin KOAH ve küçük hava yolu hastalığının erken tespitine katkısı. Solunum 2013; 15 (2): 100-4.*

13. *Clotet J, Gomez-Arbones X, Ciria C. Spirometry is a good method for detecting and monitoring chronic obstructive pulmonary disease in high-risk smokers in primary health care. Arch Bronconeumol 2004; 40 (4): 155-9.*

14. *Dempsey DA, Benowitz NL. Risks and benefits of nicotine to aid smoking cessation in pregnancy. Drug Saf 2001; 24(4):277-322.*

15. *Milberger S, Biederman J, Faraone SV, Chen L, Jones J. Is maternal smoking during pregnancy a risk factor for attention deficit hyperactivity disorder in children? Am J Psychiatry 1996;153(9):1138-42.*

16. *Marakoğlu K, Erdem D. Evaluation of smoking among pregnant women in a central anatolian city of Turkey: comparison with other countries. Turkiye Klinikleri Journal of Medical Sciences, 2011; 31(4), 928-934.*

17. *Andreas S, Chenot FJ, Diebold R, Peachey S, Mann K. Effectiveness of varenicline as an aid to smoking cessation in primary care: an observational study. Eur Addict Res 2013;1: 47-54.*

18. *Scallan C, Doonan RJ, Daskalopoulou SS. The combined effect of hypertension and smoking on arterial stiffness. Clin Exp Hypertens 2010;6:319-28.*

19. *Fagerstrom KO, Heatherton TF, Kozlowski LT. Nicotine addiction and its assessment. Ear Nose Throat J 1990;11:763-5.*

20. *Kargın NÇ, Marakoğlu K. Sigarayı bırakmanın solunum işlevleri üzerine etkisi. Türk Aile Hek Derg 2015;19(3):129-33.*

21. *Dedeoğlu N, Dönmez L, Aktekin M. Antalya'da sağlık personelinde tütün kullanımı. Sağlık için Sigara Alarmı 1994; 1:7-11.*

22 *Öztürk M, Önder Y, Gür R, Sevgi H. Askerlik görevini yapmakta olan doktorlar arasında sigara içme durumu. Sağlık için Sigara Alarmı 1996; 3(1-2):25-28.*

23. *Ozdemir L, Kocoğlu G, Sümer H, Nur N, Polat P, Aker A. Frequency of some chronic diseases and risk factors among the elderly people in Sivas, Turkey. Çukurova Med J 2005;27:89-94.*

24. *Larzelere MM, Williams DE. Promoting smoking cessation. Am Fam Physician 2012;6:591- 8.*

25. *Frishman WH. Smoking cessation pharmacotherapy. Ther Adv Cardiovasc Dis 2009;3: 287-308.*

26. *Boztaş MH, Abatan E. Sigara bırakmada ilaç tedavisi. Klinik Psikiyatri 2013;16:110-9.*

27. *Rx Medifarma 2015 İnteraktif İlaç Bilgi Kaynağı. http://www.eczanet.com/.*

28. *Roddy E, Romilly N, Challenger A, Lewis S, Britton J. Use of nicotine replacement therapy in socioeconomically deprived young smokers: a community-based pilot randomised controlled trial. Tob Control. 2006 Oct;15(5):373-6.*
29. *Hanson K, Allen S, Jensen S, Hatsukami D. Treatment of adolescent smokers with the nicotine patch. Nicotine Tob Res. 2003 Aug;5(4):515-26.*

30. *Okuyemi KS, Nollen NL, Ahluwalia JS. Interventions to facilitate smoking cessation. Am Fam Physician 2006;74(2):262-71.*

31. *Scott J. Leischow , Myra L. Muramoto, Eva Matthews, Lysbeth L. Floden, Rachel A. Grana. Adolescent smoking cessation with bupropion: The role of adherence. Nicotine & Tobacco Research, 2016, 1202–1205.*

32. *Gray KM , Baker NL, McClure EA, Tomko RL, Squeglia LM, Saladin ME, Carpenter MJ. Efficacy and safety of varenicline for adolescent smoking cessation: A randomized clinical trial. JAMA Pediatr. 2019 Oct 14.*

FT03

Immunodeficiency In The Human Newborn

Öner Özdemir, MD

Professor of Pediatrics, Division of Allergy and Immunology, Department of Pediatrics, Research and Training Hospital of Sakarya University, Adapazarı, Sakarya, Türkiye.

Abstract

The normal neonate's immune system is anatomically intact, antigenically naive, and shows somewhat decreased role of a number of immunological pathways. Aside from anatomic characteristics (eg, thin skin and mucosal barriers) of newborn, weakened proinflammatory and T helper cell type 1 (Th1) cytokine release and lessened cell-mediated immunity predispose the neonate more susceptible to all types of infections. However, most of the newborn stand this period without sickness due to intact innate immunity with other adaptive defense mechanisms, and maternally transferred immunoglobulin G (IgG).

Besides unique immunity of the premature baby and normal newborn; risk factors, clinical features and laboratory evaluation of primary immunodeficiency diseases (PIDs) are told in this presentation. Moreover, most important PIDs of the newborn including antibody deficiencies, cellular/combined immunodeficiencies, phagocytic diseases, complemento-pathies and innate immune system disorders are briefly mentioned here as well.

Background

The premature and normal newborns have a unique immunity. The innate and adaptive immune systems modify as they grow old. Many parts of the immune system in the healthy newborn are dissimilar since it is intended to facilitate the transition from intrauterine to outside world.

Prematurity:

Premature infants have immune defects consistent with their degree of immaturity. Accordingly, it can be hard to differentiate a premature infant with PID from an infant who is just premature, unless there is a positive family history of PID. Compared with the term infant, the preterm demonstrates fragile skin, moderate to severe hypogammaglobulin-emia, lower lymphocyte counts, weaker proinflammatory / Th1-polarizing cytokine responses, and lower plasma complement and antimicrobial protein / peptide levels, rendering the preterm infant particularly susceptible to infection.

Physiologic hypogammaglobulinemia of infancy (PHI):

Maternal IgG is existent at birth and disappears over several months, with a steady maturation of B cells to plasma cells able to synthesize immunoglobulins in the infant. This leads to PHI, with serum IgG levels <400 mg/dL from roughly 3 to 6 months of age.

Risk Factors For Primary Immunodeficiencies

Factors increasing mostly risk of PID in a neonate include: The most predictive factor for a PID is a family history of immunodeficiency, confirmed or suspected, leading to early death or recurrent/chronic illness in one of more family members. Some newborns inherit a genetic immune defect manifesting at birth or early infancy, named as PID. PIDs are occurring in up to approximately 1 out of 1.200 individuals. Certain ethnic groups with founder mutations (eg, severe combined immunodeficiency [SCID] in Navajos, ataxia-telangiectasia in Amish, and Bloom syndrome in Ashkenazi Jews) or countries or populations where there is a high incidence of consanguinity (Amish, many Arab countries) have a higher incidence of immunodeficiency.

CLINICAL FEATURES SUGGESTIVE OF PRIMARY IMMUNODEFICIENCIES

A newborn at birth or during the first months of life might exhibit signs and symptoms indicative of immunodeficiency, below. These signs and symptoms are following: Syndromic look (abnormal facies); infection at any location; infection as a result of live vaccines (eg, rotavirus, Bacille Calmette-Guerin [BCG], oral polio); failure to thrive; chronic diarrhea; abdominal distention; lymphadenopathy and/or hepatosplenomegaly; lung or cardiac disorder; mucosal diseases eg thrush, mouth sores, and ulcerations; skin rashes, pigmentary disorders, or alopecia; petechiae, melena, bleeding; and late separation of umbilical cord.

Laboratory Evaluation For Primary Immunodeficiencies Of Newborn

Screening laboratory tests and preliminary evaluation should be done if one or more of the risk factors for immunodeficiency are available. PIDs may also be demonstrated on neonatal screening.

Initial screening in the newborn includes a complete blood count with differential and Ig levels. However, measuring quantitative Ig levels (IgG, IgA, IgM, and IgE) is less useful in neonate because they produce only small amount of Igs and most of the IgG in early **infancy is transferred IgG from the mothers.**

Leukopenia is described as a white blood cell (WBC) count: <4.000 cells/ µL. Lymphopenia is described as an absolute lymphocyte count <2.500 (3.000) cells/µL in infants and suggests a T- and/or B- cell defect. Mild neutropenia is described as a neutrophil count 1.000-1.500 cells/µL, moderate neutropenia 500-1.000 cells/µL, and severe neutropenia <500 cells/µL. Neutropenia <100 cells/µL is life threatening. Neutropenia in the neonate can be triggered by sepsis, necrotizing enterocolitis, maternal autoimmune disorders or medications, or primary phagocyte disorders. Thrombocytopenia may be owing to PID (eg, in Wiskott-Aldrich syndrome [WAS]) or related with infection (eg, fungal or cytomegalovirus [CMV] infection).

T-, B-, and natural killer (NK)- cell identification by flow cytometry is requested if lymphopenia is observed on a CBC with differential, or if SCID is assumed even in the case of a normal lymphocyte count. This procedure enumerates CD3+ cells (T lymphocytes), CD3+CD4+ cells (T helper cells), CD3+CD8+ cells (T cytotoxic cells), CD19+ or CD20+ cells (B lymphocytes), and CD3-CD16/56+ cells (NK cells). This test will discover most infants with SCID or complete DiGeorge syndrome and may give guidance as to the character of the T-cell defect. If a T-cell defect is thought, the preliminary test for T-cell function is a lymphocyte proliferation assay. Neonates demonstrate lymphoproliferation to nonspecific stimuli, such as the mitogen phytohemagglutinin or anti-CD3, but not to most antigens.

Newborn screening:

T-cells are released from the neonatal thymus in a large amount, hence accounting for the high numbers of circulating lymphocytes in the neonatal blood. T-cells constitute nearly fifty percent of the lymphocytes in the first year of life. Circulating T-cells in the neonate's blood (including heel stick blood) can be predicted by determining T-cell receptor excision circles (TRECs), a derivative of thymic production of freshly made T-cells.

Specific (Primary) Immunodeficiency Disorders Of Neonate

Once an immunodeficiency disorder is doubted, the next phase is to define whether the immunodeficiency is likely to be the normal physiologic susceptibility of a newborn and/or heightened by additional factors causing a secondary/acquired immunodeficiency (eg, prematurity, blood loss due to phlebotomy or surgery), or a PID owing to an underlying genetic defect changing the immune system function.

Antibody Deficiencies:

Antibody deficiency typically causes to frequent, often severe, upper and lower airway infections with encapsulated bacteria (eg, *Streptococcus pneumoniae*, *H. influenzae*). Children

usually are brought with recurrent otitis media, sinusitis, and pneumonia. Frequent accompanying findings in children include poor growth, failure to thrive, recurrent fevers, and chronic diarrhea.

A neonate with hypogammaglobulinemia (serum IgG: <400 mg / dL, severe <200 mg / dL) is infrequent, even regardless of low or absent B cells. The most common reason is prematurity with exaggerated physiologic hypogammaglobulinemia. Another explanation may be a low maternal IgG level with lessened transplacental IgG passage.

Infants including neonates with congenital agammaglobulinemias usually have low B cells and absent or very low IgM and IgA and do not become hypogammaglobulinemic until after the 3rd month of life, because of the existence of transplacental maternal IgG. However, the diagnosis can be made prenatally in families with a history of agammaglobulinemia by genetic testing or assaying B cells on a fetal blood sample. The presence of a female fetus on ultrasound or chromosome analysis on prenatal blood makes X-linked agammaglobulinemia very unlikely. Routine kappa-deleting recombination excision circles (KRECs) testing at the time of birth is a planned screening method.

Cellular/Combined Immunodeficiencies:

Infants with cellular immunodeficiency have deficiencies of both T-cell immunity and antibody immunity (combined immunodeficiency [CID]). They characteristically manifest in early infancy due to the defect in cellular immunity, especially those with a severe defect.

Severe Combined Immunodeficiencies (Scids):

SCIDs are defined by severe defects in both cellular and antibody deficiency. Most affected infants seem to be normal at birth, but develop severe infections with organisms that include viruses, bacteria, and fungi within the first few months of life. Stark complications may happen after routine immunization with live-virus vaccines. Related findings include chronic diarrhea and failure to thrive. Other motives to think SCID are lymphopenia on a routine CBC or a chest radiograph demonstrating no thymic shadow. A few infants are noticeable with graft-versus-host disease (GVHD) as a result of transplacental passage of alloreactive maternal T cells or unintentional delivery of viable lymphocytes from a blood transfusion. Manifestations of acute GVHD include maculopapular rash, vomiting, and diarrhea.

Inheritance of SCID is X-linked or autosomal recessive. A family history of the disease is often negative because new mutations are common. Early diagnosis can be made by prenatal tests of fetal blood, by neonatal TREC screening, or by recognition of early manifestations and confirmation by immunologic and genetic testing. Typical laboratory features on initial screening studies include profound lymphopenia with low T cells (<1.500 cells/µL) and absent antibody responses to vaccine antigens. Immunoglobulin synthesis is absent or minimal. Referral to a tertiary medical center for genetic analysis, tissue typing and hematopoietic stem cell transplantation is mandatory when SCID suspected.

Other (Less Severe) Combined Immunodeficiencies:

The most common CIDs that present in the newborn period, or are identified by newborn **screening, and their identifying features are as follows:**

●DiGeorge syndrome: The immunodeficiency can range from recurrent sinopulmonary infections to a SCID phenotype (complete DiGeorge). Associated features include conotruncal cardiac anomalies, hypocalcemia, hypoplastic thymus, and craniofacial abnormalities.

●Wiskott-Aldrich syndrome (WAS): WAS is an X-linked disorder distinguished by thrombocytopenia, small platelets, early onset of eczema, and a CID. The patients manifest with petechiae, melena, and soft tissue bruising, or bleeding after circumcision.

●X-linked hyperimmunoglobulin M syndrome (HIGM): X-linked HIGM often presents in the first few months of life with increased susceptibility to recurrent sinopulmonary infections, opportunistic infections, chronic diarrhea and/or failure to thrive.
●Chronic mucocutaneous candidiasis (CMCC): The patients typically present in the preschool years with chronic noninvasive *Candida* infections of the skin, nails, and mucous membranes, but a few patients manifest in the first months of life, especially those with familial candidiasis.
●Ataxia-telangiectasia (AT): Most AT patients are asymptomatic for the first several years, but a few patients have been identified on newborn TREC screening, in spite of the presence of some T cells.

Phagocyte Defects:
Infection spectrum from phagocytic disorders ranges from mild, recurrent skin infections to overwhelming, fatal, systemic infection. These patients are mostly vulnerable to bacterial (eg, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Nocardia asteroides*, *Salmonella typhi*) and fungal (eg, *Candida* and *Aspergillus* species) infections. Immune response to nontuberculous mycobacteria (NTM) may also be atypical, especially in chronic granulomatous disease (CGD).
●Congenital neutropenia(s): They start around birth and due to genetic defects causing primary bone marrow failure. They include severe congenital neutropenia (<200 cells/ µL; Kostmann syndrome), cyclic neutropenia, and Shwachman-Diamond syndrome.
●Chronic granulomatous disease (CGD): The X-linked type of CGD can present in infancy. It is a genetically heterogeneous disease known by life-threatening infection with specific bacteria and fungi causing to the formation of granulomata over the body.
●Leukocyte adhesion deficiency (LAD): The LADs are a set of disorders described by recurrent bacterial infections and weak wound healing due to defects of neutrophil adhesion and movement. A typical characteristic is delayed separation of the umbilical cord.

Complement Deficiencies:
Novel inherited complement deficiencies are infrequently defined in neonates without a family history of a complementopathy. Screening for a complement defect is necessary in neonates with a positive family history and severe encapsulated bacteria infections eg streptococci, meningococci, or *H. influenzae* type B.

Other Defects In The Innate Immune System:
They include NK cell deficiency syndromes and defects in cytokines and proinflammatory mediators released by innate immune cells, eg Mendelian susceptibility to mycobacteria disease (MSMD).

Conclusion
The normal neonate's immune system is anatomically complete, but antigenically naïve and functionally distinct, with lower inflammatory and Th1 responses, potentially making the newborn more susceptible to infection. Nevertheless, most newborn survive the period without disease because of imperfect innate immunity with other adaptive defense mechanisms and maternal IgG transferred through the placenta.

References
1. *Subbarayan A, Colarusso G, Hughes SM, et al. Clinical features that identify children with primary immunodeficiency diseases. Pediatrics 2011; 127:810.*
2. *Del Vecchio A, Christensen RD. Neonatal neutropenia: what diagnostic evaluation is needed and when is treatment recommended? Early Hum Dev 2012; 88 Suppl 2:S19.*

3. *Stiehm ER, Ochs HD, Winkelstein JA. Immunodeficiency disorders: General considerations. In: Immunologic disorders in Infants and Children, 5th ed, Stiehm ER, Ochs HD, Winkelstein JA (Eds), Elsevier, Philadelphia 2005. p.311.*
4. *Kwan A, Church JA, Cowan MJ, et al. Newborn screening for severe combined immunodeficiency and T-cell lymphopenia in California: results of the first 2 years. J Allergy Clin Immunol 2013; 132:140.*
5. *Bousfiha AA, Jeddane L, Ailal F, et al. A phenotypic approach for IUIS PID classification and diagnosis: guidelines for clinicians at the bedside. J Clin Immunol 2013; 33:1078.*
6. *Sharma AA, Jen R, Butler A, Lavoie PM. The developing human preterm neonatal immune system: a case for more research in this area. Clin Immunol 2012; 145:61.*
7. *Ballow M, Cates KL, Rowe JC, et al. Development of the immune system in very low birth weight (less than 1500 g) premature infants: concentrations of plasma immunoglobulins and patterns of infections. Pediatr Res 1986; 20:899.*
8. *Kobayashi RH, Hyman CJ, Stiehm ER. Immunologic maturation in an infant born to a mother with agammaglobulinemia. Am J Dis Child 1980; 134:942.*
9. *Picard C, von Bernuth H, Ghandil P, et al. Clinical features and outcome of patients with IRAK-4 and MyD88 deficiency. Medicine (Baltimore) 2010; 89:403.*
10. *Mahmoudi M, Mollnes TE, Kuijpers T, et al. Complement deficiencies. In: Primary Immunodeficiency Diseases - Definition, Diagnosis, and Management, Rezaei N, Aghamohammadi A, Notarangelo L (Eds), Springer, Berlin 2008. p.235.*

FP04

Norm Values of Head Circumference in Turkish Children

Saime Sundus Uygun[1], Mehmet Akif Bakir[2], Haluk Yavuz [3]

[1]Division of Neonatology, Department of Pediatrics, Selcuk University, Konya, Turkey;

[2]Department of Statistcs of Faculty of Sciences, University of Gazi, Ankara, Turkey;

[3]Division of Pediatric Neurology, Department of Pediatrics, Necmettin Erbakan University, Meram Medical Faculty, Konya, Turkey

Introduction

Physical growth of babies and children is an important determinant of health and disease conditions.

Growth curves serve physician to determine at what point the child deviates from normal measurements. And also can provide information, whether the child needs to be examined, by considering the nutritional status and general health status **(Gökçay et al. 2008).**

Although head circumference measures skull size, it typically reflects overall brain volume and can be described as a "widely used indicator of neural growth and brain size". Brain size out of normal values, is an important risk factor for cognitive and motor delay **(Harris 2015).**

Head circumference is a major diagnostic and prognostic marker used to help in identifying symmetric or asymmetric growth, microcephaly and macrocephaly. All of these items are associated with many reasons that require further evaluation. It is therefore essential that the clinician should be supported with trustworthy and representative reference growth curves **(Barbier et all. 2013).**

Materials and methods

Children included in the sample of this study have the following characteristics:

The child has no congenital deformity, chronic illness, or is not on medication.

The family's income is high enough to meet the child's basic needs.

The child's gestational age should be 38-42 weeks if she/he is younger than 2 years old, and the child wasn't born as a result of multiple pregnancies.

All measurements were performed by the same clinician using a same, calibrated, set tape measure.

A questionnaire sheet was also filled out by parents.

Ek 1:Bilgilendirilmiş Onam Formu (Questionnaire sheet)

Büyüme ve gelişmenin takibinde baş çevresi ölçümü önemli bir belirteçtir. Bu ölçümün uygun şekilde yapılması ve normal değerin ne olduğunun bilinmesi sağlıklı büyüme için önemlidir.

Bu çalışmada baş çevresi ölçümünü mezura kullanarak yapacağız. Bunun dışında size herhangi bir girişimde bulunulmayacaktır. Bu ölçümü yaptırmak istememeniz durumunda hastanede veya bizimle daha sonra karşılaşmanız durumunda herhangi bir olumsuzlukla karşılaşmayacaksınız. Katılıp katılmamakta serbestsiniz. Sizin gibi yaklaşık on bin civarında çocukta bu ölçümü yapacağız. Ayrıca isminizi kullanmadan genel sağlık durumunuzla ilgili bazı sorular soracağız.

Katılımınızdan dolayı teşekkür ederiz.

Bu konuyla ilgili sorunuz olduğu takdirde Meram Tıp Fakültesi Çocuk Servisinden Dr. Saime Sündüs Uygun a 2236879numaralı telefondanulaşabilirsiniz.

Annesi/Babası(imza): Çocuk(imza):

SORULAR

İsim: Telefon:

Cinsiyet: Kız Erkek Ölçüm:
Doğum tarihi:…/..../…. Ölçüm tarihi:../.../…. Yaş:..yıl..ay (Bu kısmı doktor dolduracak)
Annenin memleketi: Babanın memleketi:
Ailenin aylık toplam geliri nedir?:
Çocuğun sürekli hastalığı var mı? : Evet Hayır Varsa adı:
Bu hastalık büyümeyi etkiler mi? : Evet Hayır (Bu kısmı doktor dolduracak)
Sürekli kullandığı ilaç var mı?:
Bebek Zamanında mı doğdu?: Evet Hayır
Hayırsa kaç yıllık/haftalık doğdu?:
Çoğul gebelikle mi dünyaya geldi?:
Bebeğin doğum kilosu:
Bebeğinizi ne ile besliyorsunuz?: Anne sütü Mama Ek gıda Karışık
Gebelik esnasında evde sigar içildi mi?:
Doğum sonrası evde sigara içildi mi?:
Yakın akrabalarınızda başı küçük olan var mı?:
Yakın akrabalarınızda başı büyük olan var mı?:
Annenin bitirdiği okul: Okul bitirmedi İlkokul Ortaokul Lise Üniversite
Babanın bitirdiği okul: Okul bitirmedi İlkokul Ortaokul Lise Üniversite
Çocuğun okul başarısı: Takdir aldı Teşekkür aldı Başarılı Geçer Zayıfı var

Statistical review

In this study, the growth curves were estimated by LMS method suggested in Tim Cole's article 'Smoothing reference centile curves: The LMS method and penalized likelihood', published in 1992 **(Cole and Green 1992).**

The partial correlation coefficients were calculated with Spearman's Rho formula by controlling child's age to investigate the relationship between HC and the demographic and physical characteristics of the child and the child's family.

Stata 13 package program was used for final statistical analysis.

Findings

The statistical analyze was conducted by using totally 5522 head circumference measurements. 2961 of this group were boys (53.6%); while the number of girls was 2561 (46.4%).

The percentage distributions according to gender and age of the children in the survey are given in **Table 1** and **Table 2**, respectively. The estimated HC growth curves for percentiles from 1% to 99% are given in **Figures 1** and **2** for children in all ages (0-19 years).

Table 1: Percentile values of boys by age

Age	P 1	P 3	P 5	P 10	P 25	P 50	P 75	P 90	P 95	P 97	P 99
0-15 days	32.4	33.0	33.3	33.8	34.5	35.3	36.1	36.8	37.2	37.4	37.9
1 months	33.6	34.2	34.5	35.0	35.7	36.5	37.3	38.0	38.3	38.6	39.0
1.5 months	34.5	35.1	35.5	36.0	36.7	37.6	38.3	39.0	39.4	39.6	40.1
2 months	35.2	35.9	36.2	36.8	37.6	38.4	39.3	40.0	40.4	40.6	41.1
2.5 months	35.9	36.6	37.0	37.5	38.4	39.3	40.1	40.8	41.2	41.5	42.0
3 months	36.5	37.2	37.6	38.2	39.1	40.0	40.9	41.6	42.0	42.3	42.8
3.5 months	37.0	37.8	38.2	38.8	39.7	40.7	41.6	42.3	42.8	43.1	43.6
4 months	37.5	38.3	38.7	39.3	40.3	41.3	42.2	43.0	43.4	43.7	44.2
4.5 months	37.9	38.8	39.2	39.8	40.8	41.8	42.8	43.5	44.0	44.3	44.8
5 months	38.4	39.2	39.7	40.3	41.3	42.3	43.2	44.0	44.5	44.7	45.3
5.5 months	38.8	39.6	40.0	40.7	41.6	42.7	43.6	44.4	44.9	45.2	45.7
6 months	39.2	40.0	40.4	41.1	42.1	43.1	44.1	44.9	45.3	45.6	46.2
7 months	40.0	40.8	41.2	41.9	42.8	43.8	44.8	45.6	46.0	46.3	46.9
8 months	40.7	41.4	41.8	42.4	43.3	44.4	45.3	46.2	46.7	47.0	47.6

9 months	41.2	41.9	42.3	42.9	43.9	44.9	45.9	46.7	47.2	47.5	48.1
10 months	41.6	42.3	42.7	43.3	44.3	45.3	46.3	47.2	47.7	48.1	48.7
11 months	42.0	42.8	43.1	43.7	44.6	45.7	46.7	47.5	48.0	48.4	49.0
12 months	42.4	43.2	43.5	44.1	45.0	46.0	47.0	47.8	48.3	48.6	49.2
13-14 months	42.8	43.5	43.9	44.5	45.4	46.4	47.3	48.2	48.7	49.0	49.6
15-16 months	43.6	44.2	44.5	45.1	45.9	46.9	47.8	48.7	49.2	49.5	50.1
17-18 months	44.2	44.8	45.1	45.6	46.4	47.3	48.3	49.1	49.6	49.9	50.5
19-20 months	44.7	45.3	45.6	46.0	46.8	47.7	48.6	49.5	50.0	50.3	51.0
21-22 months	45.2	45.7	46.0	46.5	47.2	48.1	49.0	49.8	50.3	50.7	51.3
23-24 months	45.6	46.1	46.4	46.8	47.5	48.4	49.3	50.1	50.6	51.0	51.6
2 years 3 month	46.0	46.4	46.7	47.1	47.8	48.6	49.5	50.4	50.9	51.2	51.9
2.5 years	46.4	46.9	47.2	47.6	48.3	49.1	49.9	50.8	51.3	51.6	52.3
2 years 9 month	46.9	47.3	47.6	48.0	48.6	49.4	50.3	51.1	51.6	52.0	52.6
3 years	47.2	47.7	47.9	48.3	49.0	49.7	50.6	51.4	51.9	52.2	52.9
3 years 3	47.5	47.9	48.2	48.5	49.2	50.0	50.8	51.6	52.1	52.4	53.1
3.5 years	47.7	48.2	48.4	48.8	49.4	50.2	51.0	51.8	52.3	52.6	53.2
3 years 9	48.0	48.4	48.6	49.0	49.6	50.4	51.2	52.0	52.4	52.7	53.4
4 years	48.2	48.6	48.8	49.2	49.8	50.6	51.4	52.1	52.6	52.9	53.5
4 years 3	48.4	48.8	49.0	49.4	50.0	50.8	51.5	52.3	52.7	53.0	53.6
4.5 years	48.5	49.0	49.2	49.5	50.2	50.9	51.7	52.4	52.9	53.2	53.8
4 years 9	48.7	49.1	49.3	49.7	50.3	51.0	51.8	52.5	53.0	53.3	53.8
5 years	48.8	49.2	49.4	49.8	50.4	51.1	51.9	52.6	53.1	53.4	53.9
5.5 years	48.8	49.3	49.5	49.9	50.5	51.2	52.0	52.7	53.1	53.4	53.9
6 years	49.0	49.5	49.7	50.0	50.7	51.4	52.1	52.8	53.3	53.5	54.1
6.5 years	49.1	49.6	49.8	50.2	50.8	51.5	52.3	53.0	53.4	53.6	54.2
7 years	49.3	49.7	50.0	50.3	51.0	51.7	52.4	53.1	53.5	53.7	54.2
7.5 years	49.4	49.9	50.1	50.5	51.2	51.9	52.6	53.2	53.6	53.9	54.3
8 years	49.5	50.0	50.3	50.7	51.3	52.0	52.8	53.4	53.8	54.0	54.5
8.5 years	49.6	50.2	50.4	50.8	51.5	52.2	52.9	53.6	53.9	54.2	54.6
9 years	49.7	50.3	50.6	51.0	51.7	52.4	53.1	53.7	54.1	54.3	54.8
9.5 years	49.8	50.4	50.7	51.1	51.9	52.6	53.3	53.9	54.3	54.5	54.9
10 years	49.9	50.5	50.8	51.3	52.0	52.8	53.5	54.1	54.5	54.7	55.1
10.5 years	49.9	50.6	50.9	51.4	52.2	53.0	53.7	54.3	54.6	54.8	55.2
11 years	50.1	50.8	51.1	51.6	52.4	53.2	53.9	54.5	54.8	55.0	55.4
11.5 years	50.2	50.9	51.3	51.8	52.6	53.3	54.1	54.6	55.0	55.2	55.6
12 years	50.4	51.1	51.4	52.0	52.7	53.5	54.2	54.8	55.1	55.4	55.7
12.5 years	50.6	51.3	51.6	52.2	52.9	53.7	54.4	55.0	55.3	55.5	55.9
13 years	50.8	51.5	51.9	52.4	53.1	53.9	54.6	55.2	55.5	55.7	56.1
13.5 years	51.0	51.7	52.1	52.6	53.3	54.1	54.8	55.4	55.7	55.9	56.3
14 years	51.3	52.0	52.3	52.8	53.5	54.3	55.0	55.6	55.9	56.1	56.5
14.5 years	51.6	52.2	52.5	53.0	53.7	54.5	55.2	55.7	56.1	56.3	56.6
15 years	51.8	52.5	52.8	53.2	54.0	54.7	55.3	55.9	56.2	56.4	56.8
15.5 years	52.1	52.7	53.0	53.5	54.2	54.9	55.5	56.1	56.4	56.6	57.0
16 years	52.4	53.0	53.3	53.7	54.4	55.1	55.7	56.3	56.6	56.8	57.1
16.5 years	52.7	53.3	53.6	54.0	54.6	55.3	55.9	56.4	56.7	56.9	57.3
17 years	53.0	53.5	53.8	54.2	54.8	55.5	56.1	56.6	56.9	57.1	57.4
17.5 years	53.3	53.8	54.0	54.4	55.0	55.7	56.3	56.8	57.1	57.2	57.6
18 years	53.5	54.0	54.2	54.6	55.2	55.8	56.4	56.9	57.2	57.4	57.7
18.5 years	53.7	54.2	54.4	54.8	55.3	55.9	56.5	57.0	57.2	57.4	57.7
19 years	53.8	54.3	54.5	54.9	55.4	56.0	56.5	57.0	57.2	57.4	57.7
19.5 years	54.0	54.4	54.6	54.9	55.4	56.0	56.5	56.9	57.2	57.4	57.7

Table 2: **Percentile values of girls by age**

Ages	**P 1**	**P 3**	**P 5**	**P10**	**P 25**	**P 50**	**P 75**	**P 90**	**P 95**	**P 97**	**P 99**
0-15 days	32.0	32.7	33.0	33.4	34.1	34.8	35.4	35.9	36.2	36.4	36.7
1 month	32.7	33.5	33.8	34.3	35.1	35.9	36.6	37.2	37.5	37.7	38.1

1.5 months	33.4	34.1	34.5	35.1	35.9	36.8	37.6	38.2	38.6	38.8	39.2
2 months	34.2	34.9	35.3	35.8	36.7	37.6	38.5	39.2	39.6	39.8	40.3
2.5 months	35.1	35.7	36.1	36.6	37.5	38.4	39.3	40.1	40.5	40.8	41.3
3 months	35.9	36.5	36.8	37.4	38.2	39.1	40.1	40.9	41.4	41.7	42.3
3.5 months	36.6	37.2	37.5	38.0	38.8	39.8	40.7	41.6	42.1	42.5	43.1
4 months	37.1	37.7	38.0	38.6	39.4	40.4	41.3	42.2	42.8	43.1	43.8
4.5 months	37.5	38.2	38.5	39.0	39.9	40.9	41.9	42.7	43.3	43.6	44.3
5 months	37.9	38.6	38.9	39.4	40.3	41.3	42.3	43.2	43.7	44.1	44.7
5.5 months	38.2	38.9	39.2	39.8	40.7	41.7	42.7	43.5	44.1	44.4	45.0
6 months	38.6	39.3	39.6	40.2	41.1	42.1	43.1	44.0	44.5	44.8	45.5
7 months	39.5	40.1	40.4	41.0	41.8	42.8	43.8	44.7	45.2	45.6	46.2
8 months	40.2	40.8	41.1	41.6	42.5	43.4	44.4	45.3	45.9	46.2	46.9
9 months	40.8	41.4	41.7	42.1	42.9	43.8	44.8	45.7	46.2	46.5	47.2
10 months	41.2	41.8	42.1	42.6	43.4	44.3	45.3	46.2	46.7	47.1	47.8
11 months	41.6	42.2	42.5	42.9	43.7	44.7	45.6	46.5	47.1	47.5	48.2
12 months	42.1	42.6	42.9	43.4	44.2	45.1	46.0	46.9	47.4	47.8	48.5
13-14 months	42.5	43.0	43.3	43.7	44.5	45.4	46.4	47.3	47.9	48.2	49.0
15-16	42.9	43.4	43.7	44.2	45.0	45.9	46.9	47.8	48.3	48.7	49.4
17-18 months	43.2	43.8	44.1	44.6	45.4	46.3	47.3	48.2	48.7	49.1	49.8
19-20 months	43.8	44.3	44.6	45.1	45.8	46.7	47.7	48.6	49.1	49.4	50.1
21-22 months	44.2	44.7	45.0	45.5	46.2	47.1	48.0	48.9	49.4	49.8	50.5
23-24 months	44.6	45.1	45.4	45.8	46.6	47.5	48.4	49.2	49.8	50.1	50.8
2 years 3	45.0	45.5	45.8	46.2	46.9	47.8	48.7	49.5	50.0	50.4	51.0
2.5 years	45.5	46.0	46.3	46.7	47.4	48.2	49.1	49.9	50.4	50.8	51.5
2 years 9	46.0	46.5	46.7	47.1	47.8	48.6	49.5	50.3	50.8	51.1	51.8
3 years	46.4	46.8	47.1	47.5	48.2	49.0	49.8	50.6	51.1	51.4	52.1
3 years 3	46.8	47.2	47.4	47.8	48.5	49.3	50.1	50.9	51.4	51.7	52.4
3.5 years	47.1	47.6	47.8	48.2	48.8	49.6	50.4	51.1	51.6	52.0	52.6
3 years 9	47.5	47.9	48.1	48.5	49.1	49.8	50.6	51.4	51.9	52.2	52.9
4 years	47.8	48.2	48.4	48.7	49.3	50.1	50.8	51.6	52.1	52.4	53.1
4 years 3	48.1	48.5	48.7	49.0	49.6	50.3	51.0	51.8	52.3	52.6	53.3
4.5 years	48.3	48.7	48.9	49.2	49.8	50.4	51.2	52.0	52.5	52.8	53.5
4 years 9	48.5	48.9	49.1	49.4	49.9	50.6	51.4	52.1	52.6	52.9	53.6
5 years	48.7	49.0	49.2	49.5	50.1	50.7	51.5	52.2	52.7	53.0	53.7
5.5 years	48.8	49.2	49.4	49.7	50.2	50.9	51.6	52.3	52.8	53.1	53.8
6 years	49.1	49.4	49.6	49.9	50.5	51.1	51.8	52.6	53.0	53.4	54.0
6.5 years	49.3	49.6	49.8	50.1	50.6	51.3	52.0	52.7	53.2	53.5	54.2
7 years	49.4	49.8	50.0	50.3	50.8	51.5	52.2	52.9	53.4	53.7	54.3
7.5 years	49.5	49.9	50.1	50.4	51.0	51.6	52.4	53.0	53.5	53.8	54.3
8 years	49.6	50.0	50.2	50.5	51.1	51.8	52.5	53.2	53.6	53.9	54.4
8.5 years	49.7	50.1	50.3	50.6	51.2	51.9	52.6	53.3	53.7	54.0	54.5
9 years	49.7	50.2	50.4	50.7	51.4	52.1	52.8	53.4	53.8	54.1	54.5
9.5 years	49.8	50.2	50.5	50.9	51.5	52.2	52.9	53.5	53.9	54.2	54.6
10 years	49.9	50.4	50.6	51.0	51.7	52.4	53.1	53.7	54.1	54.3	54.7
10.5 years	50.0	50.5	50.8	51.2	51.9	52.6	53.3	53.9	54.2	54.4	54.8
11 years	50.1	50.7	51.0	51.4	52.1	52.8	53.5	54.1	54.4	54.6	55.0
11.5 years	50.2	50.8	51.2	51.6	52.3	53.1	53.7	54.3	54.6	54.8	55.1
12 years	50.4	51.0	51.4	51.8	52.5	53.3	53.9	54.5	54.8	55.0	55.3
12.5 years	50.6	51.2	51.6	52.0	52.8	53.5	54.1	54.7	55.0	55.2	55.5
13 years	50.8	51.5	51.8	52.3	53.0	53.7	54.4	54.9	55.2	55.4	55.8
13.5 years	51.0	51.7	52.0	52.5	53.3	54.0	54.7	55.2	55.5	55.7	56.0
14 years	51.2	51.9	52.3	52.8	53.5	54.3	54.9	55.4	55.7	55.9	56.3
14.5 years	51.4	52.2	52.5	53.0	53.8	54.5	55.2	55.7	56.0	56.2	56.5
15 years	51.6	52.3	52.7	53.2	54.0	54.7	55.4	55.9	56.2	56.4	56.7
15.5 years	51.8	52.5	52.9	53.4	54.1	54.9	55.5	56.1	56.4	56.6	56.9
16 years	52.0	52.7	53.0	53.5	54.3	55.0	55.7	56.2	56.5	56.7	57.1
16.5 years	52.1	52.8	53.2	53.6	54.4	55.1	55.8	56.4	56.7	56.9	57.2
17 years	52.3	53.0	53.3	53.8	54.5	55.3	56.0	56.5	56.9	57.1	57.4
17.5 years	52.6	53.2	53.5	53.9	54.7	55.4	56.1	56.7	57.0	57.2	57.6
18 years	52.8	53.3	53.6	54.1	54.7	55.5	56.2	56.8	57.1	57.3	57.7

18.5 years	53.0	53.5	53.7	54.1	54.8	55.5	56.2	56.8	57.2	57.4	57.8
19 years	53.1	53.6	53.8	54.2	54.8	55.4	56.1	56.8	57.2	57.4	57.9
19.5 years	53.3	53.7	53.9	54.2	54.8	55.4	56.1	56.8	57.2	57.4	58.0

Figure 1: **The head circumference curves limited to 1-99% for boys of all ages**

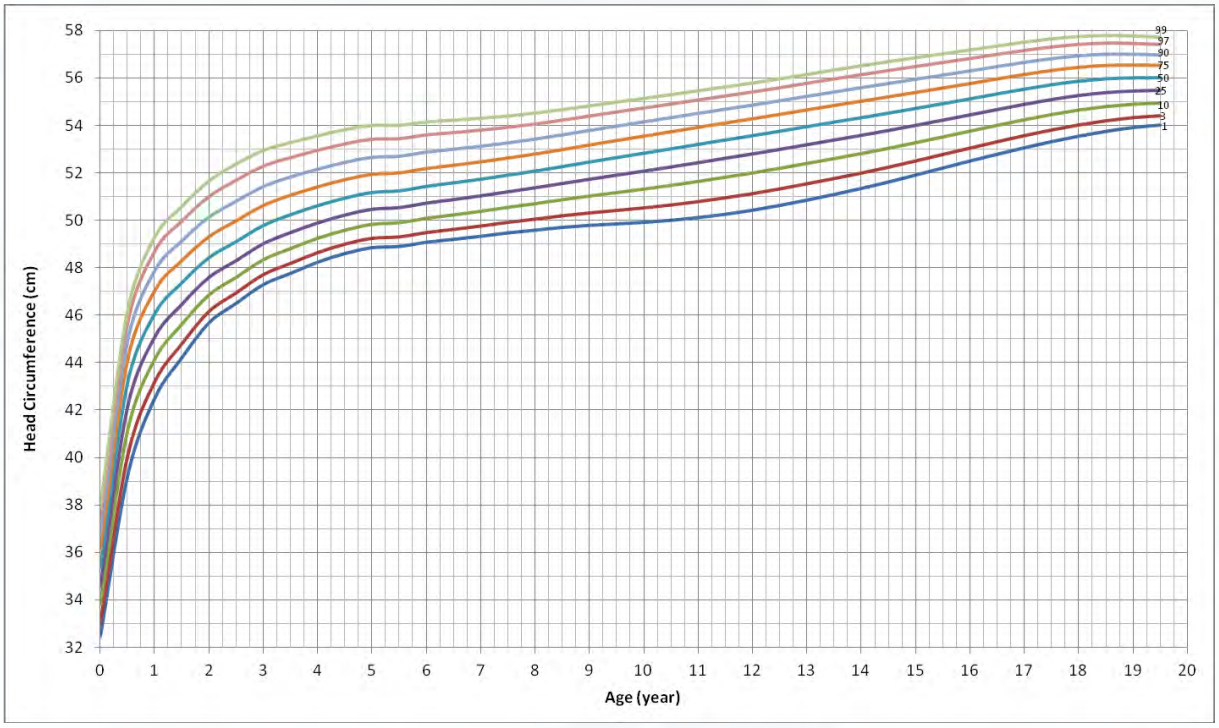
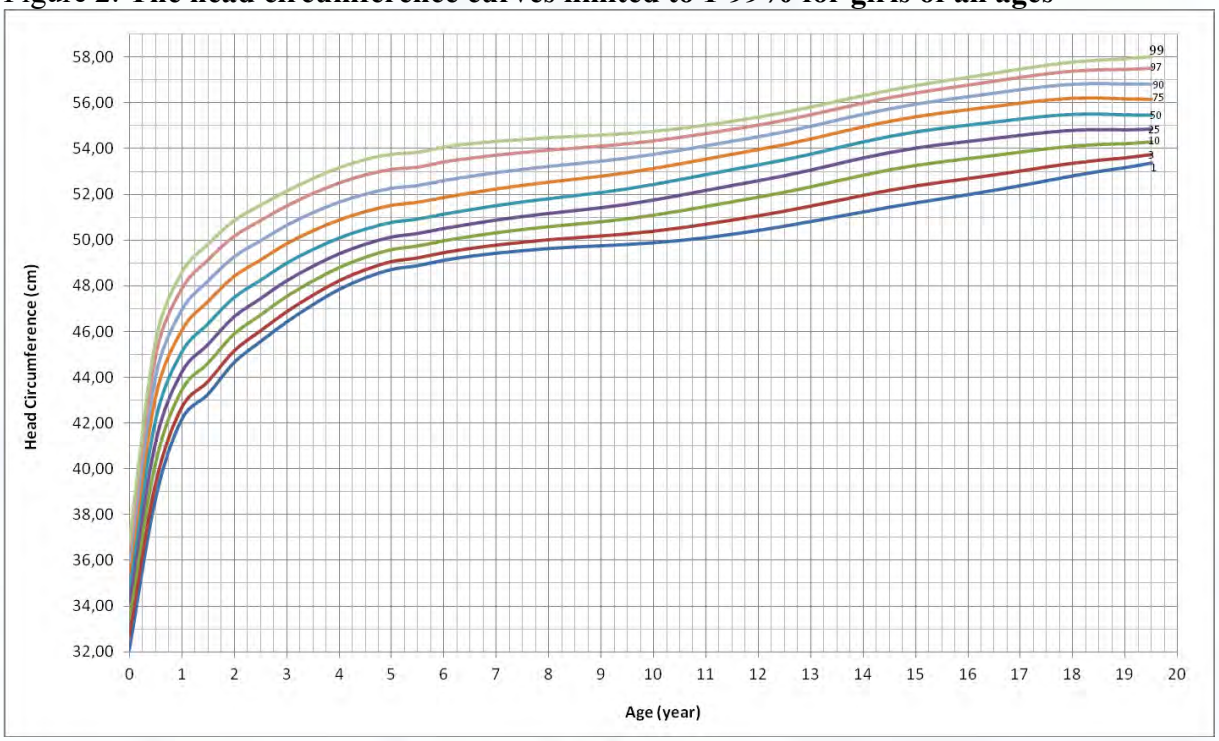


Figure 2: **The head circumference curves limited to 1-99% for girls of all ages**



Discussion

Growth curves are tools providing valuable information to pediatricians on distinguishing sick children from healthy children, identifying children with growth problems, and showing how healthy children should grow **(Galender, 2006)**.
Growth characteristics of children from different countries, even from different regions of the same country, can be different from each other. Therefore, it was reported that, physicians should use growth curves estimated using values of their own children **(Bayat et al. 2012)**.
It was suggested that growth curves should be renewed at regular intervals because children's growth characteristics also vary between generations **(Gökçay et al. 2008)**.
Most of the previous studies on head circumference in Turkey were made among fewer children and more limited age group **(Akıncı et al. 2001, Karabiber et al. 2001, Elmalı et al. 2012, Kara et al. 2016).** The Neyzi's work is the largest sample sized of these studies (**Neyzi et al. 2015).** Measured children were from good socio-economic situation, measurements were made at different times by different people.
In our study, all measurements were performed by the same person using a same set tape measure whose reliability was confirmed in a calibration laboratory. The accuracy of the measurements repeatability was validated by a preliminary study. Measured children were from all socio-economic layers of society.
Our work was done in a shorter period and more recently.
These particulars are main differences of our study from other national studies.
A comparison of 50% values of our results with the results of other national studies is given in **Tables 3-4**.

Table 3: **Results of the studies conducted national by 50% head circumference values of boys of various ages**

Age	Studies						
	Ours	Neyzi (1978) (İstanbul)	Yalaz (Ankara)	Akıncı (Ankara)	Karabiber (Malatya)	Neyzi (2008) (İstanbul)	Elmalı (Kayseri)
0 month	**40,05**	35,30					
3 months	**41,92**	40,90	40,20	41,50		41,10	39,05
6 months	**43,29**	43,90	43,00	44,30		44,00	42,23
9 months	**44,35**	46,00	44,70	46,00		45,80	44,47
12 months	**45,12**	47,30	45,90	47,50		47,10	45,93
15 months	**45,94**	48,00	46,90			47,80	46,85
18 months	**46,34**	48,70	47,00			48,40	47,48

21 months	**47,17**		47,40			48,90	47,97
24 months	**47,50**	49,70	47,80			49,30	48,40
3 years old	**49,00**	50,40	48,90			50,00	49,65
6 years old	**50,98**		50,80		51,30		51,41
9 years old	**52,59**				52,50		
12 years old	**53,77**				53,90		
15 years old	**54,87**						
18 years old	**55,80**						

Table 4: **Results of the studies conducted national by 50% head circumference values of girls of various ages**

Age	Studies						
	Ours	Neyzi (1978) (İstanbul)	Yalaz (Ankara)	Akıncı (Ankara)	Karabiber (Malatya)	Neyzi (2008) (İstanbul)	Elmalı (Kayseri)
0 month	**39,18**	34,70					
3 months	**40,99**	40,00	39,10	41,20		40,00	38,59
6 months	**42,33**	42,80	41,90	44,00		42,90	41,22
9 months	**43,36**	44,60	43,60	46,00		44,60	43,16
12 months	**44,13**	45,80	44,60	47,10		45,80	44,58
15 months	**46,94**	46,50	45,50			46,60	45,58
18 months	**47,37**	47,10	46,10			47,20	46,30
21 months	**48,1**		46,60			47,60	46,84

	4						
24 months	**48,43**	48,10	47,00			48,00	47,28
3 years old	**49,79**	49,30	48,20			48,70	47,66
6 years old	**50,32**		49,80		50,80		
9 years old	**52,09**				52,00		
12 years old	**53,39**				53,35		
15 years old	**54,49**						
18 years old	**55,57**						

When the results of studies carried out in foreign countries evaluated, regardless of method differences, the following points are notable (**Table 5** and **Table 6**):

The results of 50%, HC in boys less than six years old from World Health Organization and Saudi Arabia are almost same as our results **(WHO 2006, Mouzan 2007).**

The largest difference was found with Sweden for all ages **(Werner and Bodin 2006).**

Table 5: Results of the studies conducted worldwide by 50% head circumference values of boys of various ages

Age	Studies						
	Ours	WHO (2006)	Werner (2006)	Mouzan (2007)*	Roelants (2009)	Rollins (2010)	Schienkiewitz (2011)*
			Sweden	S.Arabia	Belgium	USA	Germany
0 months	**35.37**	34.50	35.00	34.60	34.80	35.81	
3 months	**40.04**	40.50	41.00.	40.20	40.90	41.77	41.90
6 months	**43.15**	43.30	44.00	43.40	43.90	44.04	44.20
9 months	**44.93**	45.00	46.50	45.00	45.60	45.48	45.80
12 months	**46.07**	46.10	47.50	46.20	46.80	46.50	46.20
15 months	**46.94**	46.80	48.50	47.00		47.26	47.20
18 months	**47.37**	47.40	49.20	47.60	48.20	47.86	48.20
21 months	**48.13**	47.80		48.00			49.00
24 months	**48.43**	48.30	50.20	48.20	49.10	49.37	49.60
3 years old	**49.79**	49.50	51.00	49.30	50.20	50.41	50.20
6 years old	**51.43**	50.70		50.90	51.70	51.89	52.10
9 years old	**52.47**			52.10	52.80	53.12	53.30
12 years old	**53.58**			53.20	54.00	54.29	54.60
15 years old	**54.72**			54.50	55.70	55.43	55.80
18 years old	**55.88**			55.60	56.50	56.40	56.80

* Results were obtained from the curves. WHO: World Health Organization

Table 6: Results of the studies conducted worldwide by 50% head circumference values of girls of various ages

Age	Studies

	Ours	WHO (2006)	Werner (2006)	Mouzan (2007)*	Roelants (2009)	Rollins (2010)	Schienkiewitz (2011)*
			Sweden	S.Arabia	Belgium	USA	Germany
0 months	**34.85**	33.90	35.00	34.30	34.30	34.71	
3 months	**39.18**	39.50	40.00	39.50	39.70	40.47	40.40
6 months	**42.10**	42.20	43.00	42.50	42.70	42.71	42.50
9 months	**43.89**	43.80	45.00	44.20	44.40	44.16	44.40
12 months	**45.10**	44.90	46.30	45.40	45.60	45.20	45.00
15 months	**45.94**	45.70	47.00	46.20		45.98	46.00
18 months	**46.34**	46.20	48.00	46.90	47.00	46.59	46.80
21 months	**47.17**	46.70		47.20			47.20
24 months	**47.50**	47.20	49.00	47.70	48.00	48.38	48.00
3 years old	**49.00**	48.50	50.00	48.50	49.20	49.50	49.00
6 years old	**51.15**	51.80		50.40	50.70	51.19	51.10
9 years old	**52.10**			51.80	52.20	52.31	52.10
12 years old	**53.30**			53.50	53.70	53.31	53.50
15 years old	**54.74**			54.40	54.70	54.10	54.60
18 years old	**55.52**			54.50	54.90	54.56	55.20

*: Results were obtained from the curves. WHO: World Health Organization

Conclusion

HC is a reliable marker of growth and neurological status.

We think that our HC results can be used in pediatric practice. The following characteristics of our study support this view:

The study has been conducted with a remarkable large sample size from all socio-economic layers of society.

The HC measurements were performed in children who met special health condition.

All measurements were made by the same person. And the reliability of the measurements was tested.

We think all these aspects are the main features of our work and make the work reliable.

Sincerely……. Thanks……..

References

1 *Akinci Z, Ertem I, Ulukol B, Gulnar S, Kose K. Bir yas ve altindaki bebekler icin Ankara buyume egrileri. Ankara Universitesi Tip Fakultesi Mecmuasi. 2001;54:7-16.*

2 *Barbier A, Boivin A, Yoon W, et all. New reference curves for head circumference at birth, by gestational age. Pediatrics. 2013;131:e1158-1167.*

3 *Bayat PD, Khazaei M, Ghorbani R, Ayubian M, Sohouli P, Ghanbari A. Growth pattern in 7-12 years old Arak children (central Iran) in comparison with other ethnic subgroups of Iran. Ital J Anat Embryol 2012;117:1-7.*

4 *Cole TJ, Green PJ. Smoothing reference centile curves: The LMS method and penalized likelihood. Stat Med 1992;11:1305-1319.*

5 *Elmali F, Altunay C, Mazicioglu MM, Kondolot M, Ozturk A, Kurtoglu S. Head circumference growth reference charts for Turkish children aged 0-84 months. Pediatr Neurol 2012;46:307-311.*

6 *Galender L. Children's growth: A health indicator and a diagnostic tool. Acta Paediatr 2006;95:517-518.*

7 *Gokcay G, Furman A, Neyzi O. Updated growth curves for Turkish children aged 15 days to 60 months. Child Care Health Dev 2008;34:454-463.*

8 *Harris SR. Measuring head circumference: Update on infant microcephaly. Can Fam Physician. 2015;61:680-684.*

9 *Kara B, Etiler N, Aydogan Uncuoglu A, Maras Genc H, Ulak Gumuslu E, Gokcay G, et al. Head circumference charts for Turkish children aged five to eighteen years. Noro Psikiyatr Ars. 2016;53:55-62.*

10 *Karabiber H, Durmaz Y, Yakinci C, Kutlu NO, Gumusalan Y, Yologlu S, et al. Head circumference measurement of urban children aged between 6 and 12 in Malatya, Turkey. Brain Dev 2001;23:801-804.*

11 *Mouzan MI, Herbish AS, Salloum AA, Foster P, Omar AA, Qurachi MM, et al. Comparision of the 2005 growth charts for Saudi children and adolescents to the 2000 CDC growth charts. Ann Saudi Med. 2007;28:334-340*

12 *Neyzi O, Bundak R, Gokcay G, Gunoz H, Furman A, Darendeliler F, et al. Reference values for weight, height, head circumference, and body mass index in Turkish children. J Clin Res Pediatr Endocrinol. 2015;7:280-293.*

13 *Werner B, Bodin L. Head circumference from birth to age 48 months for infants in Sweden. Acta Paediatr 2006;95:1601-1607.*

14 *WHO multicentre growth reference study group. Assessment of differences in linear growth among populations in the WHO multicentre growth reference study. Acta Paediatr Suppl 2006;450:56-65.*

FT05

The Effects of Baby Nurses on the Hospital Costs of Uninterrupted Service Presentations

Ayse Sonay Turkmen[1], Asiye Arisoy[2], Naime Saydam[2]

[1]Karamanoğlu Mehmetbey University Faculty of Health Science, Karaman

[2]Karaman State Hospital,Karaman

Abstract

Objectives: To determine the effect of uninterrupted service of infant nurses on hospital costs.

Materials and Methods:

The data were obtained by performing hospital archives. All women and children who had delivered in the last three months in the hospital were examined in the light of the archive information. A total of 890 files were found to be suitable for the research data. Data were analyzed using descriptive statistics in SPSS 21 package program.

Results:

890 deliveries were performed. It was determined that there were 154 infants who were thought to be risky infants. Three of them were referred to another hospital because their condition was serious. All of the 151 babies were referred to the Newborn Intensive Care Unit (NICU) before the baby nursing practice. However, baby nursing practice was approved to be sent to 110 NICU. Thus the rate of hospitalization of NICU decreased 27.2%.

Conclusion:

It was concluded that baby nursing greatly contributes to lowering hospital costs while comforting the mothers in terms of infant care. For this reason, it is recommended that 24 hour infant nursing practice be applied in all hospitals of our country.

Keywords*: baby care, baby nurse, newborn, mother*

Introduction

Health professionals have an important role to play in gaining and maintaining people's health (1). In particular, infants and children who are not able to act on their own health should play a role in protecting their health (2,3). Parents and then baby nurses play an important role in maintaining infant health and reducing infant mortality (4).

Baby nursing practice involves the appointment of nurses who take responsibility for infant health. The duties of the baby nurses in many hospitals in the application passed in Turkey; the delivery of the baby after birth, providing baby care, feeding the baby, establishing mother-infant communication, screening newborns, monitoring growth-development, discharge education and mother-baby visit at home (4).

Baby nursing is not only important for mother-infant health, but it can also have a significant impact on hospital costs through close monitoring and observation (5). n order to determine the effectiveness of baby nursing practice, it is necessary to examine the effectiveness-cost ratios. In the literature review, no studies examining the contribution of infant nurses to hospital costs were found.

Methods

A descriptive study was conducted retrospectively in order to determine the effects of infant nursing on hospital costs by analyzing the costs of infant health before and after continuous

baby nursing practice in a public hospital. The sample group of the study consisted of babies born in the last three months (01 January-30 March 2018).
The questionnaire form prepared by the researchers in line with the literature was used as data collection tool. Archival documents were scanned for information such as the date of birth of the baby, interventions made after birth, and the presence of the mother.
The obtained data were analyzed by using descriptive analyzes such as number, percentage and mean in SPSS 21 package program. Ethical consent of the study was obtained from the Non-Interventional Ethics Committee of the Faculty of Health Sciences of Karamanoglu Mehmetbey University.

Results

As a result of a three-month archive evaluation; total 890 births were determined. The mean age of the mothers included in the study was 31.29 ± 5.62 years (min = 18 years, max = 44 years). Most of the mothers did not have a chronic disease (85.4%; n: 760) and did not become ill very often (89.9%; n: 800). Approximately 1/3 of the mothers (33.8%; n: 301) were the first children. Most of the babies were within normal limits in terms of birth weight and height.
The postnatal practices of the babies evaluated in the scope of the study are summarized in Figure 1. According to this; 736 infants were transferred to their mothers immediately after birth and 154 babies were referred to some clinicsAs three of these babies were in critical condition, they were referred to another hospital, 14 babies were referred directly from the delivery room to the neonatal intensive care unit (NICU), 30 babies were first taken to the clinic and then referred to the NICU. It was found that 107 babies who were referred directly to the ICU before the baby nurse application were left under the supervision of the baby nurse. It was seen that 41 newborns were transferred to their mothers with the observation and care of the baby nurse and 110 newborns were referred to the NICU (Figure 1). Thus, it was determined that the number of NICU hospitalized infants was reduced from 151 to 110, thus the NICU hospitalization rate was reduced by 27.2% (41x100 / 151).
The contribution of infant nursing to hospital cost was evaluated by considering the hospitalization fees at that period. During the period examined, the average cost of one-day stay in each NICU was 425 TL. In the last three months, if the 41 babies who were given to the mother without admission to the NICU were left in the NICU, the cost of hospitalization would be 41 infants x 425 TL = 17.425 TL. Considering that the average length of stay of a baby in the NICU was 5 days, this amount would increase to 17,425 x 5 = 87,125 TL. According to this, the amount of profit that the hospital made in three months with the application of baby nursing was 87.125 TL. Considering the high incidence of NICU nosocomial infections, this rate is expected to increase further.

Discussion

Health care is one of the important sectors with high costs. In particular, items spent in intensive care and cost of expenses is quite high. Intensive care units are also the departments where the patient stays intensively and the patient has the most hospitalization day. Considering all these reasons, the most important step in reducing hospital costs is the selection of patients who really need intensive care. Whenever any patient at risk is admitted to intensive care, there is no bed for the patient in need of intensive care and treatment may be postponed (6).
By controlling the costs of the health services provided in hospital enterprises, hospital managers; The company can make more accurate decisions about reducing costs, increasing the quality of services provided, using all kinds of inputs and outputs effectively and efficiently, and determining the performance of employees (6,7).

Patients admitted to ICU are exposed to numerous applications due to their current status (8). Each invasive procedure is a risk for nosocomial infection. Pathogenic microorganisms colonize invasive vehicle surfaces by the patient or health personnel, and colonization can lead to infection. Therefore, limiting the use of invasive devices as much as possible has an important role in preventing colonization and infection in these patients. Infection control measures must be strictly observed, especially in neonatal units. Studies have shown that the total cost of infection control measures is equivalent to the cost of infection in four or five infants (8-10).

There is no literature study to determine the effect of Baby Nursing on hospital costs. However, it was observed that the number of infants admitted to the NICU was reduced by 27.2% in the three-month period following infant nursing practice, and the hospital cost was 87.125 TL. This situation can be considered as evidence of how important the practice of infant nursing is.

In addition to this benefit, it is thought that infant nurse may have important effects in preventing neonatal infections. Decreasing the number and length of NICU hospitalizations also means decreasing the frequency of nosocomial infections. In the literature, it has been reported that NICU rates vary between 5-66% of hospital infections (10).

Exposure to the infant while in the NICU will result in further hospital costs. The high prevalence of infections in the NICU leads to the introduction of empirical antibiotics. Invasive procedures in the NICU and high mortality rate necessitate this practice. Irrational use of the antibiotic can cause resistant infections and fatal candida infections, but can also lead to serious costs (9). Accordingly, the infant nurse plays an important role in reducing patient and hospital costs, while at the same time preventing the development of resistant infections in the early period.

Conclusions And Recommendations

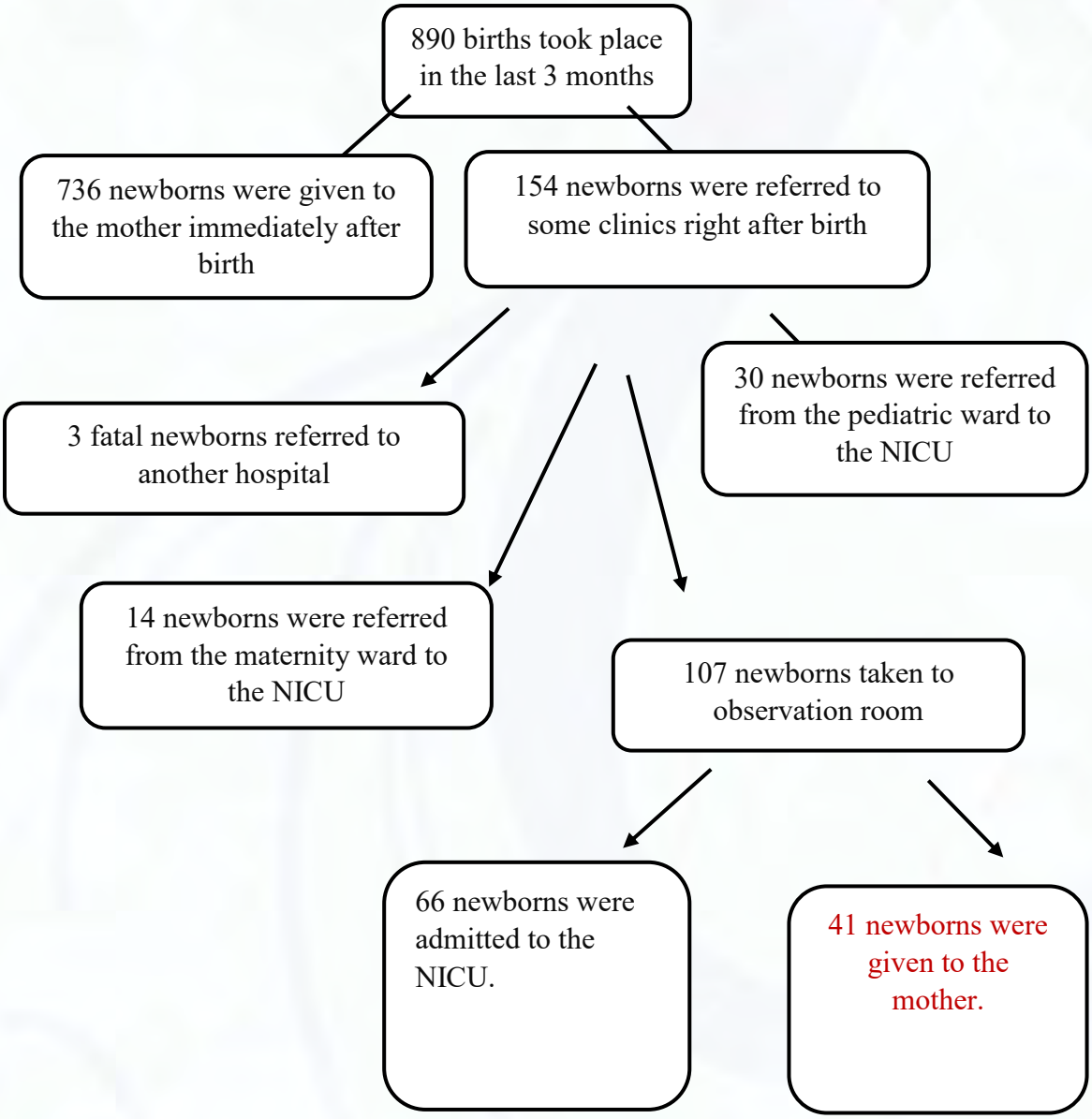
In the archive review, it was found that the baby nurse decreased the NICU hospitalization rate by 27.2% and drastically reduced the costs during the three-month period. According to these findings; It is seen that infant nurses are effective in reducing both hospitalization rates and hospital costs. In this direction, it is recommended that baby nurses, like nurses working in other internal and surgical branches, define their duties and powers and provide 24-hour uninterrupted service in hospitals.

References

1. *World Health Statistics. Geneva: World Health Organization (WHO). 2017: 1-116. Available from: http://apps.who.int/iris/bitstream/10665/255336/1/9789241565486-eng.pdf (Date of access: 12.10.2018)*
2. *Korkmaz A, Aydin Ş, Duyan Camurdan A et al. (2013). Evaluation of the causes of infant deaths in Turkey and the national registration system. Journal of Child Health and Diseases 2013; 56(3): 105-21.*
3. *Phillips R. (2013). The sacred hour: uninterrupted skin-to-skin contact immediately after birth. Newborn & Infant Nursing Reviews 2013; 13(2): 67–72. doi:10.1053/j.nainr.2013.04.001.*
4. *Implementing Regulation Amending the Nursing Regulation Official Newspaper Issue: 27910 Available from: http://www.turkhemsirelerdernegi.org.tr/tr/yasa-ve-yonetmelikler/yonetmelikler/19-nisan-2011-hemsirelik-yonetmeliginde-degisiklik-yapilmasina-dair-yonetmelik.aspx (Date of access: 12.10.2018)*
5. *Anil Keskin D, Billerlioglu H. Analysis of cesarean section activity according to activity based costing method in health enterprises. Journal of Accounting Science World 2017; 19(1): 207-45.*

6. *Kisakurek M. Departmental cost analysis in hospital enterprises: An application in Cumhuriyet University Medical Faculty Hospital. Atatürk University Journal of Economics and Administrative Sciences 2010; 24(3): 229-56.*
7. *Mut S, Agirbas I. Cost analysis in hospitals: Implementation in a second-line public hospital in Ankara. Mehmet Akif Ersoy University Journal of the Faculty of Social Sciences 2017; 9(18): 202-17.*
8. *Kaya S, Yilmaz G, Cakir E et al. Invasive vehicle-related nosocomial infections in the neurology-neurosurgical intensive care unit of Karadeniz Technical University Faculty of Medicine. Journal of Neurological Sciences 2010; 27: 302- 10*
9. *Mireya UA, Martí PO, Xavier KV et al. Nosocomial infections in paediatric and neonatal intensive care units. J infect 2007; 54: 212-20.*
10. *Hacimustafaoglu M, Celebi S, Koksal N et al. Nosocomial infections in neonatology clinic and neonatal intensive care unit. Turk Arch Ped 2011; 46: 293-8.*

Figure 1. Births in the last three months after starting the baby nurse and distribution of the newborns according to the procedures



FT06

HENOCH SCHÖNLEİN PURPURALI 103 HASTANIN RETROSPEKTİF OLARAK DEĞERLENDİRİLMESİ

Mehmet Akif AĞIR[1], Vildan GÜNGÖRER[2], Alaaddin YORULMAZ[1], Şükrü ARSLAN[2]

Selçuk Üniversitesi Tıp Fakültesi, Çocuk Sağlığı ve Hastalıkları ABD[1], KONYA

Selçuk Üniversitesi Tıp Fakültesi, Çocuk Sağlığı ve Hastalıkları ABD, Çocuk Romatoloji Bilim Dalı[2], KONYA

Amaç:
Çocukluk çağının en sık görülen vasküliti olması hasebi ile Konya yöresinde HSP vasküliti nedeniyle takip edilen hastaların klinik özelliklerini, laboratuvar değerlerini ve bunlar arasındaki istatistiksel ilişkiyi ortaya koymak amacıyla bu çalışma yapıldı.
Gereç ve Yöntem: Bu retrospektif çalışmada Ekim 2016 ile Eylül 2018 tarihleri asında Selçuk Üniversitesi Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları Anabilim Dalı çocuk romatoloji polikliniği, çocuk acil servisi, çocuk sağlığı polikliniği ve çocuk nefroloji polikliniğine başvuran çocukların otomasyon epikriz kayıtları ve poliklinik dosyalarının incelenmesi sonucunda HSP tanısı alan 103 hasta araştırıldı.
Bulgular:
Yaşın, anne-baba yaşının, cinsiyetin, tanı aldığı mevsimin, vücut ağırlığının, boyun, laboratuvar değerlerinin sistem tutulumlarının, nüks ve semptomlar üzerine etkileri araştırıldı. Hastaların laboratuvar değerlerinden lökosit sayısı (WBC), eritrosit sedimantasyon hızı (ESR), C-reaktif protein (CRP), tam idrar tahlili (TİT), idrarda protein atılımı, hematüri varlığı, gaytada gizli kan değerleri kayıt edildi. Çalışmamıza dâhil edilen hastaların erkek/kız oranı yapılan çalışmalara benzer şekilde 1,34 olarak bulundu. Hastalar yaş gruplarına göre 10 yaşında büyük ve 10 yaşından küçük olacak şekilde 2 gruba ayrıldı. Başvuru mevsimleri incelendiğinde sonbahar ve kış aylarında tanı alan hasta sayılarının ilkbahar ve yaz aylarına göre belirgin fazla olduğu görüldü. Sistem tutulumu açısından dağılım incelendiğinde hastaların tamamında cilt tutulumu, %66'sında kas iskelet sistemi tutulumu, %51'inde GİS tutulumu, %15,5'inde böbrek tutulumu ve %8,7'sinde skrotal tutulum olduğu tespit edildi.
Sonuç: Daha önce yapılan çocukluk çağı HSP çalışmaları ile benzer şekilde büyük yaş ve WBC yüksekliği ile böbrek tutulumu arasında istatistiksel olarak anlamlı bir ilişki bulundu.
Anahtar kelimeler: Artrit, eklem, purpura, vaskülit.

ABSTRACT

Objective:
The aim of this study was to determine the clinical features, laboratory values and statistical relationship between the patients who were followed up for HSP vasculitis in Konya due to being the most common vasculitis in childhood.
Materials and Methods:
In this retrospective study, 103 patients who were diagnosed as HSP as a result of the automation epicrisis records and polyclinic files of children admitted to the pediatric rheumatology polyclinic, pediatric emergency department, pediatric polyclinic and pediatric nephrology polyclinics of Department of Child Health and Diseases (PEDIATRICS) of Selcuk University Faculty of Medicine between October 2016 and September 2018 were investigated.

Results:
Effects of age, parental age, gender, season of diagnosis, body weight, height, laboratory values of system involvement on recurrence and symptoms were investigated. From laboratory values of patients Leukocyte count (WBC), erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), complete urinalysis (CUA), protein excretion in urine, presence of hematuria, and stool blood secret values were recorded. The male / female ratio of the patients included in our study was found to be 1.34, similar to the studies performed. The patients were divided into two groups as older than 10 years and younger than 10 years according to their age groups. When the seasons were examined, it was seen that the number of patients diagnosed in autumn and winter months was significantly higher than in the spring and summer months. When the distribution was examined in terms of system involvement, skin involvement in all, musculoskeletal involvement in 66%, GIS involvement in 51%, renal involvement in 15.5% and scrotal involvement in 8.7% of the patients were detected.
Conclusion:
Similar to previous childhood HSP studies, a statistically significant relationship was found between older age and WBC elevation and renal involvement.

Keywords: *Arthritis, joint, purpura, vasculitis.*

Giriş
Henoch-Schönlein purpurası (HSP), çocukluk çağının en sık vasküliti olmakla birlikte nedeni net olarak bilinmemekte, öncelikle deri, gastrointestinal sistem, eklem ve böbrekler olmak üzere farklı bir çok sistemde özellikle postkapiller venüller olmak üzere küçük damarları tutmaktadır (1). Hastalık en sık 3-15 yaş arası çocuklarda görülür ve kızlara göre erkek çocuklarda yaklaşık 2 kat daha sık bildirilmektedir (2). Toplumda görülme oranı tahmini olarak 10-20/100.000 civarındadır ve başvuru sıklığı mevsimlere göre farklılık göstermekte, özellikle bahar ve kış aylarında daha sık görülmektedir (3).
Palpabl purpura hastalığın en sık ve en belirgin bulgusudur. Karakteristik deri döküntüsü hastaların tamamında oluşur. Eklem tutulumu çoğunlukla artralji şeklinde olup artrit geliştiğinde eklemlerde ağrı ve ödem görülür (4). GİS tutulumu hafif karın ağrısından akut batın tablosuna kadar değişebilir. Nadiren santral sinir sistemi tutulumu (SSS), skrotal tutulum, akciğer veya kalp tutulumu, üveit ve korea bildirilmektedir.

Gereç ve Yöntem
Çalışmamızda, Ekim 2016-Eylül 2018 tarihleri arasında Selçuk Üniversitesi Tıp Fakültesi Hastanesi Çocuk Sağlığı ve Hastalıkları Anabilim dalı pediatrik nefroloji polikliniğine, pediatrik romatoloji polikliniğine, pediatrik acil polikliniğine başvurup HSP tanısı konulmuş 103 hasta retrospektif olarak incelendi. Yaş, cinsiyet, başvuru öncesi döküntü süresi, döküntü yeri, sistem semptomları, tanı aldıkları mevsim, vücut ağırlığı ve boy persentil değerleri, bazı laboratuvar değerleri, klinik bulgular, anne ve baba yaşı, izlem süresi belirlendi. HSP tanısı konulurken 1990 ACR ve EULAR 2006 kriterlerinden faydalanıldı. Trombositopenik olmayan palpabl purpura HSP'nin cilt tutulumu kabul edildi. Döküntünün HSP tanısı için karakteristik olmadığı olgularda cilt biyopsisi yapılarak histopatolojik bulgular ile desteklendi. Hastaların laboratuvar değerlerinden lökosit sayısı (WBC), eritrosit sedimantasyon hızı (ESR), C-reaktif protein (CRP), tam idrar tahlili (TİT), idrarda protein atılımı, hematüri varlığı, gaytada gizli kan değerleri kayıt edildi. Laboratuvar değerlerinin normal değer aralıkları; lökosit sayısının yaş aralıklarına göre normal değer aralığı, eritrosit sedimantasyon hızı 0-20mm/saat, C-reaktif protein 0-5mg/L olarak baz alındı. Eklem ağrısı belirgin artrit tablosu olsun ya da olmasın eklem tutulumu olarak kayıt edildi. Böbrek tutulum

açısından nefrolitiyazis ve idrar yolu enfeksiyonu (İYE) ekarte edilerek mikroskopta 40'lık büyütmede beş eritrosit veya fazlasının görülmesi ve/veya idrarda protein kreatinin oranının 0,2'nin üzerinde olması kriter olarak kabul edildi. Böbrek tutulumu olarak değerlendirilen hiçbir hastada böbrek biyopsisine gerek duyulmadı.
Hesaplamalarda $p<0,05$ istatistik anlamlılık düzeyi olarak alındı ve hesaplamalarda SPSS (ver:21) istatistik paket programı kullanıldı.

Bulgular
HSP'li 103 hastanın 59'u erkek (%57,3) 44'ü kızdı (%42,7) ve erkek/kız oranı 1,34 olarak bulundu. Hastaların tanı yaşı dağılımı 3-17 yaş aralığında olup ortalaması 7,81 ± 2,84 olarak tespit edildi. Hastalar yaş gruplarına göre 10 yaşında büyük ve 10 yaşından küçük olacak şekilde 2 gruba ayrıldı. Yaş dağılımına göre ($p=0,537$) ve yaş gruplarına göre ($p=0,215$) cinsiyetleri karşılaştırıldığında istatistiksel olarak anlamlı bir fark bulunmadı. Hastaların cinsiyet ve yaş grubu dağılımları Tablo 1'de verilmiştir.
Başvuru mevsimlerine bakıldığında sonbahar ve kış aylarında tanı alan hasta sayılarının ilkbahar ve yaz aylarına göre belirgin bir şekilde fazla olduğu görüldü. Hastaların demografik ve epidemiyolojik özellikleri Tablo 2'de verilmiştir.
Sistem tutulumu açısından dağılım incelendiğinde hastaların tümünde (%100) cilt tutulumu olduğu görüldü. 69 hastada (%66) eklem tutulumu, 53 hastada (%51) gastrointestinal (GİS) tutulumu, 16 hastada (%15,5) renal tutulum ve 9 hastada (%8,7) skrotal tutulum olduğu tespit edildi. Hastaların klinik özellikleri, sistem tutulumları ve lokalizasyonları Tablo 3'de verilmiştir.
53 hastada (%51,5) GİS tutulumu olduğu görüldü. Bunların 9'unda (%8,7) belirgin alt GİS kanama olduğu görüldü. Bu hastalardan birine (%1) invajinasyon tanısı konularak steroid tedavisi ile operasyona gerek duyulmadan tedavi edildi. GİS tutulumu olan hastaların yaş dağılımının ortalaması 8,6±3,05 yaş olduğu görüldü.
Hastalar böbrek tutulum açısından incelendiğinde 16 hastada (%15,5) böbrek tutulumu olduğu görüldü. Böbrek tutulumu olan hastaların yaş dağılımı ortalaması 10,25±2,79 yaş olduğu görüldü. İstatistiksel açıdan CRP ve böbrek tutulumu arasında ($p=0,638$) anlamlı bir fark bulunmazken, WBC yüksekliği ile böbrek tutulumu arasından ($p=0,03$) anlamlı bir ilişki olduğu görüldü. Aynı zamanda yaş grupları ve böbrek tutulumu ilişkisi incelendiğinde 10 yaştan küçük olan hasta grubundaki 71 hastanın 7'sinde (%9,8) böbrek tutulumu varken 10 yaştan büyük olan hasta grubundaki 30 hastanın 9'unda (%30) böbrek tutulumu olduğu görüldü. Yaş arttıkça böbrek tutulum ihtimalinin arttığını gösterir şekilde yaş grubu ve böbrek tutulumu arasında istatistiksel olarak anlamlı bir ilişki bulundu ($p=0,015$).
Hastaların 23'ünde (%24,4) lökositoz olduğu görüldü. 94 hastanın tanı anında ESR değerlerine ulaşıldı, 34 hastada (%36,1) ESR yüksekliği olduğu görüldü. 90 hastanın tanı anında CRP değerlerine ulaşıldı. CRP artış oranlarına göre hastaların dağılımı Şekil 1'de verilmiştir.
Eşlik eden ek hastalık açısından bakıldığında 4 hastada (%3,8) tanı almış Ailevi Akdeniz Ateşi (AAA), 1 hastada otizm, 1 (%0,97) hastada konjential katarakt, 1 (%0,97) hastada Fallot tetroloji, 1 (%0,97) hastada inguinal herninin mevcut HSP tablosuna eşlik ettiği görüldü.
19 hasta (%18,4) tüm semptomlar iyileştikten sonra HSP'ye bağlı olduğu düşünülen semptomların yenilemesi şeklinde nüks olduğu tespit edildi. Nüks ile cinsiyet, yaş ve laboratuvar değerleri arasında istatiksel anlamda anlamlı bir ilişki olmadığı görüldü.

Tartışma
Ece ve arkadaşları (5) 214 HSP hasta dahil ettikleri çalışmalarında hastaların yaş ortalamasının 9.0±3.2 yıl olduğunu, hastaların 121'inin erkek ve 93'ünün kız olduğunu,

erkek/kız oranın 1,3 olduğunu bildirmişlerdir. Bizim çalışmamızda da tanı yaşı dağılımının 3-17 yaş aralığında olduğu, yaş ortalamasının 7,81±2,84 olduğu ve hastaların erkek/kız oranının 1,34 olduğu ve bunun yapılan çalışmalar ve literatür bilgileri ile benzerlik gösterdiği görüldü.
Yaş grupları ile GİS tutulumu, eklem tutulumu, skrotal tutulum, nüks ve laboratuvar değerleri açsından anlamlı bir istatistiksel ilişki bulunmazken yaş grupları ile böbrek tutulum arasında istatistiksel olarak anlamlı bir ilişki saptandı ve hasta yaşı arttıkça böbrek tutulum oranı arttığı görüldü. Assadi F, HSP'nin klinik bulgularını araştırmak amacıyla yapmış olduğu bir çalışmada bizim çalışmamızdaki sonuç ile paralellik gösterir nitelikte böbrek tutulumunun büyük çocuk ve erişkinlerde daha fazla olduğunu belirtmiştir (6).
Hastalığın sonbahar, ilkbahar ve kış mevsimlerinde daha çok ortaya çıktığı yapılan çalışmalar ile gösterilmiştir (8). Bizim çalışmamızda da başvuru mevsimlerine göre hasta dağılıma bakıldığında hastaların 41'i sonbahar (%39,8), 33'ü kış (%32), 15'i ilkbahar (%14,6) ve 12'si yaz (%11,7) mevsiminde başvurduğu görüldü ve literatür bilgisi ve yapılan çalışmalar ile sonucun paralellik gösterdiği görüldü.
HSP'li 124 çocukta yapılan bir çalışmada palpabl purpura %100, eklem tutulumu %66, gastrointestinal tutulum %56, böbrek tutulumu %19 olarak bildirilmiştir (11). Bizim çalışmamızda sistem tutulumu açısından hasta dağılım incelendiğinde hastaların tümünde (%100) cilt tutulumu olduğu görüldü. 69 hastada (%66) eklem tutulumu, 53 hastada (%51) GİS tutulumu, 16 hastada (%15,5) böbrek tutulumu, 9 hastada (%8,7) skrotum tutulumu olduğu tespit edildi.
Döküntülerin HSP tanısı açısından şüpheli olduğu olgularda cilt biyopsisi yapılarak, "parçalanmıs polimorfonükleer lökositler" olarak tanımlanan lökositoklastik vaskülit olduğu görülerek tanı patolojik olarak desteklendi. Hastaların tümünde (%100) cilt tutulumu olduğu görüldü. Cilt tutulumu olmadan da HSP tanısı konulan çalışmalar (12) olsa da bizim çalışmamızda tüm hastalarda cilt tutulumu olmasının sebebi HSP tanısı konulurken cilt tutulumunun olmazsa olmaz kriter olarak kabul gördüğü 1990 ACR ve EULAR 2006 kriterlerinden faydalanılmış olmasıdır.
Döküntüler vücudun ağırlık taşıyan bölgeleri olan kalça ve alt ekstremitelerde lokalize olmakla birlikte % 30-40 oranında el, ayak, saçlı deri, kulak kepçesini ve skrotumu da tuttuğu bildirilmektedir (13). Bizim çalışmamızda da hastaların tümünde (%100) alt ekstremitelerde döküntü olduğu görüldü. Hastaların %47,6'sında sadece alt ekstremitede, %29,1'inde alt ekstremite ve gluteal bölgede, %18,4'ünde tüm vücutta yaygın ve %2,9'unda alt ve üst ekstremitede döküntü olduğu görüldü.
Yakut ve ark.(14) yaptıkları çalışmada eklem bölgesi tutulum oranlarını % 90 ayak bileği, %70 diz eklemi, %33 el bileği, %22 dirsek eklemi olarak bildirmişlerdir. Bizim çalışmamızda eklem tutulumu incelendiğinde daha önce yapılan çalışmalar ile benzer oranda olguların %66'sında eklem tutulumu olduğu görüldü.
Ece ve ark. (15) çalışmalarında hastaların % 62'sinde karın ağrısı, % 25'inde dışkıda gizli kan ya da melena şeklinde GİS tutulumu olduğunu bildirmişlerdir. Bizim çalışmamızda hastaların %51,5'inde GİS tutulumu olduğu bunların %16,9'unda gözle görülür alt GİS kanaması olduğu görüldü.
Bizim çalışmamız hastaların %15,5'inde böbrek tutulumu olduğu görüldü. Hamdan ve ark. (16) çalışmalarında HSP tanılı hastalardan nefrit gelişenlerin % 67'sinin 10 yaşından büyük olduğunu bildirmişlerdir. Bizim çalışmamızda da bu çalışmayla benzer şekilde 10 yaşında büyük yaş grubunda olan hastalarda % 30 oranında böbrek tutulumu görülürken 10 yaşında küçük olan hasta grubunda %9,9 oranında böbrek tutulumu olduğu görüldü. Yaş grupları ve böbrek tutulumu ilişkisi incelendiğinde yaş arttıkça böbrek tutulum ihtimalinin arttığını gösterir şekilde yaş grubu ve böbrek tutulumu arasında istatistiksel olarak anlamlı bir ilişki

bulundu. CRP yüksekliği ve böbrek tutulumu arasında bir ilişki bulunmazken, WBC yüksekliği ile böbrek tutulumu arasında anlamlı bir ilişki olduğu görüldü.
Sistem tutulum oranlarının daha önce yapılan çalışmalar ve literatür bilgileri ile karşılaştırıldığında böbrek tutulumu bizim çalışmamızda %15,5 ile daha az oranda görülmesi ve SSS tutulumunun hiç görülmemesi dışında benzerlik gösterdiği görüldü. Böbrek tutulum oranının %30-60 gibi bizim çalışmamızdan daha yüksek bulunduğu çalışmalarda idrar yolu enfeksiyonunun ve yapılan bir çalışmada (17,18) ülkemizde çocukluk yaş grubu içerisinde insidansının %17 gibi yüksek değerlerde olduğu bildirilen nefrolitiyazisin neden olduğu hematüri tablosunun HSP'nin nefrolojik tutulumu olarak değerlendirilmiş olabileceği düşünüldü.

Sonuç

Hastalık çocukluk çağının en sık karşılaşılan vasküliti olması ve selim seyretmesine karşın semptomların çeşitlilik göstermesi ve çocuk ve aile tarafından çok şiddetli hissedilmesinden dolayı HSP çocuk hekimleri açısından önemli bir hastalık olma özelliği taşımaktadır. Başta deri olmak üzere kas iskelet sistemi, GİS ve üriner sistem gibi birçok sistemik tutuluma sebep olmaktadır. HSP nedeni tam olarak bilinmemekle birlikte sonbahar/kış mevsimlerinde daha sık görülmektedir. Erkek çocuklarında kız çocuklarına göre daha sık görülmekte ve yaş büyüdükçe ve beyaz küre sayısı arttıkça böbrek tutulum riski artmaktadır.

Kaynaklar

1 *Tizard EJ. Henoch-Schonlein purpura. Arch Dis Child 1999;80:380-3.*

2 *Onat T. Henoch-Schönlein vasküliti. Çocuk Sağlığı ve Hastalıkları. Eksen Yayınları 1996;2:987–989.*

3 *Özçakar Ö, Fitöz S, Yalçınkaya F. Henoch Schönlein purpura, Klinik Gelişim Dergisi, 2006;19:52–55.*

4 *Mir S, Yavascan O, Mutlubas F, Yeniay B, Sonmez F. Clinical outcome in children with Henoch-Schonlein nephritis. Pediatr Nephrol 2007;22:64-70.*

5 *Chang WL, Yang YH, Lin YT, et al. Gastrointestinal manifestations in Henoch Schonlein purpura: a review of 261 patients. Acta Paediatr 2004;93:1427-1431.*

6 *Assadi F. Childhood Henoch-Schonlein nephritis: a multivariate analysis of clinical features and renal morphology at disease onset. Iran J Kidney Dis 2009;3:17-21.*

7 *García-Porrúa C, González-Louzao C, Llorca J, González-Gay MA. Predictive factors for renal sequelae in adults with Henoch-Schönlein purpura. J Rheumatol. 200;28:1019-24.*

8 *Nielsen HE. Epidemiology of Schonlein-Henoch purpura. Acta Paediatr Scand 1988;77:125-31.*

9 *Şirin A, Ertuğrul T, Öner N. Vaskülit Sendromları. İn: Neyzi O, Ertuğrul T, editors. Pediyatri, 4.baskı. İstanbul, Nobel Tıp Kitapevi, 2010:1267-1268.*

10 *Sileikiene R, Tamakauskiene E, Baksiene D. Henoch-Schönlein purpura – one of the most common types of systemic vasculitis in childhood. Medicina (Kaunas). 2003;39: 476-479.*

11 *Kim SH, Lee CG. Epidemiology and clinical manifestations of Henoch-Schönlein purpura in children. J Korean Soc Pediatr Nephrol 2003;2:166-173*

12 *Kumar L, Singh S, Goraya JS, et al. Henoch–Schonleın purpura: The Chandıgarh Experıence. Indian Pediatr 1998;35:19–24.*

13 *Michael L, Miller and Lauren M, Pachman. Vasculitis Syndromes, Henoch Schönlein purpura Behrmann RE, Kliegman RM, Jenson HB. Nelson Textbook of Pediatrics (17th edition), W.B. Saunders Company, Philadelphia 2004;826-828.*

14 *Yakut H, İşlek İ. Henoch Schönlein Purpurası" nda epidemiyolojik, klinik ve laboratuar bulguların böbrek tutulumu ve relaps üzerine etkileri [Uzmanlık Tezi]. Samsun: Ondokuz Mayıs Üniversitesi; 2004.*

15 *Ece A, Yolbaş İ, Balık H, ve ark. Çocuklarda Henoch-Schönlein purpurası: 214 hastanın değerlendirilmesi. Journal of Clinical and Experimental Investigations 2012;3:91-95.*

16 *Hamdan JM, Barqauri MA. Henoch-Schonlein purpura in children. Influence of age on the incidence of nephritis and arthritis. Saudi Med J. 2008;29:549-552.*
17 *Candemir M, Halis H, Polat A, et al. Henoch-Schonlein purpuralı hastaların analizi. 2006;7:39–43.*
18 *Akinci M, Esen T, Tellaloglu S. Urinary stone disease in Turkey: an updated epidemiological study. Eur Urol 1991;20:200-3.*

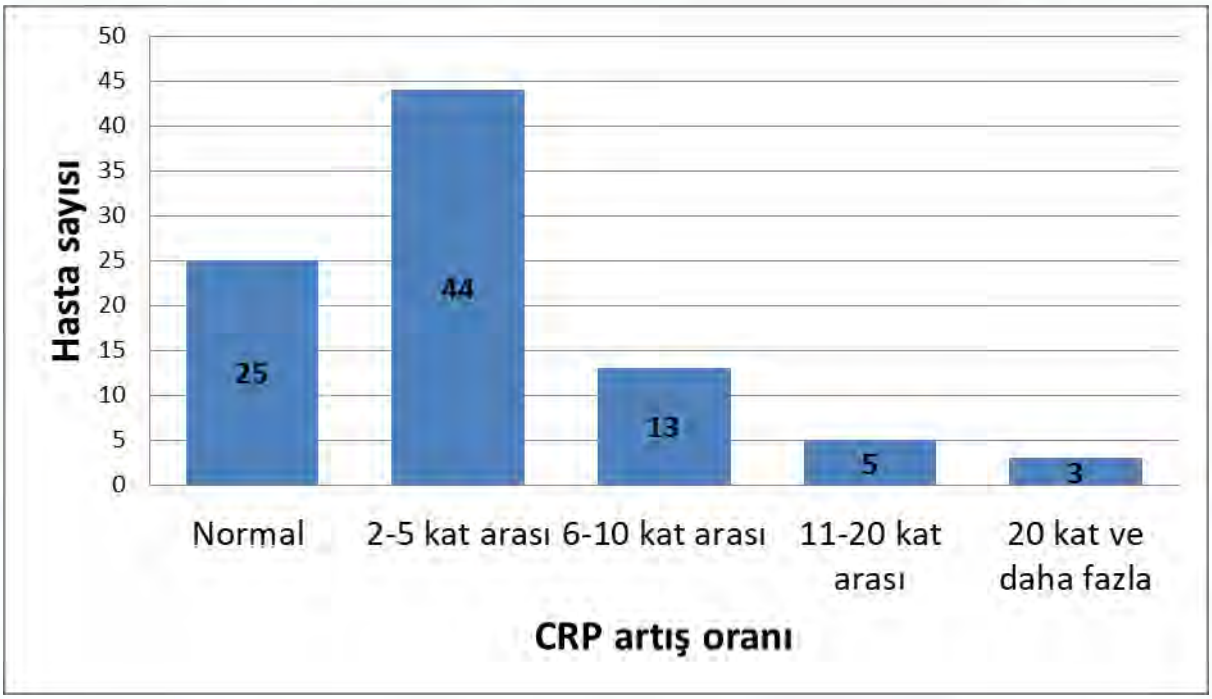
Tablo ve Şekiller

Tablo 1. Hastaların yaş gruplarına göre dağılımı			
Yaş grubu	Erkek	Kız	Toplam
<10 yaş	43 (%60,6)	28 (%39,4)	71 (%68,9)
>10 yaş	16 (%50)	16 (%50)	32 (%31,1)

Tablo 2: Olguların demografik ve epidemiyolojik özellikleri		
Özellik	n	%
Yaş (yıl)		
Ortalama	7,81 ± 2,84	
Aralık	3-17	
Cinsiyet		
Kız	44	43
Erkek	59	59
Erkek/Kız	1,34	
Başvuru mevsimi		
Sonbahar	41	39,8
Kış	33	32
İlkbahar	14	14,6
Yaz	12	11,7

Tablo 3: Hastaların klinik özellikleri	
Semptom	Hasta sayısı (%)
Deri tutulumu	103 (100)
Yalnızca alt extremite	49 (47,6)
Alt extremite ve gluteal bölge	30 (29,1)
Tüm vücut	19 (18,4)
Alt ve üst extremite	3(2,9)
Eklem tutulumu	69 (66,9)
Ayak bileği	58 (84)
Diz eklemi	17 (24,6)
El bileği	10 (14,4)
Dirsek eklemi	1 (1,4)
GİS tutulumu	53 (51)
Karın ağrısı	53 (100)
GİS kanama	9 (16,9)
İnvajinasyon	1 (1,8)
Böbrek tutulumu	16 (15,5)
Diğer	
Orşit	9 (8,7)

GİS: Gastrointestinal sistem



CRP: C- Reaktif protein

Şekil 1. CRP artış oranı dağılımı

FT07

An Investigation of Breastfeeding Practices of Mothers With Babies of 0-24 Months: The Sample of Tokat

İlknur GÜREL[1], Assoc. Prof.Dr. Didem ÖNAY DERİN[2], Büşra Zeynep ÖĞÜTLÜ[3]

[1]Teacher, Union of Chambers and Commodity Exchanges of Turkey Secondary School, Konya.

[2]Instructor, Selcuk University, Faculty of Health Sciences, Nutrition and Dietetics Department, Konya, Turkey

[3]Postgraduate Student, Selcuk University, Institute of Social Sciences, Department of Nutrition Education, Konya, Turkey

Abstract

Feeding with breast milk is extremely necessary and important for sustain and protection of health, development of the newborn's. This descriptive study was planned and conducted to determine the practices of mothers with babies between 0-24 months in the field of application of breast milk, breastfeeding, and infant nutrition. The universe of the study consisted of mothers with babies between 0-24 months registered in Bağlar No. 1, Erenler No. 2, 75th year Education and No. 4-5-6 Central Health Centers located in Tokat city center. The sample of the study included 370 mothers who agreed to participate in the study. The research data was collected by face to face interview method with the questionnaire, developed by the researchers, between February 2014 and July 2014. The questionnaire consists of a "personal information form" covering the socio-demographic characteristics of mothers and their families, and a variety of questions prepared to determine the mothers' practices on breastfeeding and infant nutrition. In the evaluation of the data, the SPSS package program was used, and the necessary statistical analyses were performed.The average age of the mothers was 29.21±5.0 years, and 35.9% were in the 24-28 age group. The majority of mothers (94.1%) had a primary education degree, while close to half of their spouses (46.2%) had a bachelor's degree or higher. 73.8% of mothers are housewives. It is seen that 78.1% of the participants had a nuclear family and 21.9% had an extended family. The Breastfeeding rate of babies in the first half hour after birth was determined as 60.8%. In the study, it was found that the big majority of mothers (92.7%) gave their babies breast milk as the first food after birth. 87.3% of mothers stated that they started to complementary foods. It was determined that more than half (56.0%) of mothers (n = 323) who started complementary foods, started complementary foods after 6th months. Breast milk; although it is the essential nutrient for the growth and development of infants, it is seen that there are deficiencies of breast milk and complementary foods in our country. Although the rates of breastfeeding in our study were better than the general data of our country, mothers need information and support on, in the field such as starting and maintaining breastfeeding successfully, the time of first breastfeeding, feed with breast milk only, and timely start-up of complementary foods. For this purpose, support provided by educated persons increases the feeding time of the mother's baby with "breast milk only" and may be one of the most important practices in the proper feeding of babies.

Keywords: *Breastfeeding, breast milk, complementary food, infant nutrition, newborn.*

Introductıon

A common problem of developing countries, inadequate and unbalanced nutrition, on the one hand, affects the physical, social and mental development of individuals, on the other hand, the economic and cultural development of society in a negative way. These negative effects are most commonly seen in infants and children. The characteristic of the first two years of life is rapid growth and development; during this period there are many changes that affect the intake of nutrients and the baby's adequate intake of nutrients affects its interaction with its environment (Onay Derin and Erdoğan, 2018). Adequate nutrition during infancy and early childhood is essential to ensure the growth, health, and development of children to their full potential (Motee, Ramasawmy, Pugo-Gunsam, and Jeewon., 2013). Mother milk, which alone, perfectly meets the physiological and psychosocial needs of the baby during the first six months after birth, plays an important role in establishing mother and baby bonding. (Karaçam and Kitiş, 2015). It has been recognized worldwide that breastfeeding is beneficial for both the mother and child, as breast milk is considered the best source of nutrition for an infant (Ku and Chow, 2010). The World Health Organization (WHO) recommends that infants be exclusively breastfed for the first six months, followed by breastfeeding along with complementary foods for up to two years of age or beyond (Hanif, 2011).

Recent studies have shown that breast-feeding on its own in the first six months after birth is much more useful than previously thought. The nutritional value and the antiinfective peculiarity of breast-feeding along with its effect on delaying pregnancy not only increase the survival chance of the infants but also protects mothers from breast and uterus cancer types, providing contraception (Baumslag, 1991). In addition to the nutritional benefits of breastfeeding there are other non-nutritional benefits to both the baby and mother. These include protection from gastrointestinal infections and enhanced immunity through transfer of antibodies in the breast milk (Kramer, Chalmers, Hodnett et al., 2001), increased bonding between mother and child, reduced incidence of chronic diseases such as diabetes mellitus, obesity, heart diseases and cancers, and enhanced cognitive and intelligence quotient in comparison with formula-fed infants (Black, Allen, Bhutta et al., 2008). Predictors of breastfeeding and weaning practices vary between and within countries. Urban or rural difference, age, breast problems, societal barriers, insufficient support from family, knowledge about good breastfeeding practices, mode of delivery, health system practices, and community beliefs have all been found to influence breastfeeding in different areas of developing countries (Motee, Ramasawmy, Pugo-Gunsam, and Jeewon., 2013). This study was planned and conducted to determine the practices of mothers with babies between 0-24 months in the field of application of breast milk, breastfeeding, and infant nutrition.

Method

The universe of this descriptive study consisted of mothers with babies between 0-24 months registered in Bağlar No. 1, Erenler No. 2, 75th year Education, and No: 4-5-6 Central Health Centers located in Tokat city center. Indiscriminate sampling method was used to determine the women included in the research and the sample consisted of 370 women who volunteered for the study. The research data was collected by face to face interview method with the questionnaire developed by the researchers between February 2014 and July 2014. Before starting the study, a extensive literature review was performed, the literature on the subject (thesis, articles, papers, books, scientific research and so on) was examined and afterward a questionnaire was prepared by making use of various researches (Dalgıç, Hızel, Köse., 1998; Şanlıer and Aytekin, 2004; Eker and Yurdakul, 2006; Kaya, Pirinççi., 2009; Onay, Akman, Akdeniz, Kacaroglu., 2009; Uslu, Can, Özdemir, Bülbül., 2010, Battaloğlu, 2013) on this subject. The questionnaire consists of a “personal information form” covering the socio-

demographic characteristics of mothers and their families, and a variety of questions prepared to determine the mothers' practices on breastfeeding and infant nutrition. In the implementation of the questionnaire, official approvals were obtained from the health centers and the appropriate time was determined to apply the questionnaire by interviewing the nurses working in the relevant institutions. After the necessary explanations and warnings about the questionnaire were made by the researcher, an appropriate environment was attempted to be created for providing reliable information and the data was collected through face-to-face interviews with the women. In the evaluation of the data, the SPSS package program was used and mean ($\overline{X}$), standard deviation (S), frequency distributions were calculated.

Results

The average age of the mothers was 29.21±5.0 years, and 35.9% were in the 24-28 age group. The majority of mothers (94.1%) had a primary education degree, while close to half of their spouses (46.2%) had a bachelor's degree or higher. 73.8% of mothers are housewives. It is seen that 78.1% of the participants had a nuclear family and 21.9% had an extended family. The Breastfeeding rate of babies in the first half hour after birth was determined as 60.8%.

In some other studies, Cetinkaya, Senol, Celer, Bebek, and Ozturk. (1999) that ratio as 59.0 % and Onay (2005) found that 68.11% of the participants breastfed their babies just after the birth. In a smilar study, while the mothers were supposed to breastfeed their babies as soon as they gave birth, the ratio of the mothers who did that was found to be 50.1%. The ratio of the mothers who breastfed in the first 1 or 2 h was 35.9% while the ratio of the mothers who did that later than 2 h was 14.0% (Onay, Akman, Akdeniz, Kacaroglu., 2009).

Breast milk, contains vitamins, minerals, proteins, carbohydrates and lipids, and especially with the superiority of bioavailability, is a great food that can meet all the needs of babies alone for the first six months (Çınar, Köse, Doğu., 2012). In this study, 92.7% of the mothers breastfed their babies, while 2.2% of them gave water with sugar, 5.1% gave baby food as the first food. Similarly, in a study done in Kemalpasa, Izmir, Gunay, Mermer G, Mermer N. (2003) found that 81.6% of the participants with 6-12 month-old babies had firstly breastfed their babies and Onay (2005) also pointed out that 94.1% of the participants had given their babies breastmilk as the first food. In a similar study, Onay et al. (2009) found 79.7% of the mothers breastfed their babies, while 8.1% of them gave water with sugar, 6.7% gave baby food, 4.3% gave water and the other 1.2% fave cow milk as the first food. Onay Derin and Erdoğan (2018), in their study, showed that more than half (66.3%) of mothers gave breast milk to their babies as the first food after birth. Another study, it was found that the majority of working and non-working mothers the first food given to their baby after birth was breast milk, but 5.7% of non-working mothers gave water or sugary water to their baby. (Aytekin, Sarıkaya, Küçükoğlu., 2015). 87.3% of mothers stated that they started to complementary foods. The results of the study support this finding. The transition to other complementary foods such as baby food, sugared water, yogurt, cheese, milk, water, and herbal teas is increasing when infant feeding is not performed exclusively with breast milk during the first six months. This case is one of the main reasons for premature termination of breastfeeding. Although breastfeeding rates are high in our country, the problem of early initiation of complementary nutrition is quite common. It has been shown that early initiation of complementary foods has a negative effect on the frequency and duration of breast milk delivery (Onay Derin and Erdoğan, 2018). In this study, ıt was determined that more than half (56.0%) of mothers (n = 323) who started complementary foods, started complementary foods after 6th months. In another study by Onay (2005), a finding related with the babies who started to get additional food at the end of the sixth month was 95.4%. In a similar study found that more than a half of the participants (69.1%) had breastfed their infants between 4-

6 months, 27.0% of them did that less than 4 months and 4.1% of them for 7-12 months. The same study, the average of breast-feeding time without any additional food was found to be 4.5±0.8 months (Onay, Akman, Akdeniz, Kacaroglu., 2009).
Yıldız, Baran, Akdur, Ocaktan, Kanyılmaz. (2008), in their study, the mothers' complementary nutrition at the appropriate time of the baby's month (6. in the month) examined whether it had started, it was determined that 26.4% of mothers started to eat additional food before their babies were 6 months old (average 3.1±1.9). A similar study found that 29.8% of babies were given ready-made food as temporary complementary nutrients in the first three days. (Çatak, Sütlü, Kılınç, Bağ., 2015).

Conclusıon

Breast milk; although it is the essential nutrient for the growth and development of infants, it is seen that there are deficiencies of breast milk and complementary foods in our country. Although the rates of breastfeeding in our study were better than the general data of our country, mothers need information and support on, in the field such as starting and maintaining breastfeeding successfully, the time of first breastfeeding, feed with breast milk only, and timely start-up of complementary foods. For this purpose, support provided by educated persons increases the feeding time of the mother's baby with “breast milk only” and may be one of the most important practices in the proper feeding of babies.

References

1 *Aytekin A, Sarıkaya P, Küçükoğlu S. Investigation of the attitudes of working and nonworking mothers regarding infant feeding. Med Bull Sisli Eftal Hosp 2015;49(1):68-75.*

2 *Baumslag, N. Anne Sütü ile Beslenme Eğilimleri ve Etkileyen Etmenler. Çocuk Sağlığı ve Hastalıkları Dergisi 34 (1991): 321-344.*

3 *Battaloğlu İB. Breastfeeding related practices of 15-49 years old mothers and influencing factors. Türk Aile Hek Derg 2013; 17(2):51-5*

4 *Black RE, Allen LH, Bhutta ZA, Caulfield LE, de Onis M, Ezzati M, et al. Maternal and child undernutrition: global and regional exposures and health consequences. Lancet. 2008;371:243–60.*

5 *Cetinkaya, F, Senol V, Celer R, Bebek A, and Ozturk Y. Kayseri'de Kentsel Alanda 12-36 Aylık Cocuklarda Anne Sutu Alma Durumu. Cocuk Saglıgı ve Hastaliklari Dergisi, 1999; 42: 375-388.*

6 *Çatak B, Sütlü S, Kılınç AS, Bağ D. Breastfeeding and nutrition patterns of babies in Burdur. Pam Tıp Derg 2012;5(3):115-22.*

7 *Çınar N, Köse D, Doğu Ö. Breast feeding in multiple babies. Sakarya Medical Journal 2012;2(3):115-21.*

8 *Dalgıç N, Hızel S, Köse MR. Knowledge and behaviour about breast feeding in ten central provinces of Ankara. A.Ü. Tıp Fakültesi Mecmuası 1998;51(3):137-43.*

9 *Eker A, Yurdakul M. The knowledge and practices mothers to related of baby feeding and breastfeeding. STED 2006;15(9):158-63*

10 *Gunay, I., Mermer G, Mermer N, T.ve Gunay and Oguz T. Kemalpasa Ilce Merkezinde Emzirme Durumu. II. Ulusal Ana Cocuk Saglığı Kongresi. Program ve Ozet Kitabı, Istanbul, 2003.*

11 *Hanif HM, Trends in breastfeeding and complementary feeding practices in Pakistan, 1990–2007, International Breastfeeding Journal, vol. 6, article 15, 2011.*

12 *Karaçam Z, Kitiş Y. What do midwives and nurses in Turkey know about nutrition in the first six months of life. Midwifery 2005;21(1): 61-70*

13 *Kaya D, Pirinçci E. [Knowledge and practice of the mothers having 0-24 month old babies about the breast milk and breastfeeding]. TAF Prev Med Bull 2009;8(6):479-84.*

14 *Kramer MS, Chalmers B, Hodnett E, Sevkovskaya Z, Dzikovich I, Shapiro S, et al. Promotion of breastfeeding intervention trial: a randomized trial in the Republic of Belarus. JAMA. 2001;285:413–20.*

15 *Ku C and Chow SKY. Factors influencing the practice of exclusive breastfeeding among Hong Kong Chinese women: a questionnaire survey," Journal of Clinical Nursing, vol. 19, no. 17-18, pp. 2434–2445, 2010.*

16 *Motee A, Ramasawmy D, Pugo-Gunsam P, and Jeewon R. An Assessment of the Breastfeeding Practices and Infant Feeding Pattern among Mothers in Mauritius. Journal of Nutrition and Metabolism 2013; 1-9.*

17 *Onay D, Akman M, Akdeniz S, Kacaroglu AV. Breast-feeding behaviours of the mothers. Pakistan Journal of Nutrition 2009;8(8):1126- 31.*

18 *Onay, D. Bebegi Olan Annelerin Anne Sutu Konusundaki Bilgileri ve Davranısları. Ankara Universitesi Ev Ekonomisi (Beslenme Bilimleri) Anabilim Dalı Doktora Semineri (Yayınlanmamıs). Ankara, 2005.*

19 *Onay Derin, D., Erdoğan, A. Annelerin Bebeklerini Emzirme Uygulamalarının İncelenmesi: Muş İli Örneği. Turkiye Klinikleri Journal of Health Sciences, 2018, 3.1: 1-13.*

20 *Şanlıer N, Aytekin F. Analysis of knowledge level and behavior of mothers with children of 0-3 years of age concerning nutrition and diarrhea. Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi 2004;24(3):81-100.*

21 *Uslu, S., Can, E., Özdemir, H., & Bülbül, A. Bir Yenidoğan Ünitesinde Annelerin Anne Sütü ile Beslenme Bilgi Düzeyleri, 2010; 10(2): 82-85.*

22 *Yıldız A, Baran E, Akdur R, Ocaktan E, Kanyılmaz O. Breastfeeding status and effecting factors of mothers have 0-11 month's babies at a health centre area. Ankara Üniversitesi Tıp Fakültesi Mecmuası 2008;61(2):61-7.*

FT08

An Adolescent Boy With *Brucella* Epididymoorchitis

Melike Emiroglu[1], Merve Tıraş[1], Metin Gündüz[2], Hatice Türk Dagı[2]

Selçuk University, Department of Pediatrics

Selçuk University, Department of Pediatric Infectious Diseases

Selçuk University Department of Pediatric Surgery

Selçuk Üniversitesi Department of Medical Microbiology

Introductıon

People are a coincidental host in *Brucella* infection. The disease is transmitted by direct contact with the infected animal or by consumption of infected animal products. Fever, sweating, fatigue, lethargy, loss of appetite and joint pain are among the most common symptoms in childhood brucellosis (1). Genitourinary system involvement is usually unilateral and appears as epididymo-orchitis. Epididymo-orchitis may develop as a complication during systemic infection or the patient may present only with this finding (2).
This case was presented to emphasize that brucellosis should be considered in patients presenting with childhood epididymo-orchitis, especially in endemic areas.

Case Report

A 17-year-old male patient admitted with fever, dizziness and night sweats for two weeks, redness and pain in the right testicle since last two days and, headache and vomiting since last day. Physical examination was normal except for 38.5 ˚C fever and right scrotal redness, swelling and tenderness. When questioned, the patient had a history of eating home-made un-pasteurized cheese. Laboratory tests were as; white blood cell 14,000/mm3, neutrophiles 9,280/mm3, C-reactive protein 110 mg/L, procalcitonin 3.57 g/L, Brucella Rose-Bengal test positive, Brucella agglutination test positive at 1/160 titer. Increased vascularity in the right testis and epididymitis were detected on scrotal ultrasound. The patient was consulted with pediatric surgery and elevation and cold hydrotherapy were recommended. Lumbar puncture was performed due to suspected Brucella meningitis, routine CSF tests and, Brucella agglutination test from CSF were negative. Brucella CSF PCR was sent to external center, but has not resulted yet. Doxycycline, rifampicin and ceftriaxone started for Brucella epidimididimoorchitis and suspected Brucella meningitis. Brucella spp. was grown on blood culture. Fever was subsiding on 3th day of treatment, headache on 5th day, and epididimoorchitis on 9th day. The patient discharged with doxycycline and rifampicin and, therapy completed to 8 weeks without complication.

Dıscussıon

Brucellosis is a widespread and potentially lifethreatening multisystem zoonotic disease caused by intracelluler Gram-negative bacteria of the genus Brucella, and can affect people at any age, including children. Turkey is an endemic country for brucellosis, and Brucella seroprevalence varies from 1.3% to 26.7% in many studies from various regions (3). Signs and symptoms are quite variable and can be confused with many other diseases due to a lack of pathognomonic clinical signs (4). Most pediatric reviews have reported a wide range frequencies of clinical manifestations in children with brucellosis. Fever and constitutional symptoms, including of chills, sweating, fatigue, malaise, anorexia, weight loss, abdominal pain, headaches, myalgias, and arthralgias, are amongst the most common symptoms in children (5). Genitourinary system involvement may develop in 2-20% of patients with brucellosis (6). Epididymo-orchitis is the most common genitourinary complication of

brucellosis (7,8). It's reported that 2.86% of cases with epididymoorchitis caused by Brucella infection (9). Epididymo-orchitis may be seen as a symptom of relapses during the course of systemic disease or in poorly treated cases, or as a separate clinical picture without signs of systemic disease (10). The most common symptoms are usually unilateral scrotal pain, swelling and fever. Sweating, weight loss, headache, dysuria, arthralgia, hepatosplenomegaly may accompany . Microscopic examination of urine is normal in cases with testicular involvement, and no growth is detected in culture (11). In a patient who presented with acute scrotum, firstly considering the age and history; trauma, hematocele, testicular tumor, epididymitis and testicular torsion should be considered. Physical examination, ultrasonography and / or nuclear testicular screening may be required for differential diagnosis. In cases where it is not possible to rule out malignant disease in the testis, inguinal exploration is mandatory (12). Although the prognosis of brucellosis epididymorchitis is generally good, late diagnosis and incorrect or inappropriate treatment may cause serious complications leading to testicular abscess and orchiectomy (13). In many cases, orchiectomy can be performed because the differential diagnosis cannot be made clearly and this may lead to organ loss (14). Brucellosis was first described by Hardy in 1928 as a cause of granulomatous orchitis (15). In Brucella orchitis, lesions in orchiectomy material can be confused microscopically with Hodgkin's disease or non-Hodgkin's lymphoma, infectious granulomas, Sertoli cell tumor (16). Laboratory diagnosis of brucellosis relies on 3 approaches: 1) culture of Brucella bacteria from blood, bone marrow, tissue samples, or cerebrospinal fluid and other body fluids; 2) a compatible clinical picture, such as arthralgia, fever, sweating, chills, headache, and malaise, which is supported by the detection of specific antibodies at significant titers (≥1/160); 3) nucleic acid amplification detection methods. An adequate response to anti-brucellosis therapy was also accepted for diagnosis in those who were seronegative and did not have any culture positive for Brucella (17-19). The current gold standard for brucellosis diagnosis depends on isolation of Brucella spp. from samples (20). For the treatment of brucellosis in children, combination treatment regimens that include trimethoprim- sulphamethoxazole, doxycycline, and rifampicin are recommended. Doxycycline is recommended only for children over 8 years old, as children younger than 8 years may be more sensitive to the side effects of doxycycline, especially tooth discoloration. There are 2 effective treatment regimens for different age groups. For children over 8 years old, oral doxycycline (4 mg/kg/day) and rifampicin (20 mg/kg/ day) are typically prescribed, and for children under 8 years old, oral trimethoprim (6-8 mg/kg/day), sulphamethoxazole (30-40 mg/kg/day), and rifampicin (20 mg/kg/day) are typically prescribed. Both are prescribed for 6-8 weeks. Complications and relapse can be successfully treated with triple-drug regimens (21-22). In the treatment of Brucella epididymis-orchitis, planning of appropriate antibiotic combinations for a long time is very important (23,24). World Health Organization (WHO) recommends doxycycline forty-five days and streptomycin 15-day treatment protocol. Alternatively, a 45-day treatment protocol with rifampicin and doxycycline is recommended (24).

Results

In the differential diagnosis of epididymoorchitis, brucellosis should be considered in those living in areas where brucellosis is endemic and in patients with risk factors. In addition, genitourinary system examination of each patient with brucellosis should be performed carefully because late or incorrect diagnosis and treatment may result in testicular abscess, atrophy , infertility. Orchiectomy cases due to misdiagnosis have been reported in cases that cannot be diagnosed and / or delayed in treatment. It should not be forgotten that; The idea that comes to mind about Brucella epididymiorchitis rescues the testis.

Keywords; *epididymoorchitis, brucella, childhood*

References

1. *Schutze GE, Jacobs RF. Brucella. Behrman RE, Kliegman RM, Jenson HB (eds). Nelson Textbook of Pediatrics (17th ed). Philadelphia: WB Saunders Company, 2004; 939-41.*
2. *Çelebi S, Hacımustafaoğlu M. Brusellozis. Güncel Pediatri 2004; 2:39-43.*
3. *Yumuk Z, O'Callaghan D (2012) Brucellosis in Turkey — an overview. Int J Infect Dis 16 Suppl 4: 228-235. 4. Schutze GE, Jacobs RF (2007) Brucella. In Kliegman RM, Behrman RE, Jenson HB, Stanton BF, editors. Nelson Textbook of Pediatrics 18th edition. Philadelphia: W.B. Saunders Company. 1214-1216*
4. *Christenson JC. Brucellosis. In: Jenson HB, Baltimore RS (eds). Pediatric Infectious Diseases. (2nd ed), Philadelphia: WB Saunders Company, 2002: 379-82*
5. *Okur M, Erbey F, Bektas MS, Kaya A, Dogan M, Acar MN, et al. Retrospective clinical and laboratory evaluation of children with brucellosis. Pediatr Int 2012; 54: 215-218*
6. *Al-Tawfiq JA. Brucella epididymo-orchitis: a consideration in endemic area. Int Braz J Urol 2006; 32:313-5.*
7. *Memish ZA, Venkatesh S. Brucellar epididymo-orchitis in Saudi Arabia: a retrospective study of 26 cases and review of the literature. BJU International 2001; 88:72-6.*
8. *Papatsoris AG, Mpadra FA, Karamouzis MV, Frangidesc CY. Endemic brucellar epididymo-orchitis: a l0-year experience. Int J Infect Dis 2002; 6:309-13*
9. *Stamatiou K, Polyzois K, Dahanis S, Lambou T, Skolarikos A. Brucella melitensis: a rarely suspected cause of infections of genitalia and the lower urinary tract. Braz J Infect Dis 2009; 13: 86-9.*
10. *Cesur S, Çapar Y, Demir P, Kurt H, Sözen HT, Tekeli E. Brucella orchitis: Examination of four cases. Klimik J 2002; 15:22-4.*
11. *Kocak I, Dündar M, Culhaci N, Unsal A. Relapse of brucellosis simulating testis tumor. Int J Urol 2004;11: 683-5*
12. *Reisman EM, Colquitt LA, Childers J, Preminger GM. Brucella orchitis: a rare cause of testicular enlargement. J Urol. 1990;143(4): 821-2.*
13. *Yurdakul T, Sert U, Acar A, Karalezli G, Akcetin Z. Epididymoorchitis as a complication of brucellosis. Urol Int 1995;55:141-142.*
14. *Alapont Alacreu JM, Gomez Lopez L, Delgado F, et al. Orquiepididimitis por Brucela. Actas Urol Esp 2004;28(10):774-6.*
15. *Reisman E.M, Colquitt L.A, Childers J, Preminger G.M. Brusella orchitis: a rare cause of testicular enlargement. J Urol, 1990; 143: 821-2.*
16. *Özsoy MF, Kocak N, Cavuşlu Ş. Brucella orchitis: Examination of five cases. Klimik J . 1998;11(3): 85-8.*
17. *Buzgan T, Karahocagil MK, Irmak H, Baran AI, Karsen H, Evirgen O, et al. Clinical manifestations and complications in 1028 cases of brucellosis: a retrospective evaluation and review of the literature. Int J Infect Dis 2010; 14: e469-478*
18. *Bosilkovski M, Katerina S, Zaklina S, Ivan V. The role of Brucella capttest for follow-up patients with brucellosis. Comp Immunol Microbiol Infect Dis 2010; 33: 435-442.*
19. *Mile B, Valerija K, Krsto G, Ivan V, Ilir D, Nikola L. Doxycycline rifampin versus doxycycline -rifampin-gentamicin in treatment of human brucellosis. Trop Doct 2012; 42: 13-17.*
20. *Dahouk S, Nöckler K. Implications of laboratory diagnosis on brucellosis therapy. Expert Rev Anti Infect Ther 2011; 9: 833-845.*
21. *Ulug M, Yaman Y, Yapici F, Can-Ulug N. Clinical and laboratory features complications and treatment outcome of brucellosis in childhood and review of the literature. Turk J Pediatr 2011; 53: 413-424*
22. *Khalili M, Sharifi-Mood B, Metanat M, Salehi M. Epidemiology, clinical presentation, and treatment outcome of brucellosis among children. Int J Infect 2014; 1: e21570.*
23. *Young EJ. Brucella species. In: Mandell GL, Bennett JE, Dolin R, editors. Principles and Practice of Infectious Disaeses, 6th ed. Philadelphia, Churchill Livingstone: 2005. p. 2669-2672*
24. *Corbel MJ. Brucellosis in humans and animals. World Health Organization 2006.*

FT10

Çocuk Acil Kliniğinde Supraventriküler Taşikardili Hastalara Yaklaşım

Fatih Akın, Abdullah Yazar, Esra Türe

Department of Pediatrics, Necmettin Erbakan University, Konya, Turkey

Amaç:
Supraventriküler taşikardi (SVT) çocukluk yaş grubunda en sık görülen aritmidir. Biz bu çalışmada çocuk acil kliniğinde SVT tanısı alan hastalarla ilgili deneyimimizi paylaşmayı amaçladık.
Gereç ve Yöntem:
Çocuk Acil kliniğimizde Eylül 2016-Mayıs 2019 tarihleri arasında SVT tanısı alan hastaların dosyaları retrospektif olarak incelendi.
Bulgular:
14 hastanın SVT tanısı aldığı tespit edildi. Hastaların 6'sı (%42,9) kız, 8'i (%57,1) erkek idi. Tüm hastaların yaş ortalaması 7,97±3,01 idi. Hastaların tamamına vagal uyarı uygulanmıştı. 13 (%92,9) hastaya adenozin, 5(%35,7) hastaya amiodaron tedavileri uygulanmıştı. Bir hastaya kardiyoversiyon yapılmıştı. Hastaların 8'i (%57,1) adenozin, 4'ü (%28,6) amiodaron, 1'i (%7,1) kardiyoversiyon ve 1'i (%7,1) vagal uyarı tedavisinden fayda gördü. 1 (%7,1) hasta yoğun bakıma yatırılmıştı ve bu hasta kardiyoversiyon yapılan hastaydı. Cinsiyet ile geliş semptomları, tedavi yöntemi ya da tedavi başarısı arasında istatistiksel olarak anlamlılık tespit edilmedi. Çarpıntısı olan 12 hastanın 8'inin (%66,7) istatistiksel anlamlı olarak en sık 8-10 yaş arasında olduğu görüldü.
Sonuç:
SVT, çocuklarda semptomatik taşiaritminin en sık görülen biçimidir. Bu nedenle çocuk acil kliniklerinde bu hastaların tanılarının hızlı bir şekilde konup, gerekli müdahale ve tedavilerinin ivedilikle yapılması gerekmektedir.

Anahtar Kelimeler: *acil, çocuk, supraventriküler taşikardi*

Approach To Patıents Wıth Supraventrıcular Tachıcardıa In Pedıatrıc Emergency Clınıc

Background:
Supraventricular tachycardia (SVT) is the most common arrhythmia in childhood. In this study, we aimed to share our experience with patients diagnosed with SVT in the pediatric emergency clinic.
Methods:
The files of patients diagnosed with SVT between September 2016 and May 2019 in our Pediatric Emergency Department were retrospectively reviewed.
Results:
14 patients were diagnosed as SVT. Six patients (42.9%) were female and 8 patients (57.1%) were male. The mean age of all patients was 7.97 ± 3.01 years. While vagal stimulation was applied to all patients, adenosine to 13 (92.9%) and amiodarone to 5 (35.7%) patients. One patient went on cardioversion. While 8 of the patients (57.1%) responded to adenosine, 4 (28.6%) to amiodarone, 1 (7.1%) to cardioversion and 1 (7.1%) to vagal stimulation. One patient (7.1%) was hospitalized in intensive care unit and underwent cardioversion. There was

no statistically significant difference between gender and presentation symptoms, treatment method or treatment success. Of the 12 patients with palpitations, 8 (66.7%) were found to be most frequent between the ages of 8-10 which was statistically significant.

Conclusion:

SVT is the most common form of symptomatic tachyarrhythmia in children. Therefore, the diagnosis of these patients in pediatric emergency clinics should be made quickly and necessary interventions and treatments should be done immediately.

Keywords: *child, emergency, supraventricular tachycardia*

Introductıon

Although pediatric dysrhythmias are not common among the admissions to pediatric emergencies, they are very important in terms of morbidity and mortality. With the successful surgical treatment of congenital heart diseases, dysrhythmia is more frequently diagnosed in pediatric patients. As a result, admittance due to rhythm disorders to the pediatric cardiology polyclinics and pediatric emergency departments has been increased (1).

Supraventricular tachycardia (SVT) is the most common symptomatic pediatric tachyarrhythmia since neonatal period. It is usually caused by atrioventricular re-entry and an abnormal mechanism originating from the proximal part of the his bundle (2,3).

Pediatric dysrhythmias should be recognized rapidly due to the important hemodynamic effects they may cause (1). We aimed to share our experience on patients diagnosed with SVT in our pediatric emergency clinic which is the most frequently encountered arrhythmia disorder in childhood.

Patients and Methods

The records and hospitalization files of patients under the age of 18 who were diagnosed with SVT between September 2016 and May 2019 in the Pediatric Emergency Medicine Clinic were analyzed retrospectively. Age, gender, vital signs, complaints of the patients, follow-up and treatment methods in emergency department were recorded in the standard data entry form. Patients whose data were found to be deficient were excluded from the study.

Package for the Social Sciences for Windows ver. 20.0 package program was used for statistical analysis. Descriptive statistics were used for the analysis of distribution and frequency of data, and for the comparison of frequency in 2 independent groups, a chi-square test was used. A multicell chi-square test was applied for 3 or more groups. In all statistical analyses, the level of significance was accepted as $p<0.05$.

Results

14 patients were diagnosed as SVT. Six patients (42.9%) were female and 8 patients (57.1%) were male. The mean age of the patients was 7.97 ± 3.01 years, 6.80 ± 3.50 for girls and 8.85 ± 2.45 for boys. According to age groups, the most common age was 8 (57.1%). When the complaints were examined, it was seen that 12 (85.7%) patients had chest pain and palpitation, 8 (57.1%) patients had dizziness and 6 (42.9%) patients presented with fatigue. The mean heart rate at presentation was 203.07 ± 3.01 / min (Female: 200 ± 5.89; Male: 205.37 ± 6.23).

None of the patients had hemodynamic disorder on admission. While vagal stimulation was applied to all patients, adenosine to 13 (92.9%) patients and amiodarone to 5 (35.7%) patients. One patient underwent cardioversion. Eight of the patients (57.1%) responded to adenosine treatment, 4 (28.6%) to amiodarone, 1 (7.1%) to cardioversion and 1 (7.1%) to vagal stimulation. One (7.1%) hemodynamically impaired patient was hospitalized in intensive care unit and underwent cardioversion. One patient (7.1%) had a history of drinking too much energy drink. There was no statistically significant difference among gender and presentation

symptoms, treatment method or treatment success. Of the 12 patients with palpitations, 8 (66.7%) were found to be mostly between the ages of 8-10 which was statistically significant.

Discussion

SVT is the most common form of symptomatic tachyarrhythmia in children. As well as being asymptomatic, it may present with complaints such as weakness, dizziness, fainting, and fatigue, and sometimes cardiac arrest may be the first presentation finding (4). In our study, there were no cases presenting with cardiac arrest. The most common presenting complaint was chest pain and palpitation.

The treatment of SVT is decided by considering the hemodynamic status of the patients. Patients who are hemodynamically stable (conscious, pulse (+), capillary filling time normal, blood pressure within normal limits) are firstly treated with vagal maneuvers. In our study, none of our patients had hemodynamic instability at the time of admission and all of our patients underwent vagal maneuver.

Patients who do not respond to vagal maneuvers are given adenosine treatment at a dose of 0.1mg / kg / dose, preferably via a vessel close to the heart in the upper extremity. Since adenosine is rapidly destroyed in the body, 2-4 ml of physiological saline is pushed to the patient through the same vein and the drug reaches the heart as soon as possible (5). In our study, adenosine treatment was given to 13 (92.9%) patients.

Patients who do not respond to adenosine treatment undergo synchronized cardioversion with the dose of 0.5-1 joule/kg. However, direct cardioversion should be applied to patients with impaired hemodynamic status without delay (6,7). In our study, one patient did not respond to vagal stimulation and repeated doses of adenosine, was hospitalized in intensive care unit and underwent cardioversion.

In conclusion, SVT is the most common form of pediatric dysrhythmias. Adenosine is the first drug of choice. Chronic and permanent tachycardia may result in cardiomyopathy. Therefore, the diagnosis of these patients in pediatric emergency clinics should be made quickly and necessary interventions and treatments should be done immediately.

References

1. *Bilici M, Demir F. Pediatrik Disritmiler. Dicle Tıp Dergisi. 2015; 42 (1): 128-135.*
2. *Moak JP. Supraventricular tachycardia in the neonate and infant. Prog Pediatr Cardiol 2000; 11: 25-38.*
3. *Deal B. Supraventricular tachycardia mechanisms and natural history. In. Deal B, Wolff G, Gelbrand H, editors. Current concepts in diagnosis of arrhythmias in infants and children, Futura Armonk, NY,1998: 117-143.*
4. *Doniger DJ, Sharieff GQ. Pediatric dysrhythmias. Pediatr Clin North Am 2006;53:85-105.*
5. *Diaz-Parra S, Sanchez Yanez P, et al. Use of adenosine in the supraventricular tachycardia in a pediatric emergency department. Pediatr Emerg Care 2014;30:388-393.*
6. *Spearman A, Williams P. Supraventricular tachycardia in infancy and childhood. Pediatr Ann 2014;43:456-460.*
7. *Tripathi A, Black GB, Park YMM, et al. Factors associated with the occurrence and treatment of supraventricular tachycardia in a pediatric congenital heart disease cohort. Pediatr Cardiol 2014;35:368-373.*

FT11

Clinical And İmmunological Features of Three Lrba Deficiency Patients

Aylin Yucel,

Necmettin Erbakan University, Meram Medical Faculty, Department of Pediatric Gastroenterology, Hepatology and Nutrition

LPS-responsive beige-like anchor (LRBA) deficiency is a primary immunodeficiency characterized by; recurrent sinopulmonary infections with hypogammaglobulinemia, lymphoproliferation, immunodysregulation, which presents by enteropathy, cytopenias, and autoimmune endocrinopathy.

The LRBA protein is a cytosolic protein that is expressed in several cell types including hematopoietic, neural, gastrointestinal and endocrine cells. LRBA regulates cytotoxic T lymphocyte antigen-4 (CTLA-4) turnover in endosomes. CTLA-4 is a critical and potent inhibitor of T-cell proliferation that serves as a "checkpoint" of immune responses. CTLA-4 is a crucial T-cell inhibitory receptor. CD28 is principal T-cell costimulatory molecule and critical for inducing T-cell proliferation CD28 and CTLA-4 compete for the same ligands, on the surface of antigen-presenting cells (CD80 and CD86). Moreover, CTLA-4 binds CD80 and CD86 with significantly higher affinity and avidity than CD28. CTLA4 inhibits T cell proliferation by binding to these ligands. Most CTLA-4 is stored in recycling endosomes, which cycle to the cell surface following T-cell activation. LRBA regulates intracellular CTLA-4 traffic. It prevents lysosomal degradation of CTLA4. Therefore, the inflammatory response cannot be limited in LRBA deficiency.

The clinical features are heterogeneous. Age of presentation ranging from two months to 12 years. The majority (71 %) presented at or before 5 years of age. The disease phenotype can be divided into an enteropathy phenotype, an autoimmunity phenotype and an immunodeficiency phenotype. The enteropathy phenotype includes autoimmune enteropathy, IBD/IBD-like disease and non-infectious diarrhea; the immunodeficiency phenotype includes combined immunodeficiency (CID), CVID and a CVID-like disease and the autoimmunity phenotype includes mainly AIHA and/or ITP were the most common, followed by autoimmune thyroid disease, type 1 diabetes mellitus, JIA and celiac like disease.

Case 1.

NG, 14 years 6 months old, female patient

She was diagnosed with Type 1 DM at 9 months of age (Anti-GAD Antibody positive). Her complaints of diarrhea began at the age of 5 (6-7 times / day, watery). She had been brought to an outer center for chronic diarrhea. In the histopathological examination obtained by upper GIS endoscopy, villus atrophy, crypt hiperplasia, and intraepithelial lymphocytosis were detected. Anti-tissue transglutaminase IgA and Anti-endomisium IgA were negative. Other tests for the etiology of chronic diarrhea were normal. She started a gluten-free diet at the age of 5. Since there was no response to the gluten-free diet. HLA DQ2, and DQ8 tests were negative, the gluten-free diet was discontinued when she was 7years old. During this two-year period of gluten-free diet, steroid treatment had also been tried for refractory celiac, for 6 months. A partial response to steroid treatment was achieved and diarrhea increased after discontinuation. At the age of 8, she had swelling, redness and limitation of movement in one knee and then in both knees, which repeated intermittently. She was thought to have JIA and a NSAID was used.

Family history:
There was no consanguineous marriage between her parents, but they were from the same village. There was no family history of a similar disease.
Physical examination: Her weight was at 50-75 percentile and height was at 10-15 percentile. There was no growth and development retardation. System examination was natural.
Laboratory: Complete blood count parameters were normal. Immunoglobulin levels were normal for age and specific antibody responses were poor. Flow cytometric analysis of peripheral blood lymphocytes was normal. ANA and Anti-ds-DNA were positive for the etiology of arthritis. Antibody screening was performed for other autoimmune diseases; thyroid auto antibodies were negative and direct coombs were negative.
The pathological findings (early onset Type 1 DM, autoimmune enteropathy, rheumatologic findings) were thought to be accompanied by immune dysregulation. The LRBA expression of the patient was lower than the simultaneous control, and there was no increase with activation. In the genetic analysis, homozygous frame shift mutation was detected in the 23rd exon of the LRBA gene.
Allogenic Stem Cell Transplantation preparations were performed and abatacept, steroid and IVIG treatment were used. Allogenic stem cell transplantation was performed at the age of 12 years. Diarrhea improved after transplantation.
Case 2.
BG, 5 years 2 months old male patient (sibling case)
Case 2 is brother of case 1. He was asymptomatic, and physical examination, growth and development were normal. The same mutation was homozygous, at the age of 3. The patient had been followed up.
Laboratory:
Complete blood count parameters were normal. Immunoglobulin A and M levels were low for age, while the other immunoglobulin levels were normal. Specific antibody responses were normal. Flow cytometric analysis of peripheral blood lymphocytes was normal. The LRBA expression of the patient was lower than the simultaneous control, and there was no increase with activation. Antibody screening for other autoimmune diseases was performed; Anti-glutamic acid decarboxylase antibody and thyroid auto antibodies were negative and direct coombs assay was negative.
During the follow-up, he frequently had respiratory infection which clinically required antibiotics treatment, 4 times in a 3 months period. Therefore, intravenous immunoglobulin treatment was started. IVIG treatment was administered for 1 year. The frequent infections were controlled under IVIG treatment. IVIG treatment was been discontinued 6 months ago but was started again because of recurrent infections.
Case 3
BU, 5 years old, female patient
At 8 months of age, she was admitted to the clinic with protein losing enteropathy. She had chronic watery diarrhea at that time. In the examinations for protein-losing enteropathietyology, anti-endomisium IgA was positive, tissue transglutaminase IgA was 166 U / mL (tissue transglutaminase antibody was positive but not above 200 U/mL.) Upper GIS endoscopy was normal but histopathological examination revealed villus atrophy, crypt hyperplasis and intraepithelial lymphocytosis, which suggest autoimmune enteropathy. Other intestinal and extra intestinal causes of protein losing enteropathy were ruled out. Gluten-free diet was started. However, there was no clinical response to the gluten-free diet.

At 9 months of age, bloody mucus defecation began. Colonoscopy examination revealed aphthous ulcers in the cecum and recto sigmoid region. Histopathological examination revealed diffuse eosinophilic infiltration.

Family history:

Consanguineous marriage was prsent but there was no family history of a similar disease.

Physical examination:

Her weight and height were below 3 percentile. There was growth and development retardation. Systemic examination was normal.

Laboratory:

Complete blood count parameters were normal. Immunoglobulin G and M levels were found to be low for age, whereas, other immunoglobulin levels were normal. Of specific antibody responses, isohemagglutinin titration was low. Flow cytometric analysis of peripheral blood lymphocytes was normal. Antibody screening was performed for other autoimmune diseases; thyroid autoantibodies were negative and direct coombs assay was negative.

The patient, with autoimmune enteropathy not responding to gluten free diet and early onset inflammatory bowel disease, was evaluated for immune dysregulation. Immunological assays was performed. The LRBA expression of the patient was lower than the simultaneous control, and there was no increase with activation. Genetic analysis revealed homozygous mutation in exon 12 of LRBA gene.

CTLA4-IgG1 (Abatacept) treatment was initiated while preparations for allogenic Stem Cell Transplantation were started. The patient has been waiting for a stem cell transplantation.

Conclusion

Immune dysregulation should be kept in mind especially in patients with IBD and autoimmunity and immunodeficient patients with different autoimmune diseases in the family.

FT12

Kistik Fibrozisli Çocuğun Bakımda Hemşiresinin Rolü

H Dönmez, F Taş Arslan

Kistik fibrozis (KF), otozomal resesif geçişli, ekzokrin salgı bezlerinde fonksiyon bozukluğu ile karakterize, birçok sistemi tutan kronik bir hastalıktır. KF'de beklenen yaşam süresinin uzatılması ve hastalığın iyi prognoz göstermesinde multidisipliner bakım yaklaşımlarının tercih edilmesi önemli bir faktördür. KF'te hemşirelik bakımının amacı; çocuğun solunum fonksiyonlarının artırılması ve korunması, optimal düzeyde beslenmenin sağlanması, çocuğun yaşına uygun büyüme gelişmesinin sağlanması ve ebeveynlerin psikososyal açıdan desteklenmesidir. KF'nin yaşamı tehdit eden bir hastalık olması, sık hastaneye yatışlar, morbite riskinin yüksekliği, yaşanılan ekonomik ve sosyal sorunlar açısından çocuk hemşireleri ailenin yaşadığı sorunların farkında olmalı ve danışmanlık hizmeti vererek aileleri desteklemelidirler. Hemşirelik girişimleri ile desteklenen KFli çocukların mortalite ve morbidite oranları üzerine olumlu etkilerinin olduğunu göstermektedir. KF'li çocuk ve ebeveynlerine yönelik uygulanan planlı hastalık yönetimi eğitim girişimi ve aile güçlendirme programları, ebeveynlerin hastalık yönetimi becerisini artırmaktadır. Ebeveynlerin hastalık yönetimine ilişkin bilgi düzeylerinin artırılması, sorularının yanıtlanması ve ebeveynlerin kararlara katılımının sağlanması KF'li çocukların yaşam kalitelerini ve sürelerini artırıcı etkisi vardır. Hasta ve ebeveynin var olan potansiyellerinin geliştirilmesi ve yasal haklarının korunması çocuk hemşirelerinin savunucu rolllerinden bir tanesidir. Hemşirelerin KF'de bakıma ilişkin deneyimlerini ebeveynler ile paylaşmaları bakım kalitesinin geliştirilmesinde ve ebeveynin yaşadığı psikososyal sorunların azaltılmasında etkili bir girişimdir. KF'li adölesanlar ve ebeveynlerin bakım ihtiyaçlarının belirlenmesi ve hastalığın günlük yaşama adaptasyonunun sağlanmasında hemşirelik eğitimi önemli bir role sahiptir.

Anahtar Kelimeler: *Hemşire, Kistik Fibrozis, Çocuk, Bakım*

The Role of Nurses in the Care of a Child with Cystic Fibrosis

H Dönmez, F Taş Arslan

Cystic fibrosis (CF) is an autosomal recessive chronic disease characterized by exocrine gland dysfunction. It affects many systems in the body. Multidisciplinary care approaches are an important factor in prolonging life expectancy and correct prognosis in CF. The aim of nursing care in CF is to increase and maintain the child's respiratory functions, to ensure optimal nutrition, to promote the growth of the child appropriate for his age, and to psychologically support the parents. Since CF is a life-threatening disease and it entails frequent hospitalization, high morbidity risk, and economic and social problems, pediatric nurses should be aware of the problems experienced by families and support them by providing counseling. Studies have shown that the mortality and morbidity rates of children with CF are positively affected by nursing interventions. Planned disease management training initiatives and family empowerment programs for children with CF and their parents increase the disease management skills of parents. Increasing the knowledge level of parents about disease management, answering their questions and ensuring the participation of parents in the decision making process increase the life quality and life expectancy of children

with CF. Developing the existing potential of the patient and parents and protecting their legal rights are advocacy roles of pediatric nurses. As nurses share their care experiences with parents, the quality of care improves and the psychosocial problems experienced by parents decrease. Nursing education plays an important role in determining the care needs of adolescents with CF and their parents and ensuring the adaptation of the patients to daily life.

Keywords: *Nurse, Cystic fibrosis, Child, Care*

The Role of Nurses in the Care of a Child with Cystic Fibrosis

Cystic fibrosis (CF) is a complex, progressive, systemic and autosomal recessive disease characterized by exocrine secretory gland dysfunction. It involves many systems and is life-threatening (Hay et al., 2013, Yara et al., 2013). The frequency of the disease is 1/2000-3500 and it varies from country to country. Although the incidence of the disease was determined to be 1/3000 in limited number of studies conducted in Turkey, it is thought to be higher given that kin marriage is frequent in Turkey (SB, 2017).

Morbidity and mortality in CF are caused by bronchial obstruction and stasis in the lungs, chronic infection, inflammation, fibrosis, bronchiectasis and cystic dilatation. With a multidisciplinary approach to neonatal screening, care, and intensive symptomatic treatment, prognosis has improved dramatically over the past decade and thus, life expectancy has increased (Fajac & Wainwright, 2017).

Pediatric nurses who are the members of multidisciplinary care approach in CF actively advocate for improving the potential of the patient and his/her family and protecting their legal rights. Improving the life quality of the child with CF is the basic building block of nursing care at every stage from daily life to school experience and to the death of the patient. Nursing education topics in CF are nebulization practices and clearing the airways, hygiene, antibiotics treatment, long-term oxygen treatment, noninvasive ventilation, nutrition, psychosocial support for parents and adolescents, genetic counseling, and end-of-life care (Reisinho & Gomes, 2016,; Koeller & Meyer, 2016).

Antibiotics, mucolytics and bronchodilator drugs administered to the child with CF constitute the medical part of the treatment given for the preservation of pulmonary functions. Lifelong medical treatment is a source of anxiety for children and parents. In order to prevent the development of complications, pediatric nurses are responsible for improving the quality of life of the child during home care and educating parents about disease management (Çavuoğlu, 2013; Yara et al., 2013).

As far as hygiene is concerned, nebuliser applications, cleaning and disinfection, CF pathogens and the colonization of other respiratory equipment used at home, which all constitute a large part of the treatment, are the recommended training topics for families. Decreased frequency of disinfection is associated with the recovery of microorganisms on nebulizers. To encourage the cleaning and disinfection of nebulizers used at home after each use as recommended by CF care guidelines, trainings should be repeated at specific time periods (Castallani et al., 2018; Murray et al., 2019).

Pediatric nurses should be aware of the problems experienced by families as CF is a life-threatening disease, entails frequent hospitalizations, carries high morbidity risk, and leads to economic and social problems. Pediatric nurses should give counseling to the parents and support them in order to help them adapt to the disease (Torüner & Büyükgönenç, 2013; Nierengarten, 2017). It is reported that the counseling given to parents by nurses about the

problems they experience during the care process is an effective method in improving the quality of care (Moola et al., 2016).

In a systematic review of eight articles examining nursing interventions in the care of children with CF, Reisinho and Gomes (2016) revealed that nursing interventions play an important role in identifying the care needs of the children with CF and their parents and in developing a strong adaptation to the disease. Reisinho and Gomes define the nursing interventions that are effective in normalizing daily life in CF as identifying educational needs for different age periods and educating parents, ensuring adaptation during the pre and post-hospitalization process, determining the educational needs of children and parents before and after lung transplantation, and providing emotional and psychological support. Evidence-based care guidelines, developed by pediatric nurses, have been reported to be effective in improving care at home, nutrition, nebulization therapy, oxygen therapy, daily life, school process and quality of life (Reisinho & Gomes, 2016). A qualitative study conducted with children with CF and their parents using a family-centered care model revealed that the communication developed with the support, respect and cooperation of the parents with the health personnel and especially the nurse group strengthens the parents (Smyth et al., 2017).

Hypertonic solutions, bronchodilators and antibiotics that need to be applied with nebulizers in CF include a treatment protocol that continues in daily life. This situation restricts participation in school activities and reduces compliance to treatment especially in school-age children and adolescents. The information and guidance provided by nurses as a member of the CF team play a significant role in improving the adaptation to the disease and reducing the treatment-related difficulties experienced by the children with CF and their parents (Tointon, K & Hunt, J., 2016; Gathercole, K., 2019).

In chronic illnesses or disabilities, the young or young adults experience numerous difficulties in the transition process from pediatric health care to adult health care. Pediatric nurses should educate young people with CF and their parents about self-management of the disease and should support and raise awareness in line with the needs that the family cannot identify during the transition process (Disabato et al., 2019). In order to participate effectively in shared decisions, CF youth need to develop their trust in health care personnel and interact with them. They also need to learn how to manage their condition and treatment on their own as they move into adulthood. Children and young people involved in the joint decision-making process in health services are expected to be more knowledgeable, feel more prepared, and be less worried about the unknown (Malone et al., 2019). The importance of information and preparation for caregivers as well as young people is also emphasized to promote successful transition to adult health care. It is reported that providing parents with clear information and guidance will lead to improvements in transition experiences (Coyne et al., 2018).

Nutritional status has been reported to have a strong positive correlation with lung functions and survival in CF. When growth or nutritional status is impaired, individuals with CF receiving oral nutritional supplements, followed by polymeric enteral tube feeding and complementary enteral tube feeding are recommended to receive continuous night infusion (Schwarzenberg et al., 2016). It is reported that tube feeding leads to weight gain and improves nutritional status and lung functions. Nutrition style, product to be given and the time of administration should be determined according to the preferences of the patient (Hizal, 2019). For the CF team, the main goal of nutrition is to achieve normal growth in children and to maintain adequate nutrition (Castallani et al., 2018). It is the responsibility of pediatric nurses to educate the adolescents with CF and their parents about nutrition in CF (Schwarzenberg et al., 2016).

The health care team should take into account the wishes of the dying patient and their families. Patients may choose to receive hospital care from the staff they know well in a familiar setting. Support at home (e.g. cleaning airways, timely symptom control) is an important consideration to best manage all the symptoms if they want to be at home (Castallani et al., 2018). In the process of preparing the family and the patient for the expected death, their need for communication, comfort and painless end should be met (Price & Knotts, 2017). From this perspective, it is seen that adolescents with CF and their parents do not have enough information about palliative care. Pediatric nurses need to integrate the educational interventions associated with palliative care into the routine training steps of the CF and fill the gap in performing end-of-life care (Dellon et al., 2018).

As a result, CF requires lifetime nursing care. CF is a chronic disease which has significant effects on children and adolescents and their families. In the management of CF, pediatric nurses should adopt family-centered care, and educate and improve the family to cope with the problems they may encounter during the process.

References

1- *Hay W, Levin W.MJ, Sondheımer MJ, Deterding R.R, 2013. "Current Diagnosis and teratment" serisi, 20. Baskı. Çeviri Editörü; Sarıalioğlu ve ark Güneş Tıp Kitapevi, 500-503, 2013*

2- *Yara YF, Altun E, Alparslan Ö, 2013. Respiratory system diseases and nursing care in children, Edit. Conk Z., Başbakkal Z., Yılmaz Bal H., Bolışık B., Pediatric Nursing, First Edition, Ankara, Academician Bookstore, Ankara.*

3- *Ministry of Health - Infant and child monitoring protocols 2017. Date of access 10 March 2018. https://dosyaism.saglik.gov.tr/Eklenti/9010, baby-child-monitoring-protocols pdf*

4- *Fajac I., Wainwright C.E.. New treatments targeting the basic defects in cystic fibrosis. Presse Med. 2017; 46: e165–e175*

5- *Reisinho, M. D. C. M. S., Oliveira, R., & Gomes, B. P. (2016). Nursing interventions in monitoring the adolescent with Cystic Fibrosis: a literature review. Revista latino-americana de enfermagem, 24.*

6- *Koeller, M., & Meyer, C. (2016). Maintaining nursing care quality—clinical care guidelines for cystic fibrosis: outpatient and ınpatient. Case Reports in Clinical Medicine, 5(10), 358.*

7- *Çavuşoğolu H, 2013. Child Health Nursing, 11th Edition, Ankara, Sistem Ofset, 405-409*

8- *Castellani, C., Duff, A. J., Bell, S. C., Heijerman, H. G., Munck, A., Ratjen, F., ... & Hodková, P. (2018). ECFS best practice guidelines: the 2018 revision. Journal of cystic fibrosis, 17(2), 153-178.*

9- *Murray TS., O'Rourke TK. Feinn R, Drapeau G, Collins MS. Nebulizer cleaning and disinfection practices in families with cystic fibrosis: The relationship between attitudes, practice and microbe colonization. Journal of Cystic Fibrosis, Available online 22 May 2019 https://doi.org/10.1016/j.jcf.2019.05.008*

10- *Törüner EK, Büyükgönenç L, 2012. Basic Nursing Approaches to Child Health, 1st Edition, Göktuğ Publishing, 627-631*

11- *Nierengarten, Mary Beth. 2017, Cystic fibrosis guidelines for preschool children. Contemporary Pediatrics 34.3 26.*

12- *Moola, F. J., Henry, L. A., Huynh, E., Stacey, J. A., Faulkner, G. E. 2017. They know it's safe–they know what to expect from that face: perceptions towards a cognitive-behavioural counselling programme among caregivers of children with cystic fibrosis. Journal of Clinical Nursing, 26(19-20), 2932-2943.*

13- *Smyth, W., Abernethy, G., Jessup, M., Douglas, T., Shields, L., AREST-CF. 2017. Family-centred care in cystic fibrosis: a pilot study in North Queensland, Australia. Nursing Open, 4(3), 168-173.*

14- *Tointon, K., & Hunt, J. (2016). How holistic nursing can enhance the quality of life of children with cystic fibrosis. Nursing children and young people, 28(8), 22-25.*

15- *Gathercole, K. (2019). Managing cystic fibrosis alongside children's schooling: Family, nurse and teacher perspectives. Journal of Child Health Care, 23(3), 425-436.*

16- *Disabato, J. A., Mannino, J. E., & Betz, C. L. (2019). Pediatric nurses' role in health care transition planning: National survey findings and practice implications. Journal of pediatric nursing, 49, 60-66.*

17- *Malone H, Biggar S, Javadpour S, Edworthy Z, Sheaf G, Coyne I. Interventions for promoting participation in shared decision-making for children and adolescents with cystic fibrosis. Cochrane Database of Systematic Reviews 2019, Issue 5. Art. No.: CD012578. DOI: 10.1002/14651858.CD012578.pub2*

18- *Coyne, I., Malone, H., Chubb, E., & While, A. E. (2018). Transition from paediatric to adult healthcare for young people with cystic fibrosis: Parents' information needs. Journal of Child Health Care, 22(4), 646-657.*

19- *Schwarzenberg S.J. Hempstead SE., McDonald CM., Powers SW. Wooldridge J, Blair S. et al Enteral tube feeding for individuals with cystic fibrosis: Cystic Fibrosis Foundation evidence-informed guidelines. Journal of Cystic Fibrosis 15 (2016) 724–735.*

20- *Hızal G. Enteral Nutrition Support in Patients with Cystic Fibrosis. IX. Cystic Fibrosis Symposium and Family Education Meeting 2019,Ankara*

21- *Price, D. M., & Knotts, S. E. (2017). Communication, Comfort, and Closure for the Patient With Cystic Fibrosis at the End of Life: The Role of the Bedside Nurse. Journal of Hospice & Palliative Nursing, 19(4), 298-302.*

22- *Dellon, E. P., Helms, S. W., Hailey, C. E., Shay, R., Carney, S. D., Schmidt, H. J., ... & Prieur, M. G. (2018). Exploring knowledge and perceptions of palliative care to inform integration of palliative care education into cystic fibrosis care. Pediatric pulmonology, 53(9), 1218-1224.*

FT13

Current Evidence in Age Specific Nutrition

Dr. Hatice PARS

The childhood is a period, in which the physical growth and development increase, bone development accelerates, life-long behaviors are gained, and the foundation of certain chronic diseases that might be related with the nutrition is laid. The nutrition in childhood is very important for maintaining the optimal growth, gaining healthy dietary habits, and preventing the health problems that may arise in adulthood. The current evidences about the nutrition in childhood period have been discussed within the scope of nutrition-related problems frequently observed in the childhood period. Some of the important problems in toddlers, pre-school and school children are food allergies, atopic diseases, rejection of certain foods, child with poor appetite, caries, and obesity, whereas the problems seen in adolescence are obesity, vegetarian diets, and micro and macro nutritional deficiencies. Moreover, malnutrition is considered to be an important problem among children having chronic disease and/or hospitalized.

The caries is one of the important nutrition-related problems starting to be seen since the early childhood period. Nutrition and oral health are closely related with each other. Insufficient energy and protein intake may delay the tooth eruption, affect the tooth size, and cause dysfunction of the salivary gland. The micronutrients (such as calcium, Vitamin D, and fluor) are also vital for the development of oral structure, as well as protecting it. Poor oral health negatively influences the nutritional status of child and it finally results in an increase in the risk of nutritional deficiency. The main reasons for early childhood caries (ECC) are long-term exposure of teeth to sweetened liquids (formula, juice, or sweetened beverages) and the bottle-feeding during bedtime and drowsiness period. Especially the children, who can hold the nursing bottle on their own, and the children, who can easily access to the bottles containing water or sweetened fluids during the daytime, are under high risk.[1] The breast-fed babies are under a lower risk. The main strategy in the ECC is the education to be given to the parents. Leaving the use of bottle since 1st age, serving the juices and fluids other than milk or formula, preventing the sleep of babies with bottle in their mouth, and informing the parents about the early diseases that may develop are also important. The family should be informed of tooth-brushing and fluoride application. Moreover, the most important education to be given is the briefing about the amounts of sugar to be consumed and the content of snacks. In year 2017, the European Society for Pediatric Gastroenterology Hepatology and Nutrition (ESPGHAN) published a guideline about the sugar intake of babies, children, and adolescents.[2] Moreover, ESPGHAN recommends interventions aiming to decreasing the free sugar intake of babies, children, and adolescents (public educations on the effect of high intake of free sugar and benefits of reducing the intake of free sugar for the health, designing the labels of food and beverage products in order to warn the consumers about freeing the sugar content, limitations on marketing and advertisement of sugary products, standards on limiting the free sugar in pre-school and school meals, taxes on sugary products, and fiscal measures taken for encouraging the healthy foods, and etc.).

In the previous studies, it was argued that nutrition-related behaviors such as consuming the sugary foods in early-childhood period are related with obesity in childhood and adolescence.[3] In a study carried out on 477,620 children (aged between 2 and 13 years) in 28 countries, the

rate of obesity was reported to vary between 15.8% and 25.6%.[4] In PROFIT[5] study examining the long-term effects of breastfeeding, it was reported that breastfeeding improved the cognitive development at the age of 6.5, reduced the behavioral feeding problems at the age of 11.5, and decreased eczema at the age of 1 but had no effect on the obesity. However, in some of previous meta-analyses, it was stated that there is a relationship between breastfeeding and overweight and obesity in childhood and adolescence periods, it decreases obesity by approx. 13%, and it is a protective factor for childhood obesity and type-II diabetes.[6,7] In ESPGHAN, there is a consensus that, although the breast milk doesn't have a strong protective effect on the obesity, feeding only with breast milk for 6 months (or minimum 4 months) and maintaining the breastfeeding together with complementary foods for 1 year or longer should be encouraged.[8]

Skipping the breakfast is very frequently observed especially among the school-age children and adolescents. In a previous study, it was reported that skipping the breakfast is related with poor lipid profile, blood pressure levels, insulin resistance, and development of metabolic syndrome, and obesity.[9] As one eats out more frequently, the amount of, sweetened beverages, trans fat, and total energy intakes increases and the consumption of low-fat milk, fruit, and vegetables decreases. There is a strong relationship between the low level of fruit and vegetable consumption together with a high level of energy intake and overweight since the age of 1. This suggests that healthy dietary habits should be initiated since the early periods. Low level of fruit and vegetable in babyhood caused low levels of fruit and vegetable consumption at the age of 6.[3,10]

In a childhood obesity study carried out in our country (COSI-TUR-2016), it was determined that the prevalence of obesity among children aged 7-8 years is 24.5%. According to the data of TNSA 2018, it was determined that obesity is observed in 8% of children aged younger than 5 years. In this parallel, World Health Organization (WHO) recommends encouraging the access of children to healthy foods, and interventions aiming to decrease the high-fat, sugar, and -salt foods (HFSS) and acidic beverages by children and young individuals. The effect of advertisements on nutrition especially in the school-age and adolescence periods was emphasized. As a result of the reports of Vienna Declaration on Nutrition and Non-communicable Diseases in the Context of Health, the World Health Organization's (WHO) Food and Nutrition Action Plan, and the Commission on Ending Childhood Obesity, it was determined that the most frequently seen product category on the TV Ads is the foots with the share of 32.1%; majority of the food advertisements consist of high-energy HFSS foods, sugary beverages, and restaurants. Moreover, it was also determined that the shares of advertisements of healthy foods in parallel with WHO's nutrition profile model were 21.2% for TV Ads and 25.6% for the online Ads. 68% of the foods advertised on TV are unhealthy ones. The food products most frequently advertised on the company webpages are chocolate (25.6%), cakes, cookies, and pastry products (13.7%), and non-alcoholic sugary beverages (14.5%).[11]

In this parallel, in order to avoid and prevent the obesity, it is recommended to support the breastfeeding, increase the consumption of fruit and vegetable, have children do 60-min exercise on daily basis, perform routine check-ups (body weight, height, and BMI), limit/forbid the consumption of sugary foods and beverages until the age of 2, introduce vegetables, fruits, legumes, fat-free meat, fish, poultry, and egg, limit the time spent in TV, PC, and video-games, prevent snacks eaten while watching TV, prefer healthy foods over the foods containing high fat, energy and fructose and advertised on TV, and develop healthy dietary habits. Moreover, the lunches in schools should contain menus compatible with nutrition guidelines, the menus containing less fat and more fruit, vegetable, and wholegrain should be prepared, and the children should be canalized to fixed menus rather than processed

foods containing additives. The sugary drink and food automates should be removed, and the nutritional education, physical activity, campus dining areas, and other school-based activities to support the healthy lives of children should be addressed. In order to protect from obesity, the food services in the school should be coordinated with school health programs and nutritional school policies, the nutrition-friendly program should be provided to whole school, and continuous supervision should be performed on regular basis. Moreover, a copy of school's menu program should be given to the families and the dinners should be prepared considering this list by using different food groups, the breakfast should not be skipped, and the healthy snacks such as fruit, milk, yogurt, and dried fruits should be preferred over sugar, chocolate, and etc. causing obesity and caries, and the children and their families should be given education addressing the importance and necessity of healthy and balanced diet at the early ages. The dietary preferences, dietary habits, and obesity rapidly develop at the age of 2. For this reason, the education to be given to the families is very important.[10-15]

The other important problems that might be seen in the childhood period are the child with poor appetite, child eating insufficiently, child eating one type of food, and child anxious about eating. The family, character, and culture have a significant effect on the child's dietary habits. Controlling the nutritional behaviors of family should a part of approach for treating the child with poor appetite. Child-parent interaction plays an important role in determining a child's eating style (selective eating, emotional eating). It was found that there is a relationship between parents' nutritional strategies and children's energy intake, diet quality, and body weight. Overprotective and authoritarian parents show similar patterns in parenting practices such as observing the children's healthy food consumption and making healthy food available. Besides that, similar to the authoritarian parents, the overprotecting parents use higher pressure for eating or more limitation for weight control. The authoritarian parents frequently use methods such as controlling the nutritional behaviors of child, emotion regulation, controlling the food consumption for weight control, and "carrot-and-stick" approach in nutrition. These authoritarian practices generally affect the food consumption of children negatively. Although forcing is effective in the short-term, it affects the self-control skills of child in the long-term and increases the risk of obesity.[16-20] The families should be informed and encouraged about developing the healthy dietary habits of children.
Following the infancy period, the second most rapid growth is observed in the adolescence period and, thus, adequate nutrition is very important for the development to achieve its full potential in this period. 25% of the world population consists of 10-24-year-old individuals. This group of individuals constitutes the healthiest and most productive segment of their own societies. The adolescents are an important population for nutritional interventions aiming to encourage healthy behaviors such as healthy nutrition. The dietary habits and nutritional behaviors in the adolescence period were related to both physical health and mental health. A well-designed vegetarian diet is healthy and effective in protecting from several chronic diseases. However, a misapplied vegetarian diet with no diversity may cause insufficient levels of Vitamin d, Vitamin B_{12}, iron, calcium, and Omega-3 fatty acids.[21,22] The vegetarian adolescents and parents should be informed about nutrition and they should consume foods by knowing the contents and enhancing in the way containing sufficient amount of vitamins and minerals. In this period, the "multidisciplinary team" approach is very important; the families should be referred to a specialist dietitian and healthy diet programs should be designed.

Some of the other important problems seen in the childhood period and continuing in the adolescence are food allergies and atopic diseases. On this subject, the most current suggestions of American Academy of Pediatrics are as follows;[23,24,25]

- There is a lack of evidence to support maternal dietary restrictions either during pregnancy or during lactation to prevent atopic disease.
- There is evidence that exclusive breastfeeding for the first 3 to 4 months decreases the cumulative incidence of eczema in the first 2 years of life.
- The evidence now suggests that any duration of breastfeeding beyond 3 to 4 months is protective against wheezing in the first 2 years of life.
- There is now evidence that the early introduction of infant-safe forms of peanuts reduces the risk of peanut allergies. Data are less clear for timing of introduction of eggs; and
- The new recommendations for the prevention of peanut allergy are based largely on the LEAP trial and are endorsed by the AAP. An expert panel has advised peanut introduction as early as 4 to 6 months of age for infants at high risk for peanut allergy (presence of severe eczema and/or egg allergy). The recommendations contain details of implementation for high-risk infants, including appropriate use of testing (specific IgE measurement, skin-prick test, and oral food challenges) and introduction of peanut-containing foods in the health care provider's office versus the home setting, as well as amount and frequency.

References

1. *Koletzko B. Parenteral nutrition support. Koletzko B, (editör). Pediatric nutrition in practice, second edition, Nestle, Switzerland; 2015*
2. *ESPGHAN Committee on Nutrition: Natasa Fidler Mis, Christian Braegger, Jiri Bronsky, Cristina Campoy, Magnus Domellof, Nicholas D. Embleton, Iva Hojsak, Jessie Hulst,Flavia Indrio, Alexandre Lapillonne, Walter Mihatsch, Christian Molgaard, Rakesh Vora, and Mary Fewtrell. Sugar in Infants, Children and Adolescents. A Position Paper of the European Society for Paediatric Gastroenterology, Hepatology and Nutrition Committee on Nutrition. Journal of Pediatric Gastroenterology and Nutrition: December 2017; 65(6):681–696 doi: 10.1097/MPG.0000000000001733*
3. *Woo Baidal JA, Locks LM, Cheng ER, Blake-Lamb TL, Perkins ME, Taveras EM. Risk Factors for Childhood Obesity in the First 1,000 Days: A Systematic Review. Am J Prev Med. 2016;50(6):761-779*
4. *Garrido-Miguel M, Cavero-Redondo I, Álvarez-Bueno C, Rodríguez-Artalejo F, Moreno LA, Ruiz JR, Ahrens W, Martínez-Vizcaíno V. Prevalence and Trends of Overweight and Obesity in European Children From 1999 to 2016: A Systematic Review and Meta-analysis. . JAMA Pediatr. 2019 Aug 5:e192430. doi: 10.1001/jamapediatrics.2019.2430.*
5. *Kramer, MS, Chalmers, B,Hodnett, ED, Sevkovskaya Z, Dzikovich I, Shapiro S, Collet JP, Vanilovich I, Mezen I, Ducruet T, et al. Promotion of Breastfeeding Intervention Trial (PROBIT). JAMA 2001;285: 413-420.*
6. *Patro-Gołąb B, Zalewski BM, Kołodziej M, Kouwenhoven S, Poston L, Godfrey KM, Koletzko B, van Goudoever JB, Szajewska H. Nutritional interventions or exposures in infants and children aged up to 3 years and their effects on subsequent risk of overweight, obesity and body fat: a systematic review of systematic reviews.Obes Rev. 2016 Dec;17(12):1245-1257. doi: 10.1111/obr.12476. Epub 2016 Oct 17.*
7. *Horta BL, Loret de Mola C, Victora CG. Long-term consequences of breastfeeding on cholesterol, obesity, systolic blood pressure and type 2 diabetes: a systematic review and meta-analysis.Acta Paediatr. 2015 Dec;104(467):30-7. doi: 10.1111/apa.13133.*
8. *ESPGHAN Committee on Nutrition, Agostoni C, Braegger C, Decsi T, Kolacek S, Koletzko B, Michaelsen KF, Mihatsch W, Moreno LA, Puntis J, Shamir R, Szajewska H, Turck D, van Goudoever J. Breast-feeding: A commentary by the ESPGHAN Committee on Nutrition. J Pediatr Gastroenterol Nutr 2009;49:112-25.*
9. *Monzani A, Ricotti R, Caputo M, et al. A Systematic Review of the Association of Skipping Breakfast with Weight and Cardiometabolic Risk Factors in Children and Adolescents. What*

Should We Better Investigate in the Future?. Nutrients. 2019;11(2):387. Published 2019 Feb 13. doi:10.3390/nu11020387

10. *Grimm KA, Kim SA, Yaroch AL, Scanlon KS. Fruit and vegetable intake during infancy and early childhood. Pediatrics. 2014;134(Suppl 1):S63-9.*
11. *Monitoring food marketing in children Turkey. http://www.euro.who.int/__data/assets/pdf_file/0007/381823/food-marketing-tur-eng.pdf?ua=1*
12. *Mennella JA, Reiter AR, Daniels LM. Vegetable and Fruit Acceptance during Infancy: Impact of Ontogeny, Genetics, and Early Experiences. Adv Nutr. 2016;7(1):211S-219S.*
13. *Perrine CG, Galuska DA, Thompson FE, Scanlon KS. Breastfeeding duration is associated with child diet at 6 years. Pediatrics. 2014;134(Suppl 1):S50-5.*
14. *Nader PR, Huang TT, Gahagan S, Kumanyika S, Hammond RA, Christoffel KK. Next steps in obesity prevention: altering early life systems to support healthy parents, infants, and toddlers. Child Obes. 2012;8(3):195-204.*
15. *Perez-Escamilla R, Bermudez O. Early life nutrition disparities: where the problem begins? Adv Nutr. 2012;3(1):71-72.*
16. *Perez-Escamilla R, Kac G. Childhood obesity prevention: a life-course framework. Int J Obes Suppl. 2013;3(Suppl 1):S3-S5.*
17. *Van der Horst K, Sleddens EFC. Parenting styles, feeding styles and food-related parenting practices in relation to toddlers' eating styles: A cluster-analytic approach. PLoS ONE. 2017;12 (5): e0178149.*
18. *Hennessy E, Parent behavior and child weight status among a diverse group of underserved rural families. Appetite. 2010; 54(2):369–77.*
19. *Baranowski T, et al. Houston. We have a problem! Measurement of parenting. Childhood obesity. 2013; 9 Suppl:S1–4.*
20. *Vaughn AE, et al. Fundamental constructs in food parenting practices: a content map to guide future research. Nutrition Reviews. 2016; 47(2):98– 117.*
21. *Hughes SO, et al. Food parenting measurement issues: working group consensus report. Childhood obesity. 2013; 9 Suppl:S95–102.*
22. *Antonopoulou M, Mantzorou M, Serdari A, et al. Evaluating Mediterranean diet adherence in university student populations: Does this dietary pattern affect students' academic performance and mental health? Int J Health Plann Mgmt. 2019;1–17.*
23. *Togias A, Cooper SF, Acebal ML, et al. Addendum guidelines for the prevention of peanut allergy in the United States: report of the National Institute of Allergy and Infectious Diseases-Sponsored Expert Panel. J Allergy Clin Immunol. 2017;139(1): 29–44.*
24. *Greer FR, Sicherer SH, Burks AW, AAP COMMITTEE ON NUTRITION, AAP SECTION ON ALLERGY AND IMMUNOLOGY. The Effects of Early Nutritional Interventions on the Development of Atopic Disease in Infants and Children: The Role of Maternal Dietary Restriction, Breastfeeding, Hydrolyzed Formulas, and Timing of Introduction of Allergenic Complementary Foods. Pediatrics. 2019;143(4): e2019028*
25. *Du Toit G, Roberts G, Sayre PH, et al; LEAP Study Team. Randomized trial of peanut consumption in infants at risk for peanut allergy [published correction appears in N Engl J Med. 2016;375(4):398]. N Engl J Med. 2015; 372(9):803–813*
26. *Beşer, Omer Faruk et al. Evaluation of malnutrition development risk in hospitalized children. Nutrition 2017;48:40-47 .*
27. *Wonoputri N, Djais JTB, Rosalina I. Validity of Nutritional Screening Tools for Hospitalized Children. Hindawi Publishing Corporation Journal of Nutrition and Metabolism. 2014; 1-6.*
28. *Aurangzeb B, Whitten KE, Harrison B, et al: Prevalence of malnutrition and risk of under-nutrition in hospitalized children. Clin Nutr 2012; 31:35–40.*

FT14

Current Evidence in Age Specific Nutrition

Dr. Hatice PARS

There is no other time in life when the provision of adequate and balanced nutrition is of greater importance than during infancy and childhood. The nutrition in childhood is very important for maintaining the optimal growth, gaining healthy dietary habits, and functional outcomes such as cognition and immune response, the metabolic programming of long-term health and well-being and preventing the health problems that may arise in adulthood. Some of the important problems in toddlers, preschool and school children are food allergies, atopic diseases, rejection of certain foods, child with poor appetite, caries, and obesity, whereas the problems seen in adolescence are obesity, vegetarian diets, and micro and macro nutritional deficiencies. Moreover, malnutrition is considered to be an important problem among children having chronic disease and/or hospitalized. The important problems seen in the childhood period and continuing in the adolescence are food allergies and atopic diseases. On this subject, the most current suggestions of American Academy of Pediatrics (2019) are very important. Delaying the introduction of certain allergens beyond the 7th month of life has no preventive effect and no is not recommended. The other important problems that might be seen in the childhood period are the child with poor appetite, child eating insufficiently, child eating one type of food, and child anxious about eating. The family, character, and culture have a significant effect on the child's dietary habits. Skipping the breakfast is very frequently observed especially among the school-age children and adolescents. It was reported that skipping the breakfast is related with poor lipid profile, blood pressure levels, insulin resistance, and development of metabolic syndrome, and obesity. World Health Organization (WHO) recommends encouraging the access of children to healthy foods, and interventions aiming to decrease the high-fat, sugar, and -salt foods (HFSS) and acidic beverages by children and young individuals. There is a strong relationship between the low level of fruit and vegetable consumption together with a high level of energy intake and overweight since the age of 1. This suggests that healthy dietary habits should be initiated since the early periods. The most important education to be given is the briefing about the amounts of sugar to be consumed and the content of snacks. In year 2017, the European Society for Pediatric Gastroenterology Hepatology and Nutrition (ESPGHAN) published a guideline about the sugar intake of babies, children, and adolescents. Moreover, promising policies and strategies for delivering adolescent nutrition interventions include (focusing on healthy eating practices, physical activity and body image), improvements in the nutritional quality of the food supply and training and involvement of parents and teachers to successfully implement health promotion strategies and activities. Finally, the "multidisciplinary team" approach is very important; the families should be referred to a specialist dietitian and healthy diet programs should be designed.

FT15

İmmun Yetmezlikte Tcr Aβ (+) Deplesyonu İle Haploidentik Hematopoietik Kök Hücre Nakli

Ebru Yılmaz, Alper Özcan, Ekrem Ünal, Türkan Patıroğlu, Musa Karakükcü

Erciyes Üniversitesi Tıp Fakültesi, Pediatrik Hematoloji-Onkoloji Bölümü ve KİT Merkezi, Kayseri, Türkiye.

Giriş:
Benign ve malign hematolojik hastalıklar, immun yetmezlikler ve metabolik bozukluklar gibi çocukluk çağında görülen birçok hastalığın tedavisinde hematopoetik kök hücre nakli (HKHN) küratif tedavi amacı ile kullanılmaktadır. HLA uyumlu donör bulunamayan hastalarda haploidentik HKHN alternatif bir tedavi seçeneğidir. Son yıllarda özellikle graft versus host hastalığını(GVHH) önlemek için yapılan in-vivo veya in-vitro T hücre deplesyonları sonucu nakil başarılarında anlamlı artışlar sağlanmıştır. Haploidentik nakillerde; CD 34 seleksiyonu, CD 3 deplesyonu, CD 3/CD 19 deplesyonu ve TCR-αβ (+) /CD19 deplesyonu gibi farklı in-vitro graft manüplasyon teknikleri kullanılmıştır. Bu yazıda, Erciyes Pediatrik KİT merkezinde, in vitro CD19 deplesyonu olmadan sadece TcR αβ (+) deplesyonu ile haploidentik HKHN yapılan immun yetmezlik nedeni ile takipte olan hastaların sonuçları paylaşılmıştır.

Materyal ve Metod:
Merkezimizde Aralık 2012-Ekim 2019 tarihlerinde TCR αβ (+) deplesyonu ile haploidentik HKHN yapılan çocuklar çalışmaya dahil edildi. 19 çocuk (11 erkek, 8 kız) hastaya toplam 23 haploidentik HKHN yapıldı. Hastaların tanıları; 3 RAGII eksikliği, 2 Griscelli sendromu, 2 Wiskott Aldrich sendromu, 2 IL7R eksikliği, birer hasta ise lökosit adhezyon defekti, ADA enzim eksikliği, XLF eksikliği idi. Genetik analizleri henüz sonuçlanmayan iki hasta Omenn sendromu, 4 hasta ağır kombine yetmezlik tanılarıyla nakil olurken relaps lenfoma nedeni ile nakil yapılan bir hastada RAGRP1 geninde mutasyon saptandı. Yedi hastaya hazırlama rejimi verilmedi, diğer hastalara ise ATG, fludarabin, tiotepa, melfalan veya busulfan bazlı protokol kullanıldı. Onüç nakilde anne, on nakilde baba donör olarak kullanıldı. Graft içeriğinde TCR αβ (+) sayısı $2{,}5x10^4$/kg üzerinde ise GVHH proflaksisi için mikofenolat mofetil veya siklosporin verildi. Nakil öncesi EBV enfeksiyonu geçiren hastalara postransplant lenfoproliferatif hastalık (PTLH) proflaksisi amacı ile -1. günde rituximab hazırlama rejimine eklendi. TCR αβ (+) deplesyonu yapılan kök hücrelerin nakilde kullanılan bölümü dışında kalan kısmı medikal tedavi ile kontrol altına alınamayan viral enfeksiyonların tedavisinde kullanılmak üzere $1x10^6$ dozunda DLI olarak dondurulduu.

Sonuçlar:
Çalışmaya dahil edilen hastaların yaş ortalaması 1,96 ± 1,8 yıl idi. Hastalara verilen ürün içeriğinde; CD34 hücrelerin median değeri 23,6 x 10^6 (±8,6x10^6) /kg idi. TcR αβ (+) deplesyonunda%99.7 (95,8-99,9) saflık sağlanmış ve median değeri 0,17 (0.013– 1,3) x 10^5TcR αβ (+) hücre olan ürün hastalara verilmiştir. Hazırlama rejimi verilen hastalarda median engraftman günleri sırasıyla myeloid ve platelet için +10,5 (±0,55) ve +13 (±3,8) günlerdir. Dört hastada grade I-II GVHH gelişti (%21) ve başka bir komplikasyon gelişmeden sadece steroid ile tedavi edildi. Bir hastaya rejeksiyon nedeni ile 3 kez, 2 hastaya 2 şer kez nakil yapıldı. Hazırlama rejimi almayan 7 hastada miks kimerizm, diğer hastalarda ise tam kimerizm vardı. En sık görülen viral enfeksiyon CMV idi (% 56). Riskli gruba girmeyen hastalar olması nedeni ile rituximab verilmeyen 3 hastada EBV ilişkili postransplant

lenfoproliferatif hastalık gelişti (%13). Hastaların izlem süresi 1,6 yıl (±1,1 yıl) ve transplantasyon-ilişkili mortalite oranı % 26 olarak bulundu.

Tartışma:
İmmun yetmezliklerin tedavisinde HLA tam uyumlu verici bulunamaması durumunda alternatif donör kullanımı akut ve kronik GVHH, graft yetmezliği, geç immun yapılanma ilişkili enfeksiyonlar gibi sorunları beraberinde getirmektedir. Ancak TcR αβ (+) deplesyonu ile yapılan haploidentik nakiller, erken engraftman ve immun yapılanma, kabul edilebilir akut GVHH oranları ile dikkati çekmektedir. Bu tür nakillerin antiviral aktivite, antitümör etki, erken engraftman ve immun yapılanmanın başarısında ise üründe kalan TcR γδ (+) hücreler sorumlu olabilir. Bu durum özellikle enfeksiyon ile nakle giren hastalar için avantajdır (1).
Balashov ve arkadaşlarının immun yetmezlik nedeni ile TcR αβ / CD19 (+) deplesyonu ile yaptıkları haploidentik nakillerde grade II-IV akut GVHH kümülatif insidansı %33 olarak bildirilmiştir (2). Bertaina ve arkadaşlarının immun yetmezliği olan hastaları dahil ettikleri çalışmada ise grade I-II akut GVHH görülme insidansı %13.1 saptanmıştır. Aynı çalışmada grade III-IV akut GVHH ve kronik GVHH görülmemiştir (3). Çalışmamızda grade I-II akut GVHH görülme oranı %21 idi, hastalarımızın hiçbirinde hayatı tehdit eden grade III-IV akut GVHH ve kronik GVHH görülmedi.
TcR αβ / CD19 (+) deplesyonu ile yapılan nakillerde graft yetmezliği oranı %16-30 bildirilmiş olup (1, 2, 3), literatürle uyumlu olarak hastalarımızda bu oran %17.4 olarak saptandı.
PTLH %80-85 B hücrelerinden, %10-15 T hücrelerinden kaynaklanmaktadır. Nadiren natural killer hücre kaynaklı PTLH da raporlanmıştır (4, 5). Çocukluk çağı B hücre kaynaklı PTLH'de CD20 (+) ve çoğu Epstein-Barr virüs (EBV) enfeksiyonu ile ilişkilidir (6, 7). Allojenik HKHN'de alıcıda HLA uyumsuzluğu varsa, üründe T hücre deplesyonu yapıldıysa veya hazırlama rejiminde antitimosit globülin kullanılmışsa PTLH sıklığı artmaktadır. Solid organ nakilleri ile kıyaslandığında HKHN'de daha az görülmekte, ancak mortalitesi daha yüksek olmaktadır (8, 9). TcR αβ / CD19 (+) deplesyonu ile nakil yapılan hastalarda PTLH görülme insidansı %0-16 arasında değişmektedir (3, 10). Çalışmamızda haslarımızın 3'nde (%13) PTLH gelişti ve EBV ilişkili idi. Rituximab tedavisine rağmen hastalarımızdan biri kaybedildi. Hastalarımızda literatürle uyumlu olarak en fazla görülen enfeksiyon CMV idi (1, 2, 3).
TcR αβ / CD19 (+) deplesyonu ile yapılan nakillerde transplant ilişkili mortalite oranı %9,3 saptanmış olup (3), hastalarımızda %26 olarak tespit edildi. Üç hastamız nakile alındığı sırada mekanik ventilatörde takip ediliyordu. Mortalite oranımızın yüksekliğinin nedeni nakle aldığımız hastaların kliniklerinin ağır olması olabilir.
Sonuç: TCR-αβ deplesyonu yapılan haploidentik HKHN, vericisi olmayan ve küretaif tedavi seçenekleri kullanılmadığında mortalite-mobiditesi yüksek immun yetmezlik hastalarında, erken engraftman, kabul edilebilir GVHH oranlarıyla umut verici özelliğini korumaktadır.

***Anahtar Kelimeler**: Haploidentik hematopetik kök hücre nakli, TCR-αβ (+) T hücre deplesyonu, immun yetmezlik*

Literatür:

1. *Brettig T, Smart J, Choo S, Mechinaud F, Mitchell R, Raj TS, Cole T. Use of TCR α/β(+)/CD19(+)-Depleted Haploidentical Hematopoietic Stem Cell Transplant Is a Viable Option in Patients With Primary Immune Deficiency Without Matched Sibling Donor. J Clin Immunol. 2019 Jul;39(5):505-511.*
2. *Balashov D, Shcherbina A, Maschan M, Trakhtman P, Skvortsova Y, Shelikhova L, Laberko A, Livshits A, Novichkova G, Maschan A. Single-Center Experience of Unrelated and*

Haploidentical Stem Cell Transplantation with TCRαβ and CD19 Depletion in Children with Primary Immunodeficiency Syndromes. Biol Blood Marrow Transplant. 2015 Nov;21(11):1955-62.

3. *Bertaina A, Merli P, Rutella S, Pagliara D, Bernardo ME, Masetti R, Pende D, Falco M, Handgretinger R, Moretta F, Lucarelli B, Brescia LP, Li Pira G, Testi M, Cancrini C, Kabbara N, Carsetti R, Finocchi A, Moretta A, Moretta L, Locatelli F. HLA-haploidentical stem cell transplantation after removal of αβ+ T and B cells in children with nonmalignant disorders. Blood. 2014 Jul 31;124(5):822-6.*
4. *Ibrahim HA, Naresh KN. Posttransplant lymphoproliferative disorders. Adv Hematol. 2012;2012:230173.*
5. *Kwong YL, Lam CC, Chan TM. Post-transplantation lymphoproliferative disease of natural killer cell lineage: a clinicopathological and molecular analysis. Br J Haematol. 2000 Jul;110(1):197-202.*
6. *Wistinghausen B, Gross TG, Bollard C. Post-transplant lymphoproliferative disease in pediatric solid organ transplant recipients. Pediatr Hematol Oncol. 2013 Sep;30(6):520-31.*
7. *Mynarek M, Schober T, Behrends U, Maecker-Kolhoff B. Posttransplant lymphoproliferative disease after pediatric solid organ transplantation. Clin Dev Immunol. 2013;2013:814973.*
8. *Gross TG, Steinbuch M, DeFor T, Shapiro RS, McGlave P, Ramsay NK, Wagner JE, Filipovich AH. B cell lymphoproliferative disorders following hematopoietic stem cell transplantation: risk factors, treatment and outcome. Bone Marrow Transplant. 1999 Feb;23(3):251-8.*
9. *Curtis RE, Travis LB, Rowlings PA, Socié G, Kingma DW, Banks PM, Jaffe ES, Sale GE, Horowitz MM, Witherspoon RP, Shriner DA, Weisdorf DJ, Kolb HJ, Sullivan KM, Sobocinski KA, Gale RP, Hoover RN, Fraumeni JF Jr, Deeg HJ. Risk of lymphoproliferative disorders after bone marrow transplantation: amulti-institutional study. Blood. 1999 Oct 1;94(7):2208-16.*
10. *Gaziev J, Isgrò A, Sodani P, Paciaroni K, De Angelis G, Marziali M, Ribersani M, Alfieri C, Lanti A, Galluccio T, Adorno G, Andreani M. Haploidentical HSCT for hemoglobinopathies: improved outcomes with TCRαβ(+)/CD19(+)-depleted grafts. Blood Adv. 2018 Feb 13;2(3):263-270.*

FT16

Clinical and Immunological Findings of a Child with Cell Division Cycle 42 mutation

Aysenur PAC KISAARSLAN[1,2] ,Ekrem UNAL[2,3], Ahmet EKEN[2,4,] Türkan PATIROĞLU[3,5]

[1]Erciyes University, Pediatric Rheumatology, Kayseri, Turkey

[2]Betül-Ziya Eren Genome and Stem Cell Center (GENKOK), Kayseri, Turkey.

[3]Erciyes University, Pediatric Hematology and Oncology & HSCT, Kayseri, Turkey

[4]Department of Medical Biology, Erciyes University School of Medicine, Kayseri, Turkey.

[5]Erciyes University, Pediatric Immunology, Kayseri, Turkey

A male patient who is on 4,5 year of age, was admitted the neonatal intensive care unit because of anemia, thrombocytopenia, neutropenia and high acute phase reactans (APR) at the 20 day of age. Patient was diagnosed septicemia. At the 40 day of age, persistant fever, rash and hepatosplenomegaly developed. Patient was diagnosed Hemophagocytic lymphohistiocytosis, and treated intravenous immunoglobulin (IVIG) and steroid. An anemia, thrombocytopenia, neutropenia and high APR repeated at sixth month of age. Patient suffered from mucosal and intracranial bleading. Anemia and thrombocytopenia regressed, but neutropenia persisted in the following months. Pamidronate treatment was started for diagnosis of osteoporosis at the 21 month of age. Patient had hypotonia and mental, motor retardation. Fever with rash attacs started at 2 year of age, patient treated with anakinra for diagnosis of CAPS . There is no detected a mutation NLRP3 gene. An anemia without requirement of transfusion and neutropenia persisted on the following time. By the Whole exon sequensing, heterozygous missense variation CDC42(LRG_1326t1:c556C>T;pArg186Cys) was detected. CDC42 is a member of the Rashomolog (Rho) GTPase family, which controls a range of cellular processes including adhesion, migration, polarity, cell cycle and proliferation. It acts as a key to control GTP and GDP conversions(1). NOARCH syndrome was newly described at 4 patients as neonatal onset pancytopenia, autoinflammation, rash and episodic HLH on 2019 (2).

References

1. *Campbell D. Lawson and Anne J. RidleyRho GTPase signaling complexes in cell migration and invasion. The Rockefeller University Press J. Cell Biol. Vol. 217 No. 2 447–457.*
2. *Lam MT, Coppola S, Krumbach OHF, Prencipe G, Insalaco A, Cifaldi C,et al. A novel disorder involving dyshematopoiesis, inflammation, and HLH due to aberrant CDC42 function. J Exp Med. 2019 Oct 10. doi: 10.1084/jem.20190147.*

Acknowledgements: *We would like to thank Prof. Dr. Christoph KLEIN, Asistant Prof. Dr. Fabian HAUCK and their team for thair controbutions for perfroming whole exome study from the patient.*

Complementary Health Approaches in The Newborn

Fatma Taş Arslan

Selçuk Üniversitesi Hemşirelik Fakültesi, Konya

Abstract

World Health Organization (WHO) refers to Traditional and Complementary and Alternative Medicine and defines traditional medicine as: "The sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness". In the United States, the concept has recently been defined as complementary health approaches within the framework of holistic medicine, while in Turkey, similar to WHO, it is used as traditional and complementary medicine (GETAT). The use of holistic approaches to health has increased in the care centers both in the world and in Turkey. In particular, researchers have been investigating the potential benefits of integrative health care in a variety of situations, including pain management, symptom relief in cancer patients and survivors, and programs promoting healthy behavior. In nursing, the holistic care concept is considered to be within the scope of human mind-body-soul integrity. It is seen that holistic developmental care has been proposed in the newborn period in recent years and in this context, holistic care practices have been used to minimize the effect of environmental factors (light, sound, smell, touch etc.). Jean Watson, the theorist of the Human Care Theory, suggests using care-healing methods in nursing and recommends complementary therapies on the basis of these methods. In the literature, complementary health approaches such as massage, tactile/kinesthetic stimulation, therapeutic touch, reflexology, acupressure, acupuncture and music are listed to alleviate various diseases and symptoms in newborns. In 2014, a regulation on GETAT applications was issued in Turkey and 15 methods were included in this regulation. However, it is seen that the application of these methods is very limited in newborns. In this context, there is a need to discuss the complementary health approaches widely used in newborns in the world and the practices in Turkey. Such a discussion is thought to raise awareness of the health professionals working with newborns and to support the design of studies with high level of evidence, which may eventually be reflected in practice.

Keywords: *Nurse, complementary health approaches, newborn, newborn care*

Introduction

World Health Organization (WHO) refers to Traditional and Complementary and Alternative Medicine and defines traditional medicine as: "The sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness" (1). The National Center for Complementary and Integrative Health (NCCIH) in the US uses the concepts of "Complementary and Integrative Health" and complementary health approaches (2). In Turkey, the Department of Traditional, Complementary and Alternative Medicine Practices was established in 2011 and based on the definition of the WHO, the concept of "Traditional and Complementary Medicine (GETAT)" is used. In our country, "The Regulation on Traditional, Complementary and Alternative Medicine Practices" was issued in 2014. This

regulation includes 15 methods, which are phytotherapy, larva application, mesotherapy, prolotherapy, music therapy, hypnosis, cup application, homeopathy, ozone application, leech therapy, osteopathy, acupuncture, reflexology, chiropractic, and apitherapy (3). NCCIH categorized complementary health approaches into two subgroups. The first subgroup is the natural products including herbal products, vitamins, minerals, probiotics and dietary products. The second subgroup is the mind and body practices which are yoga, meditation, massage, chiropractic, osteopathy, relaxation techniques, tai chi, gi gong, therapeutic touch, hypnosis, movement therapies, and acupuncture. Other complementary health approaches are traditional healers, ayurvedic medicine, traditional Chinese medicine, homeopathy, and naturopathy applications (2).

The American Academy of Pediatrics (AAP) stated that the use of complementary and integrative therapies for children has increased. The use of these therapies and preventive health approaches has increased especially in children with chronic diseases because of the desire to reduce the frequency and duration of prescribed drug use and because of the need for a more effective tool (4). It has been shown in various studies that the use of complementary health approaches in children varies between 11% and 81.5% in the world (5,6), while this rate varies between 44% and 87% in Turkey (7,8).

Although there is some scientific evidence regarding the effectiveness of many complementary therapies, there are still important questions that have not yet been addressed in well-designed scientific studies. These questions are whether such approaches/therapies are safe and whether they affect the care and treatment of healthy/sick individuals negatively when used.

The efficacy and safety of many complementary health products or approaches on children and infants have not been tested. The side effects of these methods on children emerge immediately and more often compared to adults, which needs particular attention. In addition, since all organs of children (especially liver and kidney) are more immature than those of adults, the side effects seen in children are more severe and threaten their health (2,9,10). In the AAP report, it is seen that there is information about the complementary approaches applied to children and adolescents, but the report does not include any information about the newborn period (11). The use of holistic approaches to health has increased in the care environments in the world and in Turkey. It has recently been reported that in the newborn period, holistic developmental care is recommended and, in this context, holistic care practices are used to minimize the effect of environmental factors (light, sound, smell, touch etc.). The use of neonatal integrative developmental care model in neonatal applications improves the health status of newborns (12,13). In the literature, mind and body practices commonly used to reduce various diseases and symptoms in newborns include massage, tactile/kinesthetic stimulation, therapeutic touch, reflexology, acupressure, acupuncture and music (2). Complementary health approaches in the newborn and providing nursing care to the mother and baby are very important to facilitate the adaptation of the newborn, to ensure mother-infant interaction, to reduce certain symptoms, to prevent complications, and to ensure postpartum comfort.

Massage:

Different findings have so far been revealed concerning the application of massage in newborns. A systematic review reported that for newborns requiring phototherapy (FT), on the third and fourth days of life, massage and phototherapy are more effective in reducing bilirubin compared to phototherapy only, and massage is an effective adjuvant in reducing FT time (14). As stated in the literature, massage has many benefits for the newborn and preterm infants. It supports weight gain, growth, and neurodevelopment, reduces application-related pain, reduces bilirubin levels, decreases hospital stay and infection formation, promotes

immune response, improves gastric modality, enhances natural killer cell activity, reduces sleep problems, colic and crying, strengthens interaction/attachment, and reduces maternal stress and depression (15-17).
Tactile/kinesthetic stimulation: It has positive effects on anthropometric parameters, duration of discharge, immune system, bone development, stress reduction, and motor and neurological development in the newborn (18).
Therapeutic Touch in newborn preterm infants has been reported to maintain the stability of sleep and physiological functions (heart rate, respiration rate and oxygen saturation) (19)
Reflexology: It has been reported to reduce pain during the vaccination of the newborn and to positively affect heart rate, oxygen saturation, and crying time (20). In addition, it is effective in procedural pain and infantile colic (21).
Acupressure: It was found that during the newborn heel blood collection process, the duration of crying is shorter in the group treated with acupressure and thus it is recommended for pain and colic management (22-24).
Music therapy: It reduces application-related pain, stress hormone levels, and physiological parameters in premature babies. The developmental music therapy protocol supports the developmental skill acquisition of post-term infants at NICU (25,26). It also reduces breathing and heart rate, promotes sleep, nutrition and sucking, and reduces maternal anxiety. In cases where unpredictable noise adversely affects sleep and physiological stability, meaningful auditory stimulation, such as music, can contribute to the neurodevelopment of preterm infants (27,28).

Acupuncture:

It is a new and non-pharmacological option in the management of neonatal pain and it is promising in terms of relieving pain in newborns in minor painful interventions during routine medical care (29,30). It also appears to be safe and effective in reducing abstinence symptoms (Neonatal Abstinence Syndrome-NAS) in babies and is recommended as an additional non-pharmacological treatment option for NAS (31,32).

Conclusion

When considered as a whole, it can be said that these practices are complementary practices for the developmental and holistic care of the newborn. In professional nursing practice, the balance between scientific knowledge and decision-making is important. All the products and applications used in complementary health approaches affect neonatal health like medical drugs. Since the side effects of complementary health approaches may be higher in number and more dangerous in newborns than in adults, it is important that newborn nurses are aware of and responsible for all the practices that may affect infant health. Some of the complementary health approaches (music, massage, etc.) are among the independent functions of nurses. Nurses should improve their practices within the framework of holistic care. It is thought that complementary health approaches in the newborn may raise awareness of health professionals and support the design of research providing conclusive evidence, which may eventually be reflected in practice.

References

1. *http://www.who.int/medicines/areas/traditional/en/index.html*
2. *https://nccih.nih.gov/health/integrative-health.*
3. *https://getatportal.saglik.gov.tr*
4. *https://pediatrics.aappublications.org/*
5. *Farrington R, Musgrave I, Byard, R. W. Potential adverse outcomes of herbal preparation use in childhood. Acta Paediatrica 2019;108(3), 419-422.*

6. *Stampini V, Bortoluzzi,S, Allara E, et al., The use of complementary and alternative medicine (CAM) among Italian children: A cross-sectional survey. Complementary Therapies in Medicine 2019; 47,102184.*
7. *Akçay D, Yıldırımlar A. Çocuklarda tamamlayıcı ve alternatif tedavi kullanımı ve ebeveyn bilgilerinin değerlendirilmesi. Journal of the Child 2017;17(4): 174-181.*
8. *Çalışkan N, Yıldırım N, Atalay S., et al. A descriptive study on complementary and alternative medicine use in 0 to 1-year-old infants and nurses' awareness and recommendation for complementary and alternative medicine. International Journal of Nursing Practice 2015;21(5):511-521.*
9. *Barnes J. Quality, efficacy and safety of complementary medicines: fashions, facts and the future. part II: efficacy and safety. Br J Clin Pharmacol 2003;55:331-40.*
10. *Woolf AD. Herbal remedies and children: Do they work? Are they harmful? Pediatrics 2003; 112:240-6.*
11. *McClafferty H, Vohra S, Bailey M, et al.,. Pediatric integrative medicine. Pediatrics 2017;140(3), e20171961.*
12. *Altimier L, Phillips R. The neonatal integrative developmental care model: seven neuroprotective core measures for family centered care. Newborn Infant Nurs Rev 2013;13,9-22.*
13. *Altimier L, Phillips R. The neonatal integrative developmental care model: Advanced clinical applications of the seven core measures for neuroprotective family-centered developmental care. Newborn & Infant Nursing Reviews, 2016;16,230-244.*
14. *Abdellatif M, Vuong NL, Tawfik GM, et al., Massage therapy for the treatment of neonatal jaundice: A systematic review and network meta-analysis. Journal of Neonatal Nursing, 2019; doi.org/10.1016/j.jnn.2019.09.002*
15. *Kim, HY, Bang KS. The effects of enteral feeding improvement massage on premature infants: A randomised controlled trial. Journal of Clinical Nursing 2018;27(1-2):92-101.*
16. *Hartanti AT, Salimo H, Widyaningsih V. Effectiveness of ınfant massage on strengthening bonding and ımproving sleep quality. Indonesian Journal of Medicine 2019; 4(2): 165-175.*
17. *Field T. Pediatric Massage Therapy Research: A Narrative Review. Children 2019; 6(6), 78. doi.org/10.3390/children6060078*
18. *Pepino VC, Mezzacappa MA. Application of tactile/kinesthetic stimulation in preterm infants: a systematic review. Jornal de Pediatria 2015;91(3):213-233.*
19. *Efendi D, Caswini N, Rustina Y, Iskandar RATP. Combination of Mother Therapeutic Touch (MTT) and Maternal Voice Stimulus (MVS) therapies stabilize sleep and physiological function in preterm infants receiving minor invasive procedures. Journal of Neonatal Nursing 2018;24(6):318-324.*
20. *Koç T, Gözen D. The effect of foot reflexology on acute pain in infants: A randomized controlled trial. Worldviews on Evidence-Based Nursing 2015;12(5):289-296.*
21. *Icke S, Genc R. Effect of reflexology on infantile colic. The Journal of Alternative and Complementary Medicine 2018;24(6):584-588.*
22. *Chen LL, Su YC, Su CH, et al., Acupressure and meridian massage: combined effects on increasing body weight in premature infants. Journal of Clinical Nursing 2008;17(9):1174-1181.*
23. *Landgren K, Kvorning N, Hallstrom I. Acupuncture reduces crying in infants with infantile colic: a randomized, controlled, blind clinical study. Acupunct. Med 2010;28(4):174-179.*
24. *Abbasoğlu A, Cabıoğlu MT, Tuğcu AU, et al., Acupressure at BL60 and K3 points before heel lancing in preterm infants. EXPLORE 2015;11(5):363-366.*
25. *Tang L, Wang H, Liu Q, et al., Effect of music intervention on pain responses in premature infants undergoing placement procedures of peripherally inserted central venous catheter: A randomized controlled trial. European Journal of Integrative Medicine 2018;19,105-109.*
26. *Emery L, Hamm EL, Hague K, et al., A randomized controlled trial of protocolized music therapy demonstrates developmental milestone acquisition in hospitalized infants. Acta Paediatrica 2019;108(5):828-834.*

27. *Bieleninik Ł, Ghetti C, Gold C. Music therapy for preterm infants and their parents: A meta-analysis. Pediatrics 2016;138(3):20160971.*
28. *Van der Heijden, MJ, Araghi SO, Jeekel J, et al., Do hospitalized premature infants benefit from music interventions? A systematic review of randomized controlled trials. PloS one, 2016;11(9):0161848.*
29. *Chen KL, Quah-Smith I, Schmölzer GM, et al., Acupuncture in the neonatal intensive care unit—using ancient medicine to help today's babies: a review. Journal of Perinatology 2017;37(7),749.*
30. *Stadler J, Raith W, Mileder LP, et al., Invasive and non-invasive acupuncture techniques for pain management in neonates: A systematic review. Acupuncture in Medicine 2019;37(4):201-210.*
31. *Jackson HJ, Lopez C, Miller S, Engelhardt, B. A scoping review of acupuncture as a potential intervention for neonatal abstinence syndrome. Medical Acupuncture 2019a;31(2):69-84.*
32. *Jackson HJ, Lopez C, Miller S, Engelhardt, B. Neonatal abstinence syndrome: an integrative review of neonatal acupuncture to inform a protocol for adjunctive treatment. Advances in Neonatal Care 2019b;19(3):165-178.*

FT18

Determining Maternal Attitudes in The Nutrition Process of Children

Sibel KÜÇÜKOĞLU[1] Aynur AYTEKİN ÖZDEMİR[2], Gamze AKAY[3]

[1] Selcuk University, Faculty of Nursing, Konya

[2] İstanbul Medeniyet University, Faculty of Health Science, İstanbul

[3] Artvin Coruh University, Vocational School of Health Services, Artvin

Aim:
If nutrition is not sufficient and balanced in childhood, it prepares the ground for significant health problems and chronic diseases in the future. It is the responsibility of the pediatric nurse to identify nutritional problems that may be caused by the attitudes and behaviors of the parents in the early stages and to make the necessary interventions. In this study, it was intended to determine the maternal attitudes of children in the feeding process.
Methods: This research was conducted between July 2019 and September 2019 as an identifier with mothers with children between 9 months and 72 months who applied to Saltuklu ASM, ibn Sina ASM and Dadashkent ASM in Aziziye district of Erzurum province. As a method of sampling selection; data were collected by random sampling methods, which are one of the stratified and improbable sampling methods. In this study, parent and child identifiable information form prepared in line with the literature as a data collection tool and the Nutrition Process Maternal Attitudes Scale were used. Ethical principles were observed in the study.
Results:
The mothers who participated in the study were 30.64±5.43 years old, 57% had normal BKI, 33.5% gave their baby food before starting additional food, an average of 5.71±1.08 months started supplementary food, and only 24% received nutritional training. determined. When the attitudes of mothers towards nutrition are examined; trying to feed more fruits and vegetables to his child and trying to increase his fiber intake. It was found that mothers received an above-average score of 72.65±28.60 from the Maternal Attitudes Scale. On the attitudes of mothers' feeding process; the presence of people other than the mother who feeds the child, the support of the baby, the place where the food is fed, the nutritional education, the age of the mother and father, the changes in the birth weight of the baby were found to be effective. ($p<0.05$).
Conclusion: As a result of the study, the average nutritional attitude score of mothers was not at the desired level, the need to develop emerged and it was determined that many variables were effective on nutritional attitude. It is recommended to plan studies that increase the knowledge and awareness of mothers for infancy and childhood nutrition and take into account the factors that are effective on nutritional attitude.
Keywords: Nutrition, attitude, mother, child, nursing.

Introductıon

Nutrition is the most basic need for babies to survive and is the main focus of the first months of the parents, equipped with the urge to keep them alive (1). There are interplay of environmental, social, medical and psychological factors in the emergence of nutritional problems, and this usually has a complex effect. (2). The relationship between mother and child eating and feeding begins in the womb and this relationship is carried to the home and social environment and continues with the baby adapting to this environment. (3). If nutrition is not sufficient and balanced in childhood, it may pave the way for significant health problems and chronic diseases in the future. Unhealthy eating habits, especially obesity,

diabetes mellitus, can cause cardiovascular diseases (4). Therefore, it is the responsibility of the pediatric nurse to identify the nutritional problems caused by both the child and the attitudes and behaviors of the parents in the early stages and to make the necessary interventions. Although a limited number of studies state that parental behavior has an effect on the nutritional behavior of the child, it is important to present this with valid and reliable measurement tools. In this study, it was intended to determine the maternal attitudes in the feeding process of children by means of up-to-date measurement tools.

Methods

Type of Research

Type of research This research was conducted in cross-sectional and descriptive type between July 2019 and September 2019.

The Universe and Sampling of Research

The study group of the study; Saltuklu ASM, ibn Sina ASM and Dadashkent ASM in Aziziye district of Erzurum province for the purpose of education, care, healthy child monitoring examination or vaccination were formed mothers. As a criterion for inclusion in the study; Known (diagnosed) in his medical history from birth to date between 9 months and 72 months; systemic, metabolic, gastroenteralogic, anatomical (structural), genetic, neurological, psychological, mental or developmental disease or health problem, the baby's gestational age (gestational week) is 37 weeks or higher and at normal weight being born (birth weight of 2500-4000 g) orally nutrition and no nutritional allergy, living in the same house with her parents, volunteering to participate in the study and filling the data collection tools in full. Sample size was calculated by G-Power analysis. 95% confidence when 354 mothers were included in the study as a result of the analysis.

Data Collection Tool

In this study, parentand child identifiable information form and nutrition process maternal attitudes scale prepared in accordance with the literature as a data collection tool were used.

Introductory Information Form: In this form, mothers are the demographic features; age, height, weight, body mass index, education level, spouse's education level, marital status, whether the mother and father work, how many children they have in terms of parenting characteristics, physical characteristics of their child, breastfeeding time, nutritional status and shape, who are the caregivers of the child and how they provide care were questioned.

Mother’s Attitudes Towards the Feeding Process Scale: It is a scale that evaluates the feelings, thoughts and approaches of mothers who have children between 9 months and 72 months developed by Mute and Mountain. Scale; "Negative Mood During Meals" consists of five sub-dimensions and 27 substances called "Attitudes regarding Inadequate/Unbalanced Nutrition", "Negative Feeding Strategies", "Forced Feeding", "Reaction to The Opinion of Others". The scale does not have a cut score. Cronbach Alpha for the scale is stated as 0.91. The Cronbach Alpha value obtained from this study was determined as 0.96.

Data Collection: The research data were collected by researchers in institutions and organizations where the research was conducted. Questionnaires were filled out in the nurse's room when the mothers stated that they were suitable. For the purpose of reducing side-by-side and biased statement, data has been requested to be filled in individually. The data collection time took an average of 10 minutes.

Evaluating Data

SPSS 22.00 package program was used in data analysis. The conformity of the data to normal distribution was analyzed by Kurtosis and skewness multiples and nonparametric tests were used in the analysis of the data that matched the normal distribution and nonparametric tests in the analysis of non-normal non-distributiondata.

Ethical Dimension

For the execution of the study, written permission was obtained from the Ethics Committee of İstanbul Medeniyet University Institute of Health Sciences and from the institution where the study was conducted. The mothers involved in the sampling were given verbal permission by making the necessary explanations and the data were collected on a voluntary basis.

Results

In the study, it was found that mothers were 30.64±5.43 years old, fathers were 34.63±5.32 years old, 57% of mothers had a body mass index between 18-25 years old, 73.5% of mothers were housewives, 92% lived in the core family, and 33.5% started to breast feed their babies before supplementary food. Compared to the Scale of Maternal Attitudes in infancy and early childhood nutrition process with some features belonging to mothers; the age of mother and father, the birth weight of the baby, the presence of persons other than the mother who feeds the child, the condition of receiving support to the child, the place where the child is fed, the nutritional education status was determined to have an effect on maternal attitudes (p.0.05). In the study, it was determined that mothers received an average score of 72.65±28.60 from the Maternal Attitudes Scale of the Infant and Early Childhood Nutrition Process.

Table 1. Comparison of some attitudes of mothers towards nutrition and mean scale points

Mothers' Attitudes	Number	%	X±SS	Test and p
Trying to eat more fruit	198	99.0	72.65±28.60	U=20.500 p=0.029
Trying to increase fiber intake	186	93.0	73.11±28.66	U=1194.500 p=0.607
Try to increase vegetable intake	196	98.0	73.25±28.55	U=143.000 P=0.030
Trying to eat more fish	137	68.5	73.21±27.82	t=0.405 p=0.686
Trying to avoid butter consumption	32	16.0	62.68±25.60	t=2.170 p=0.031
Trying to reduce fat intake	35	17.5	63.60±25.95	t=2.079 p=0.039
Trying to reduce meat consumption	24	12.0	61.45±29.03	U=1493.000 P=0.020

* Multiple options are selected.

In the study, "mothers trying to eat more fruits, trying to increase vegetable intake, trying to avoid butter consumption, trying to reduce fat intake and trying to reduce meat consumption" and "Infancy and Early Childhood Nutrition Process Maternal Attitudes Scale" was determined to have a statistically significant difference ($p<0.05$).

References

1. *Doğan DG, Ertem İÖ. Bebeklik ve Erken Çocukluk Döneminde Yeme Sorunları. Ertem, İ.Ö. (Editör).Gelişimsel Pediatri. Ankara: Çocuk Hastalıkları Araştırma Vakfı, 2005.*
2. *Hergüner S, Gökçe S, Gökçay G. ve Tüzün, D.Ü. Bebeklik Anoreksisi: Tanıdan Tedaviye.Çocuk ve Gençlik Ruh Sağlığı Dergisi, 2007; 14 (1), 38-47.*
3. *Erden G, Üstün B. Bebeklik ve Çocukluk Döneminde Yeme Sorunları: Beslenmede İlişkinin Önemi. Aysev, A.S. ve Taner, Y.I. (Editörler).Çocuk ve Ergen Ruh Sağlığı ve Hastalıkları. Ankara, 2007.*
4. *Barbosa Filho VC, de Campos W, Lopes Ada S. Epidemiology of physical inactivity, sedentary behaviors, and unhealthy eating habits among Brazilian adolescents: a systematic review. Cien Saude Colet. 2014;19(1):173-93.*

FT19

Determination Of Knowledge, Thought And Attitudes Of Mothers For Childhood Immunization

Esra BAĞLI[1], Doç. Dr. Sibel KÜÇÜKOĞLU[2]

[1] Selcuk University Institute of Health Sciences, Department of Nursing, Konya, Turkey

[2] Selcuk University Faculty of Nursing, Department of Child Health and Diseases Nursing, Konya, Turkey

Aim:
This study was conducted to determine the knowledge, thoughts and attitudes of mothers about childhood immunization.
Methods: The universe of the descriptive type study was created by mothers with children between the ages of 0-2 who were admitted to the child for any reason in the children's services and neonatal intensive care unit of Selcuk University Medical Faculty Hospital. In the study, the sample size was determined as a result of the power analysis. The study was carried out with 176 mothers by random sampling method. The data were collected using the data collection form and the Vaccine-related Community Attitude-Health Belief Model Scale. Ethical principles were observed during the investigation.
Results:
It was determined that 12.3% of the mothers who participated in the study found vaccines harmful and 91.3% trusted vaccines. The scale lower size scores (except for the perceived obstacle subsize) of mothers who found vaccines harmful were found to be significantly lower. In addition, mothers who thought that vaccination should be mandatory and mothers who thought that vaccination should not be left to parental request, the social attitude-health belief model scale on the vaccine was determined to have significantly higher score averages. ($p<0.05$).
Conclusion:
As a result of the study, it was determined that the average health responsibility and perceived benefit score scoring was higher in the sub-dimensions of the Vaccine-related Community Attitude-Health Belief Model scale. Some thoughts about vaccines were found to affect attitudes about vaccines. In order to reduce the negative attitude towards vaccines, it is recommended that parents intensify awareness efforts.

Keywords: *Immunization, vaccination, vaccine rejection, pediatric nurse.*

INTRODUCTION

Every year, three million people, mostly children and infants, die from vaccine-preventable diseases. (1). 1.5 million deaths can be prevented each year by expanding the scope of global vaccination. (WHO 2018a). Vaccine-preventable diseases still present as important problems today and there are still a number of obstacles to immunization (3).
Communication and media tools, opinions of people and lobbies influential in the community, parents' educational status, number of children, past vaccination experiences, awareness and knowledge about vaccination, fear of the side effects of vaccination, health system experiences and access to vaccination affect parents' vaccination acceptance. The rate of vaccination with paid vaccinations is lower than in routine vaccines (4,5). Lack of information and the belief that misinformation, fear, insecurity and vaccination are unnecessary are an obstacle to vaccination (6). It is obvious that vaccination rejection will cause a serious public health problem. In our country, the number of studies for vaccine rejection is quite

insufficient. For this reason, it is planned to reveal the knowledge and attitudes of mothers giving primary care to children regarding immunization. Determining their knowledge and attitudes about how to vaccinate mothers will be a guide for the initiative and educational practices for vaccination.

Material and Methods

This study is a descriptive study planned to determine the knowledge, thoughts and attitudes about childhood immunization of mothers with children aged 0-2 years.

The Universe of Research

The research is planned to be carried out in the children's services of a university hospital in the city center of Konya. There are three modules of patient service, pediatric emergency room, pediatric intensive care unit and neonatal intensive care unit. The universe of the study is made up of mothers with children between the ages of 0-2 who are hospitalized for any reason in children's services and neonatal intensive care unit. In this study, random sampling method was used from improbable sampling methods.

Sample Size

Power Analysis method was used according to the referenced source (7) to determine the sample size. When sampling 220 people were taken, it was determined that the magnitude of the study was 95% with a 95% confidence interval and the magnitude of the study was 0.3% statistical power with a margin of error of 0.05. The study is ongoing and the data is calculated out of 176 people.

Sample Selection Criteria

Open to communication and cooperation,

Stable condition of baby/child,

Baby/child in 0-2 age group

Data Collection Techniques and Tools

In the study, data collection tool including socio-demographic characteristics and information, thoughts and practices for childhood vaccines, data collection form and Vaccine-related Community Attitude - Health Belief Model Scale used.

Data Collection Form

The data collection form created by the researchers consisted of 17 questions. 8 of the questions question socio-demographic characteristics, 5 of them question information and practices for childhood vaccines. There are also 4 questions that question mothers' thoughts on childhood vaccinations.

Community Attitude on Vaccine - Health Belief Model Scale Scale

It is a likert scale developed by Canbolat and Tanyer at 2018. Scale evaluation cannot be made on the total score. The lower dimensions of the scale, which has a five-dimensional and five-likert response, are all evaluated separately. (8). Cronbach Alpha was rated 0.89 as a result of the test, which was conducted fifteen days apart on 26 items on the scale. The Cronbach Alpha value from this study was 0.81.

Data Collection

Data collected by the researcher between 15.04.2019/15.05.2019, and data collection is still ongoing. Data collection forms are collected by face-to-face interview method. The data were visited by mothers researchers every weekday; Taking into account clinical routines outside of treatment and care hours, mothers were collected in the patient's room at the appropriate times.

Data Analysis

SPSS 21.00 package program was used in data analysis. The conformity of the data to normal distribution was analyzed by Kurtosis and skewness multiples and nonparametric tests were

used in the analysis of the data that matched the normal distribution and nonparametric tests in the analysis of non-normal non-distributiondata.

Ethical Dimension

For the execution of the study, written permission was obtained from the Ethics Committee of Selcuk University Institute of Health Sciences and from the institution where the study was conducted. The mothers involved in the sampling were given verbal permission by making the necessary explanations and the data were collected on a voluntary basis.

RESULTS

The mean age of the mothers surveyed was 29.6±6.1 years, 43.8% had primary education, 75.3% were housewives and 36.3% had 2 children. When the perceptions of the economic situation of mothers were examined, it was determined that the majority of mothers stated their economic situation as moderate (64.0%), while the majority of the spouses (35.2%) were educated at primary level.

When the information, practices and thoughts of mothers for childhood vaccinations are examined; it was determined that the majority of mothers (85.6%) received information about vaccines, first indicated midwife-nurse (72.2%) as the source of their preference for information, followed by a doctor (13.6%) and then the Internet (10.2%). 11% of mothers. 9 of them had their children vaccinated outside the routine vaccination schedule, and the most mothers of paid vaccinations had their children vaccinated rotavirus (n=10). 97.7% of mothers stated that their baby would get all the vaccinations, 11 (6.3%) mothers answered yes to the question of whether there was an undone vaccine. In addition, 32.2% of mothers think that vaccines are side effects, 12.3% of vaccines are harmful, 73.3% should be required to get vaccinated, and 33.5% of them should be left to the wishes of parents. 8.7% (n=15) of the mothers who participated in the study stated that they did not rely on vaccinations in the vaccination calendar.

Mothers' Vaccine-Related Community Attitude-Health Belief Model scale sub-dimensions of Health Responsibility (19.89±3.66) and Perceived Benefit (19.40±3.72) points averages were found to be higher (Table 1).

Table 1. Vaccination-related Community Attitude Scale - Distribution of Health Belief Model Score Averages

Vaccine-related Community Attitude Scale - Health Belief Model Scale	$\bar{X} \pm SS$	MİN-MAX	Median (IQR)
Perceived Seriousness	15,92±3,14	4-20	16,00(2,75)
Perceived Importance	15,20±3,23	4-20	16,00(2,75)
Perceived Benefit	19,40±3,72	5-25	20,00(3,00)
Perceived Obstacle	18,96±5,97	8-37	18,00(6,00)
Health Responsibility	19,89±3,66	5-25	20,00(3,75)

In this study, demographic characteristics of mothers and AITT - Health Belief Model Scale score averages were compared. Maternal age does not affect lower size scores, but it is not the same as the lower size scores. mother's educational status had an impact on the perceived seriousness sub-dimension, primary and high school graduate mothers' scores were similar, while the scores of mothers with a degree in university were significantly higher. While the working status of mothers affects the perceived severity and perceived importance sub-dimension, it was observed that the points hydrangeas of working mothers were significantly higher than the housewives ($p<0.05$). There was a statistically significant difference between the number of children of the mother and the perceived severity and health responsibility sub-dimensions ($p<0.05$).

Compared to the vaccination practices and lower size scores of mothers, mothers who are considering taking all vaccinations in the vaccination calendar have a significantly higher score average for the lower dimension of health responsibility and have a positive attitude (p.0.05). Outside the routine vaccination schedule, the score medians for the health liability sub-size of mothers who have been vaccinated are significantly higher (p.0.05). Mothers who indicate that they will not be vaccinated have a significantly lower average of perceived seriousness, perceived benefit, perceived disability and health responsibility score and appear to have a negative attitude (p.0.05).

Perceived severity, perceived benefit and perceived disability sub-dimensional scores of mothers who think they are a side effect of vaccines are statistically significant (p.0.05). Mothers who think that vaccines have a side effect have a negative attitude. The scores of mothers who think vaccines are harmful are statistically significant in all sub-dimensions and they appear to have a negative attitude (p.0.05).

It was determined that mothers who wanted childhood vaccinations to be mandatory had significantly higher scale scores than mothers who did not want them to be mandatory (p.0.05). Mothers who do not want vaccinations to be mandatory have a negative attitude in four sub-dimensions, while mothers who are unstable in the lower dimension of disability seem to have a negative attitude. The scale lower size scores of mothers who want vaccinations to be left with parental consent are significantly lower compared to mothers who do not want to be left with parental consent ($p<0.05$).

CONCLUSION

In our study, the proportion of mothers who thought that vaccines had side effects was 32.2%, and the proportion of mothers who thought they were harmful was 12.3%. Similar studies stated that 7.6% of families had a side effect related to the vaccine, and in the oral polio vaccination campaign, 21.1% of the family rejected the vaccine on the grounds that it was harmful; in another study, 27.1% of the study participants stated that they did not get vaccinated because they did not rely on the route virus vaccine. (5). The data and study results show that there is a trust problem with vaccines. As a matter of fact, 8.7% of mothers stated that they did not rely on vaccines.

73.3% of the mothers participating in our study think that vaccination should be compulsory, and 33.5% of the mothers and fathers should be left to their wishes. In Turkey in 2015, the prosecutor who won the case by not vaccinating their twin babies, the father then increased awareness of the families and began not to get vaccinated with parental consent. In response to rapidly increasing vaccination denial, the Turkish Medical Association submitted to the Turkish Parliament a proposed amendment stressing the necessity of vaccinations. (9)

When we compared socio-demographic data with the sub-dimensions of the AITT - Health Belief Model Scale, it was found that university graduate mothers exhibited a significantly positive attitude in the lower dimension of seriousness compared to other school graduates. Gulgun et al. (2014) study has shown that gender, spouse's educational status and economic status do not affect vaccination (10). Another study found that the rate of vaccine rejection increased in mothers with high socioeconomic levels (11).

In our study, the proportion of mothers who reject vaccines, who think their vaccines are harmful and who say they do not trust vaccines is quite high. It has been found that mothers who have a negative attitude towards vaccines are mothers who find vaccines harmful and do not rely on vaccines. Mothers who had all the vaccinations of the child or who had paid vaccinations were found to have a positive attitude towards vaccinations.

References

1- *Macintosh JL, Eden LM, Luthy KE et al. Global Immunizations: Health promotion and disease prevention worldwide. MCN: The American Journal of Maternal/Child Nursing, 2017; 42, 3, 139-45.*
2- *WHO, 2018a. Immunization coverage. Erişim tarihi,12 Kasım 2018. Erişim adresi, https://www.who.int/en/news-room/fact-sheets/detail/immunization-coverage*
3- *Alruwaili AAS, El-fetoh NMA, Alruwaili TAS, et al. Knowledge, attitude and practice of the parents regarding child vaccinations in arar, Northern Saudi Arabia. Egyptian Journal of Hospital Medicine, (July 2018; 72(9): 5178-82.*
4- *Argüt N, Yetim A, Gökçay EG. The factors affecting vaccination acceptance. J Child, 2016; 16(1-2):16-24.*
5- *Erdem Ö, Toktaş İ, Çelepkolu T, Demir V, 2017. he Characteristics of Families who rejected Vaccination during the Mop-up Oral Polio Vaccination Campaign and Their Reasons of Rejection: A Family Health Center Experience. Konuralp Medical Journal, 2017; 9, 1, 19-3.*
6- *Bhat-Schelbert K, Lin CJ, Matambanadzo A, Hannibal K, Nowalk MP, Zimmerman RK, 2012. Barriers to and facilitators of child influenza vaccine - perspectives from parents, teens, marketing and healthcare professionals. Vaccine, 30, 14, 2448-52.*
7- *Ilah BG, Sakajiki AM, Musa A, Edem B, Adelakun MB, Adeniji AO, Kaura NB. Immunization and socioeconomic status of children 12-59 months attending a specialist hospital, Gusau, Nigeria, Gusau, Nigeria. Ann Trop Med Public Health 2015;8:23-7*
8- *Canbolat KS. Kentsel bölge toplumunun çocukluk çağı aşılarına yönelik tutumlarının sağlık inanç modeline göre değerlendirilmesi. Yüksek Lisans Tezi. Selçuk Üniversitesi Sağlık Bilimleri Enstitüsü, Konya, 2018.*
9- *TTB, 2018. https://www.ttb.org.tr/haber_goster.php?Guid=15ecd2f0-449d-11e8-b46f-14b550714509. Erişim tarihi:30.05.2019*
10- *Gülgün M, Fidancı K, Karaoğlu A, Güneş Ö, Kesik V, Altun S, Babacan O, Saldır M. Investigation of 0-24 months vaccination status in children applied to pediatric outpatient cliniz in a military hospital. . Gulhane Medical Journal, 2014; 56: , 1.*
11- *Reich JA, 2018. "We are fierce, independent thinkers and intelligent": Social capital and stigma management among mothers who refuse vaccines. Social Science & Medicine.1-9.*

FT20

Comfort in Premature Babies

Esra BAĞLI[1] Doç. Dr. Sibel KÜÇÜKOĞLU[2]

[1] Selcuk University Institute of Health Sciences, Department of Nursing, Konya, Turkey

[2] Selcuk University Faculty of Nursing, Department of Child Health and Diseases Nursing, Konya, Turkey

ABSTRACT

Objective: Comfort; sadness, boredom, non-anxiety as a condition of the Turkish Language Institution's Dictionary. The concept of comfort has become a frequently talked about concept for premature infants and neonatal intensive care units since Kolcaba defined comfort and developed its theory. Premature infants must remain in intensive care units during the period when they need to be present in a safe intrauterine environment. Neonatal intensive care units are areas where premature babies are treated and treated as necessary, as well as where there are many painful procedures and procedures that will disturb the comfort of the baby and where there is an inappropriate environment. The aim of this review is to present the concept of comfort in prematures in the light of current information.

Methods: This descriptive study was conducted between June and October 2019 using the scanning method and document review technique. National (Hacettepe University Libraries, Turkish Medline and Ulakbim Journalpark, National Thesis Center) and international ("Web of Science", "Science Direct" and "Pub-Med", "Web of Science") databases were scanned.

Keywords *"Comfort", "Comfort", "Premature", "Newborn" were scanned in Turkish and*

Results:

Environmental stimuli such as sound, heat, light and noise in neonatal intensive care units, as well as deterioration of the usual order, frequent touch, NGS feeding, painful interventions (heel blood removal, vascular opening and intubation, etc.) for premature is a major source of discomfort. As soon as possible, the ready baby should switch to oral nutrition. In order not to divide sleep, light adjustment, day-night periods are created, care scans are performed outside of sleep time and eye pad use is one of the applications that will increase comfort. Premature massage application and contact with the mother to the skin increases the comfort of the premature. Touching the skin increases the commitment of the mother and baby, strengthening the sense of trust. Positioning, aromatic fragrance sniffing, sweet solutions, breastfeeding, pacifier ingestion and massage applications have been found to reduce pain and increase comfort in the newborn. Heat, light and noise control in neonatal units increases the comfort of the newborn. Adjustable and not-too-bright light usage, reducing monitor light and sound, staff speaking in low voice, covering incubators are applications that can be made.

Conclusion: An intensive care nurse is the only person who can provide the baby's comfort with holistic care. Many practices performed by nurses will increase the comfort of prematures and will ensure that their development is positively affected. Therefore, it is necessary to raise awareness of nurses working in intensive care and to encourage practices to take care of the comfort of the baby.

Keywords: *Comfort, premature, newborn, nurse.*

Introduction

The word comfort derives its origin from French and means material comfort, which makes everyday life easier for Turkish. Comfort, on the other hand, has been included in the Dictionary of the Turkish Language Association as a state of sadness, boredom and non-anxiety. (1) Since the Neonatal Intensive Care Unit (ICU) is an environment where there are many disturbing factors unlike intrauterine life for newborn babies, the concept of comfort is a frequently discussed topic for ICU and newborns. (2).

COMFORT CONCEPT AND THEORY

The concept of comfort; After being analyzed by Katharine Kolcaba, he developed the theory of comfort in 1994. In the theory, comfort is defined as "an expected result with a complex structure in physical, psychospspiritual, social and environmental integrity in relation to the individual's needs, providing peace and overcoming problems" (3, 4).

Kolcaba examined the concept of comfort in two taxonomic structures. Kolcaba, stage one; has determined the comfort levels according to the condition in which individual comfort needs are met. These levels include; relief, relaxation and superiority. In the second stage, it formed the dimensions of comfort based on holistic vision. Comfort dimensions; physical, psychospispiritual, environmental and sociocultural dimensions (5)

Comfort In Premature Babies

Premature babies are obliged to spend the most sensitive and critical periods of their lives in the intensive care unit. Intensive care units contain many factors that affect the comfort of patients and their relatives. However, if intensive care nurses know the effect of comfort and comfort in intensive care units, they can offer a care that increases the comfort of patients and their relatives with holistic vision (6).

Initiatives for Comfort in Premature Infants

1. Nutrition

Many functions of premature babies should be fed enterally with orogastric tube due to reasons such as immature, inability to provide organization between absorption, swallowing and breathing. Since probe nutrition delays the development of motor functions, oral feeding should be switched to the shortest and safest time. Changes in nutrition affect the physical comfort of the patient (7).

2. Sleep

After intrauterine period, ICU's are a very noisy and complex environment for newborns. Maintaining night-day order in intensive care units, bringing high light and sound level to appropriate standards, performing baby massage, giving suitable position, covering incubators, using eye patches, maintaining outside of sleep hours and ensuring sleep patterns contributes positively to the growth and development of the baby (8).

3. Massage Application

The first sense that communicates with the baby's environment is touch. While touch is important in perceiving the environment in infancy, it is very well developed in the newborn with forehead, tongue, lips and ear (9). Massage shows the effect of increasing blood and lymph circulation, relaxation of muscles and enlargement of arterioles. Massage provides comfort by providing a general state of rest Massage application increases the relationship between mother and baby, reduces the stress of the baby, maintains sleep patterns, supports growth and reduces the length of hospital stay. In cases where the massage is not performed by the mother, massage has the same effect in infants; increases communication with the mother and the environment (10).

4. Mother-Infant Attachment

Bonding is a relationship that is often emotional. This relationship, which begins during the neonatal period, seriously affects all the developmental areas of the baby throughout life and continues to have an effect throughout life. The mother's speech to her baby, touching and touching the skin, encouraging, encouraging and informing the mother of participation in baby care increasematernal maternal-infant commitment is one of the applications (11).

5. Kangaroo Care

Kangaroo care provides skin contact between mother and baby immediately after birth. With this method, the mother and the baby begin as the mother and the baby are adapted to the outside world with maternal heart tone, breath and body temperature. With maternal and infant commitment, feelings of happiness, trust and peace develop and mother and baby calm down. No preparatory preparation is required for the method, it is cost-effective and high-quality maintenance. (12,13)

6. Pain Relief

Probe and catheter placement procedures, aspiration, lack of proper position and other painful procedures adversely affect the child's comfort in intensive care units. Breastfeeding, positioning, providing skin-to-skin contact, maternal heart tone, massage, giving pacifier or sweet solutions, smelling aromatic odors are effective methods in the baby. (14)

7. Non-Nutritious Absorption

Non-nourishing absorption, which has a relaxing and soothing effect on the baby, is used to accelerate the transition of the baby to the mother's breast or bottle by improving the suction behavior. Non-nutritious absorption calms the baby, facilitates the transition to sleep and reduces the length of hospital stay (15).

8. Music Reclusive and Lullaby

Music and music therapy has been used in many fields over the years. Music therapy can be used to improve therapeutic, palliative or quality of life and to relieve disturbing symptoms. Music is also used because of the benefits of ICU's such as reducing stress and pain, facilitating the transition to sleep, facilitating the transition to nutrition, increasing oxygen saturation and stabilizing the heart peak and reducing the length of hospital stay (16).

Listening to lullaby improves maternal and infant commitment while positively improving language development, cognitive and psychosocial development in infants. Listening to a lullaby calms the baby, reduces stress, increases nutrition and absorption, relieves pain and contributes to respiration. Mothers can convey their feelings and love to babies by singing lullaby. (17)

Strategies for Improving Baby Comfort in Intensive Care Units

1. Ensuring Environmental Sound and Light Control

NICU are noisy and luminous environments with high-equipped medical devices, machines that can make high noise such as monitors, ventilators and infusion devices. Improper sound and light adversely affect the comfort of the premature. Creating the day and night cycle, bringing medical devices to the appropriate volume, staff speaking in a low voice, covering the incubators are applications that will increase the baby's comfort. In intensive care units, the light should not be too bright, the patient should have light per head and other patients should not be affected by the reflections of light. The light used must be adjustable (18).

2. Ensuring Hygiene Control

The neonatal period is a period of greater life-threatening life. Intensive care units should have hand washing areas, dirty and clean storage, negative pressure ventilation, insulation rooms to prevent infections. All materials in the unit must be suitable for frequent cleaning. (19)

3. Odor Control

Premature babies are known to increase the adaptation of pleasant and familiar scents, reduce apnea and calm down, and increase attachment and comfort. Unpleasant odors such as alcohol, disinfectant and flaster create negative experiences in infants, creating negative physiological effects and stress. Reducing these odors is one of the applications that can increase the comfort of the baby (20).

Results

An intensive care nurse is the only person who can provide the baby's comfort with holistic care. Many practices performed by nurses will increase the comfort of prematures and will ensure that their development is positively affected. Therefore, it is necessary to raise awareness of nurses working in intensive care and to encourage practices to take care of the comfort of the baby.

Kaynaklar

1. *Türk Dil Kurumu. https://sozluk.gov.tr/ Erişim Tarihi: 15.11.2019.*
2. *Kahraman A, Başbakkal Z, Yalaz M, 2014. Turkish validity and reliabılıty of comfortneo scale International Refereed Journal of Nursing Researches Uluslararası Hakemli Hemşirelik Araştırmaları Dergisi, 2014; 1(2): 1-11.*
3. *Kolcaba KY, 1994. A theory of holistic comfort for nursing. Journal of Advanced Nursing, 19, 1178-84.*
4. *Karabacak Ü, Acaroğlu R, 2011. Konfor kuramı. Maltepe Üniversitesi Bilim ve Sanat Dergisi, 4, 1, 197-202.*
5. *Kolcaba K, Kolcaba R, 1991. An analysis of the concept of comfort. Journal of advanced nursing, 16, 11, 1301-10.*
6. *Sarı HY, Çiğdem Z. Gestasyon Haftalarına Göre Bebeğin Gelişimsel Bakımının Planlanması. Dokuz Eylül Üniversitesi Hemşirelik Fakültesi Elektronik Dergisi, 2013; 6, 1, 40-8.*
7. *Aykanat GB, Gözen D. Preterm Bebeklerde Oral Beslenmeye Hazır Oluşluğun Değerlendirilmesi. Turkiye Klinikleri Hemsirelik Bilimleri, 2017; 9, 4, 326-36.*
8. *Küçük S. Yenidoğan yoğun bakım ünitelerinde kaliteli uyku. DEUHFED, 2015,8(3),214-217.*
9. *Güleşen A, Yıldız D. Investigation of Maternal-Infant Attachment in The Early Postpartum Period With Evidence Based Practice. TAF Prev Med Bull 2013;12(2):177 -182*
10. *Degirmen N, Ozerdogan N, Sayiner D, Kosgeroglu N, Ayranci U. Effectiveness of foot and hand massage in postcesarean pain control in a group of Turkish pregnant women. Applied Nursing Research, 2010; 23, 3, 153-8.*
11. *Akarsu RH, Tunca B, Alsaç SY.. Anne-bebek bağlanmasında kanıta dayalı uygulamalar. Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi, 2017; 6(4): 275-279.*
12. *Güler E, Ateş NA, Küğcümen G.. Kanguru Bakımının Düşük Doğum Ağırlıklı Ve Prematüre Yenidoğana Etkileri. Cumhuriyet Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi, 2019; 4, 2, 1-5.*
13. *Günay U, Coşkun D. Kanguru Bakımı Uygulaması Başlatılan Bir Yenidoğan Yoğun Bakım Ünitesinde Yenidoğan Ekibinin Gözlem, Görüş ve Deneyimleri: Nitel Bir Araştırma. J Pediatr Emerg Intensive Care Med 2019;6(2):85-90*
14. *Aydın D, İnal S. Effects of breastfeeding and heel warming on pain levels during heel stick in neonates. International Journal of Nursing Practice 2019: E12734.*
15. *Eras Z, Atay G, Şakrucu ED, Bingöler EB, Dilmen U. Yenidoğan yoğun bakım ünitesinde gelişimsel destek. Şişli Etfal Hastanesi Tıp Bülteni, 2013; 47, 3, 97-103.*
16. *İmseytoğlu D, Yıldız S. Yenidoğan Yoğun Bakım Ünitelerinde Müzik Terapi. Florence Nightingale Hemşirelik Dergisi, 2012; 20(2): 160-5.*

17. *Karaca S, Öngün E. Ninnilerle Büyümek. JAREN/Hemşirelik Akademik Araştırma Dergisi, 2017; 3(1): 28-32.*
18. *Güven ŞT, Dalgıç Aİ. Prematüre Yenidoğanlar İçin Geliştirilmiş Bireyselleştirilmiş Destekleyici Gelişimsel Bakım Programı. Uluslararası Hakemli Kadın Hastalıkları ve Anne Çocuk Sağlığı Dergisi, 2017; 9, 42-61.*
19. *Salihoğlu Ö, Akkuş CH, Hatipoğlu S. Yenidoğan Yoğun Bakım Ünitesi Standartları Bakırköy Tıp Dergisi 2011;7:45-51*
20. *Kanbur BN, Balcı S. Preterm Yenidoğanlarda Koku. Sağlık Bilimleri ve Meslekleri Dergisi, 2017; 4(3): 272-6.*

11-17 Yaş Arası Ergenlerde İnternet Bağımlılığı Ve Video Kanallarının Takip Edilmesinin İncelenmesi

Azime Altınova, Serap Daşbaş, Nur Feyzal Kesen

Selçuk Üniversitesi Sosyal Hizmet Anabilim Dalı, Selçuk Üniversitesi Sağlık Bilimleri Fakültesi, Selçuk Üniversitesi Sağlık Bilimleri Fakültesi, Konya, Türkiye

Özet

Bu araştırmanın amacını 11-17 yaş arası ortaokul ve lise çağındaki ergenlerde internet bağımlılığı ve internet bağımlılığında yeni bir boyut olan video kanallarının ergenlerin internet bağımlılığına etkisinin incelenmesi oluşturmaktadır. Bu bağlamda cinsiyet, yaş, yaşadığı sorunları ailesiyle paylaşma, ergenlerin duygularını dışa vurma, duygularını dışa vurma, sigara kullanımı değişkenlerinin internet bağımlılığıyla ilişkisi ortaya konulmak istenmiştir. İlişkisel tarama modelinin kullanıldığı araştırmada 2017-2018 eğitim-öğretim yılında Kayseri, Konya, Yozgat illerinde lise ve ortaokulda öğrenim gören 579 öğrenciye (219 erkek, 360 kız) 33 sorudan oluşan anket ve İnternet Bağımlılık Ölçeği uygulanmıştır. Elde edilen araştırma verileri frekans, anova ve t testi ile analiz edilmiştir.

Araştırmanın sonuçlarına göre incelenen değişkenlerin ve izlenen video kanallarının internet bağımlılığı üzerinde etkili olduğu görülmüştür. Erkek öğrenciler kız öğrencilere göre; sigara kullanan öğrenciler sigara kullanmayanlara göre; yaşadığı sorunu ailesiyle paylaşmayan ergenlerin yaşadığı sorunu ailesiyle paylaşanlara göre internet bağımlılığı daha yüksektir. Ergenlerin duygularını dışa vurması internet bağımlılığını azaltmaktadır. Araştırmada elde edilen sonuçlar paylaşılmış ve yapılacak yeni araştırmalara yönelik öneriler sunulmuştur.

Anahtar Kelimeler: Ergen bireyler, internet bağımlılığı, video kanalları,

Abstract

The aim of this study is to investigate the effects of internet addiction and video addiction, which is a new dimension in adolescents aged 11-17 years, in the secondary and high school ages. In this context, gender, age, sharing problems with family, expressing emotions of adolescents, expressing emotions, smoking relationship were aimed to put forward relationship with internet addiction. In the study, which was used in the relational screening model, 579 students (219 boys, 360 girls) in Kayseri, Konya and Yozgat provinces in the 2017-2018 academic year were administered a questionnaire consisting of 33 questions and an Internet Addiction Scale. The obtained data were analyzed with frequency, anova and t test.

According to the results of the study, it was observed that the variables examined and the video channels were influenced on internet addiction. Male students compared to female students; smoking students compared to non-smokers; adolescents who do not share their problems with their families are more likely to have internet addiction than those who share their problems with their families. Expressing emotions of adolescents reduces internet addiction. The results of the study were reported and suggestions for new researches were recommended.

Keywords: *Adolescent individuals, internet addiction, video channels,*

Giriş

Geçmişten günümüze insan yaşamı sürekli değişmektedir. İnternet de bu değişimle birlikte hayatımıza girmiş ve bilgi, eğlence, iletişim gibi farklı konularda sunduğu çeşitlilik ve bu konulara ulaşımda sağladığı kolaylıkla kullanımını sürekli arttırdığımız bir unsur haline gelmiştir.

Türkiye İstatistik Kurumu (TÜİK) araştırma sonuçları da bu düşünceyi destekler niteliktedir. TÜİK verilerine göre 16-74 yaş grubundaki bireylerde bilgisayar ve İnternet kullanım oranları sırasıyla %49,9 ve %48,9'dur. Bu oranlar 2012 yılında sırasıyla %48,7 ve %47,4 olmuştur. Bilgisayar ve İnternet kullanım oranları 16-74 yaş grubundaki erkeklerde %60,2 ve %59,3 iken, kadınlarda %39,8 ve %38,7'dir. Bilgisayar ve İnternet kullanımı kentsel yerleşim alanlarında %59 ve %58, kırsal yerleşim alanlarında ise %29,5 ve %28,6'dır. 2013 yılı ilk üç ayında (Ocak-Mart 2013) 16-74 yaş grubundaki tüm bireylerin %39,5'i interneti düzenli olarak (hemen her gün veya haftada en az bir defa) kullanmıştır (Eroğlu & Bayraktar, 2016).

Patolojik internet kullanımı bireyde internet bağımlılığına sebep olabilmektedir. İnternet bağımlılığı kavramı ise ilk kez Dr. Ivan Goldberg tarafından 1996 yılında gönderilen bir e-postada kullanılmıştır (Goldberg, 1996). İnternet bağımlılığı kavramının alanyazında net ve kesin bir tanımı bulunmamaktadır (Horzum & Ayas, 2013). Bağımlılık, istenilen objeye ulaşılamadığında bireye yoksunluk hissi veren her şey olarak tanımlanabilir. Son yıllarda yapılan araştırmalara göre internet bağımlılığı da bağımlılık türleri arasında yer almaya başlamıştır (Eroğlu & Bayraktar, 2016). İnternet bağımlılığı ise; internetteyken zamanın nasıl geçtiğini anlamamak, internet dışında bir sosyal yaşantıya ilginin olmaması ve gereksiz bulunması, internet geçirilen vakit sebebiyle günlük yaşantının, işlerinin aksaması ve insan ilişkilerinin zayıflaması gibi unsurları barındırmaktadır (Cengizhan, 2005).

Bireylerde internet bağımlılığı tespiti yaparken internette harcadıkları zaman tek başına bir kriter olmamakta, internette harcadıkları zamanla birlikte interneti hangi amaçla kullandıkları da değerlendirilmektedir (Günüç & Kayri, 2010). İnternetin kullanım alanı ise oldukça geniştir. Bireyler interneti dersleri için yardım almak, sınava hazırlanırken video dinlemek, araştırma yapmak gibi birçok bilgilendirici amaçla veya oyun oynamak, komik videolar izlemek, birileriyle sohbet etmek, sosyal medyada paylaşım yapmak, film izlemek gibi eğlence amaçlı kullanabilmektedir.

Son zamanlarda ise internet farklı bir amaçla kullanılmaya başlamış ve yeni bir kullanım alanı ortaya çıkmıştır. Bu alan her geçen gün popüleritesini arttırmakta olan vlog siteleridir. Vlog video yayın yapılan kanal demektir. Bu kanalların kullanıcılarına Vlogger denilmektedir. Vlogger "Video-logger" kelimelerinin birleşimden oluşmakta ve video oluşturan kişi anlamına gelmektedir. Vlogger'lar; Blogger'lar ile aynı işi yaparlar fakat içeriklerini yazarak değil kamera karşısına geçerek oluşturmaktadırlar. Günümüzde en popüler Vlog kanallarına bir e-posta adresiyle üye olup bir kanal açılabilmekte ve bunun için herhangi bir ödeme yapma şartı bulunmamaktadır (İç, 2017).

Birçok çeşidi olan vlog kanallarının arasında kullanım ağı ve popülaritesi oldukça geniş olanlar bulunmaktadır. Bu çok tercih edilen vlog kanallardan birisinin resmi basın odasının verilerine göre, kanal video yükleyen ve izleyen bir milyondan fazla kullanıcıya sahip durumdadır. Bu sayı dünyadaki her yedi kişiden birinin bu video paylaşım kanalını kullandığını göstermektedir. İşin daha dikkat çekici boyutu ise internete giren her üç kişiden birisinin yolunun bu video paylaşım kanalına düşüyor olmasıdır (https://www.yotube.com/yt/press/statistic.html).

Bir milyarın üzerindeki kullanıcı sayısı bu video paylaşım kanalını dünyanın en popüler web siteleri arasına sokmaktadır. Alexa da bunu teyit etmektedir. İnternet sitelerinin popülerliğini değerlendirip, sıralayan Alexa'ya göre Google'dan sonra dünyanın en popüler web sitesi bir video paylaşım kanalıdır (Alexa, 2017)

Bir milyardan fazla kullanıcısı bulunan video kanalı, tüm internet kullanıcılarının yaklaşık üçte biri tarafından ziyaret edilir. Kullanıcılar her gün bir milyar saatlik video izler; bu da milyarlarca izlenme anlamına gelir (https://www.yotube.com/yt/press/statistic.html).
11-17 yaş arası bireyler üzerinde yürütülen bu araştırma; ergenlerde internet bağımlılığı ve internet bağımlılığında yeni bir boyut olan video kanallarının ergenlerin internet bağımlılığına etkisini incelemiştir. Bu doğrultuda cinsiyet, yaş, yaşadığı sorunları ailesiyle paylaşma, ergenlerin duygularını dışa vurma, sigara kullanımı değişkenlerinin internet bağımlılığıyla ilişkisi ortaya konulmak istenmiştir.

Yöntem

Bu çalışma nicel bir araştırma örneği olup, araştırmada nicel araştırma yöntemlerinden ilişkisel tarama modeli kullanılmıştır. Araştırmanın çalışma grubunu 2017-2018 eğitim-öğretim yılında Konya, Kayseri ve Yozgat illerinde okuyan 579 öğrenci (219 erkek, 360 kız) oluşturmaktadır._Araştırmada veri toplama aracı olarak; araştırmacılar tarafından hazırlanan, katılımcıların sosya demografik özellikleri ve internet kullanımına ilişkin verileri içeren anket soruları ile Günüç (2009) tarafından geçerlilik ve güvenirlik çalışması yapılan İnternet Bağımlılığı Ölçeği (İBÖ) kullanılmıştır. Söz konusu ölçeğin iç-tutarlılık (Cronbach Alfa) katsayısı .94 olarak bulunmuştur. Dört alt boyutu bulunan ölçeğin alt boyutları sırasıyla; "Yoksunluk", "Kontrol Güçlüğü", "İşlevsellikte Bozulma" ve "Sosyal İzolasyon" olarak adlandırılmıştır. Ölçekten alınacak toplam puan 35 ile 166 arasında değişmektedir. Ölçekten alınan yüksek puan, internet bağımlılık düzeyinin yüksek olduğu anlamına gelmektedir (Günüç & Kayri, 2010).

Bulgular Ve Sonuç

Tablo 1: Ergenlerin Cinsiyet Değişkenine Göre İnternet Bağımlılığı Ölçeği Puanlarına Ait t Testi Sonuçları

Bağımlı değişken	Cinsiyet	N	$\overline{X}$	Ss	T	p
Yoksunluk	Erkek	219	33,4201	10,55422	2,652	,008
	Kadın	360	30,9306	11,18959		
Kontrol Güçlüğü	Erkek	219	27,0685	10,12943	1,849	,065
	Kadın	360	25,3694	11,07053		
İşlevsellikte Bozulma	Erkek	219	18,3242	7,65722	2,393	,017
	Kadın	360	16,6778	8,24395		
Sosyal İzolasyon	Erkek	219	17,3470	7,81073	2,652	,008
	Kadın	360	15,4583	8,59737		
TOPLAM	Erkek	219	96,1598	31,55317	2,732	,007
	Kadın	360	88,4361	35,22133		

*p>0.05
**p<0.001

Tablo 1'de ergenlerin cinsiyet değişkeni açısından, İnternet Bağımlılığı Ölçeği ortalamalarının anlamlı düzeyde farklılaşıp farklılaşmadığını belirlemek amacıyla yapılan bağımsız gruplar t testine göre ölçeğin üç alt boyutunda (yoksunluk, işlevsellikte bozulma, sosyal izolasyon) ve ölçeğin toplam puanında anlamlı düzeyde bir farklılaşma görülmüştür. Buna göre erkeklerin internet bağımlılığının kadınlardan daha fazla olduğu görülmüştür.

Tablo 2: Ergenlerin Yaş Değişkenine Göre İnternet Bağımlılığı Ölçeği Puanlarına Ait t Testi Sonuçları

Bağımlı değişken	Yaş	N	$\overline{X}$	Ss	t	P
Yoksunluk	11-14	348	30,9425	11,54803	2,578	,010
	15-18	231	33,2727	10,01039		
Kontrol Güçlüğü	11-14	348	24,0948	10,28973	5,395	,000*
	15-18	231	28,9004	10,79708		
İşlevsellikte Bozulma	11-14	348	15,8966	7,46486	5,130	,000*
	15-18	231	19,4156	8,46838		
Sosyal İzolasyon	11-14	348	14,2989	6,46804	6,343	,000*
	15-18	231	18,9957	9,94354		
TOPLAM	11-14	348	85,2328	32,63377	5,441	,000*
	15-18	231	100,5844	34,15159		

*p>0.05
**p<0.001

Tablo 2'de ergenlerin yaş değişkeni açısından, İnternet Bağımlılığı Ölçeği ortalamalarının anlamlı düzeyde farklılaşıp farklılaşmadığını belirlemek amacıyla yapılan bağımsız gruplar t testine dört alt boyutta ve ölçeğin toplam puanında 15-18 yaş ergenlerin internet bağımlılığının 11-14 yaş ergenlerden daha fazla olduğu görülmüştür.

Tablo 3: Ergenlerin Yaşadığı Sorunları Ailesiyle Paylaşım Değişkenine Göre İnternet Bağımlılığı Ölçeği Puanlarına Ait t Testi Sonuçları

Bağımlı değişken	Yaşadığı Sorunları Ailesiyle Paylaşım	N	$\overline{X}$	Ss	T	p
Yoksunluk	Evet	376	29,7447	10,72436	-6,734	,000**
	Hayır	198	36,0202	10,40010		
Kontrol Güçlüğü	Evet	376	24,2340	10,89727	-5,953	,000**
	Hayır	198	29,4798	9,54961		
İşlevsellikte Bozulma	Evet	376	15,8843	7,98626	-6,096	,000**
	Hayır	198	20,0707	7,51952		
Sosyal İzolasyon	Evet	376	15,3564	8,53670	-3,322	,001*
	Hayır	198	17,7778	7,83530		
TOPLAM	Evet	376	85,2154	34,36725	-6,260	,000**
	Hayır	198	103,3485	30,19757		

*p>0.05
**p<0.001

Tablo 3'te ergenlerin yaşadığı sorunları ailesiyle paylaşım değişkeni açısından, İnternet Bağımlılığı Ölçeği ortalamalarının anlamlı düzeyde farklılaşıp farklılaşmadığını belirlemek amacıyla yapılan bağımsız gruplar t testine göre, ölçeğin alt boyutlarında ve ölçeğin toplam puanında anlamlı düzeyde bir farklılaşma görülmüştür. Buna göre yaşadığı sorunu ailesiyle paylaşmayan ergenlerin internet bağımlılığının yaşadığı sorunu ailesiyle paylaşan ergenlerden daha fazla olduğu görülmüştür.

Tablo 4: Ergenlerin Duygularını Dışa Vurabilmesi Değişkenine Göre İnternet Bağımlılığı Ölçeği Puanlarına Ait t Testi Sonuçları

Bağımlı değişken	Cevap	N	$\overline{X}$	Ss	T	p
Yoksunluk	Evet	331	30,0363	10,80370	-4,708	,000*
	Hayır	246	34,3293	10,87073		
Kontrol Güçlüğü	Evet	331	24,3716	10,95159	-4,767	,000*
	Hayır	246	28,1789	10,10398		
İşlevsellikte Bozulma	Evet	331	15,8218	8,10994	-5,179	,000*
	Hayır	246	19,2642	7,60017		
Sosyal İzolasyon	Evet	331	15,4924	8,89650	-2,319	,021
	Hayır	246	17,0772	7,48646		
TOPLAM	Evet	331	85,7221	34,59341	-4,654	,000*
	Hayır	246	98,8496	31,98682		

*p<0.05
**p<0.001

Tablo 4'da ergenlerin duygularını dışa vurumu açısından, İnternet Bağımlılığı Ölçeği ortalamalarının anlamlı düzeyde farklılaşıp farklılaşmadığını belirlemek amacıyla yapılan bağımsız gruplar t testine göre, ölçeğin alt boyutlarında (yoksunluk, işlevsellikte bozulma, sosyal izolasyon) anlamlı düzeyde bir farklılaşma görülmüştür. Buna göre duygularını dışa vuramayan ergenlerin internet bağımlılığı duygularını dışa vuran ergenlerden daha yüksek olduğu görülmüştür.

Tablo 5: Ergenlerin Sigara Kullanma Değişkenine Göre İnternet Bağımlılığı Ölçeği Puanlarına Ait t Testi Sonuçları

Bağımlı değişken	Cevap	N	$\overline{X}$	Ss	T	p
Yoksunluk	Evet	45	35,0444	10,85222	2,027	,048*
	Hayır	533	31,6266	10,99117		
Kontrol Güçlüğü	Evet	45	29,9333	9,03378	2,968	,004*
	Hayır	533	25,7017	10,82183		
İşlevsellikte Bozulma	Evet	45	20,5111	7,91036	2,785	,006*
	Hayır	533	17,0488	8,01699		
Sosyal İzolasyon	Evet	45	20,7333	9,20326	3,847	,000*
	Hayır	533	15,8049	8,16900		
TOPLAM	Evet	45	106,2222	30,25264	3,057	,002*
	Hayır	533	90,1820	34,07685		

*p>0.05
**p<0.001

Tablo 5'de ergenlerin sigara değişkeni açısından, İnternet Bağımlılığı Ölçeği ortalamalarının anlamlı düzeyde farklılaşıp farklılaşmadığını belirlemek amacıyla yapılan bağımsız gruplar t testine göre, ölçeğin tüm alt boyutlarında ve toplam puanında anlamlı düzeyde bir farklılaşma görülmüştür. Buna göre sigara kullanan ergenlerin internet bağımlılığı sigara kullanmayan ergenlerden anlamlı bir şekilde yüksek bulunmuştur

Tablo 6: Ergenlerin Video Kanallarını Kullanma Durumuna Göre İnternet Bağımlılığı Ölçeği Puanlarına Ait t Testi Sonuçları

Bağımlı değişken	Cinsiyet	N	$\overline{X}$	Ss	t	P
Yoksunluk	Evet	516	32,343023	10,932830	2,914376	,001*
	Hayır	59	27,949153	11,297579		
Kontrol Güçlüğü	Evet	516	26,503876	10,631789	3,126285	,004*
	Hayır	59	21,915254	11,098754		
İşlevsellikte Bozulma	Evet	516	17,645349	8,045514	2,982972	,002*
	Hayır	59	14,355932	7,829570		
Sosyal İzolasyon	Evet	516	16,482558	8,377367	2,494441	,003*
	Hayır	59	13,627119	7,891284		
TOPLAM	Evet	516	92,974806	33,766608	3,251859	,013
	Hayır	59	77,847458	34,573666		

*p>0.05
**p<0.001

Tablo 6'de ergenlerin Youtube kullanıp kullanmama durumu açısından, İnternet Bağımlılığı Ölçeği ortalamalarının anlamlı düzeyde farklılaşıp farklılaşmadığını belirlemek amacıyla yapılan bağımsız gruplar t testine göre, ölçeğin alt boyutlarında anlamlı düzeyde bir farklılaşma görülmüştür. Buna göre Youtube kullananların internet bağımlılığının, Youtube kullanmayanlara göre daha fazla olduğu görülmüştür.

SONUÇ

Araştırmaya katılan ergenlerin internet bağımlığı cinsiyet bağımsız değişkeni açısından karşılaştırıldığında, erkeklerin internet bağımlılığının kızlardan daha fazla olduğu bulunmuştur. Günüç (2010) ve Kayri (2010) da cinsiyete göre internet bağımlılık düzeylerini incelemiş ve erkeklerin kızlara göre bağımlılık düzeylerini daha yüksek bulmuştur. (Tablo 1)

Araştırmamıza katılan ergenler yaş değişkeni açısından incelendiğinde 15-18 yaş ergenlerin internet bağımlılığının 11-14 yaş ergenlerden daha fazla olduğu görülmüştür. (Tablo 2)

Çalışmada elde edilen sonuca göre yaşadığı sorunları ailesiyle paylaşmayan ergenlerde internet bağımlılığının yaşadığı sorunu ailesiyle paylaşan ergenlere göre daha fazla olduğu görülmüştür. (Tablo 3) Kayri ve arkadaşları (2010) ortaokul öğrencileriyle yaptıkları çalışmada internet bağımlılık düzeyleri ve aileleri ile olan ilişki durumları arasında anlamlı bir farklılaşma tespit etmiş ve aileleri ile ilişkilerinin istedikleri gibi olmadığını belirten öğrencilerin internet bağımlılık düzeylerinin daha yüksek olduğunu belirtmişlerdir.

Araştırmamıza katılan ergenlerde duygularını dışa vurmayan ergenlerin internet bağımlılığı duygularını dışa vuran ergenlerden daha yüksek olduğu görülmüştür. (Tablo 4)

Araştırmamıza katılan ve sigara kullanan ergenlerin internet bağımlılığı sigara kullanmayan ergenlere göre anlamlı bir şekilde yüksek bulunmuştur (Tablo 5). Kayri ve arkadaşları (2014) tarafından yapılan araştırmada elde edilen veriler de bulgularımızı destekler niteliktedir. Bu araştırmaya göre katılımcıların internet bağımlılık düzeyleri ile sigara kullanma durumları arasında anlamlı bir farklılık görülmüştür.

Araştırmamıza katılan ergenlerden video kanallarını kullanan ergenlerin internet bağımlılığının, video kanallarını kullanmayan ergenlere göre daha fazla olduğu görülmüştür.(Tablo 6) İnternet bağımlılığının video kanallarının kullanımından kaynaklanan boyutu henüz gündeme geliyor oluşu ve ergenlerin video kanallarını aktif kullanımının yakın

zamanda sorun olarak algılanmaya başlanması sebebiyle literatürde video kanallarının internet bağımlılığıyla ilişkisi hakkında yeterli araştırma bulunmamaktadır.
İnternet bağımlılığıyla ilgili alınacak önlemlerde bağımlılığa etkisi olan sosya demografik özelliklerin dikkate alınması ve yapılacak araştırmalarda ve çalışmalarda video kanallarına daha çok yer verilmesi gerektiği fikrindeyiz.

Kaynakça

1 *Alexa. The Top 500 Sites On The Web. İnternet Adresi: http://www.alexa.com/topsites (Erişim Tarihi:18.11.2017)*

2 *Cengizhan, C. (2005). Öğrencilerin Bilgisayar ve İnternet Kullanımında Yeni Bir Boyut: "İnternet Bağımlılığı". M.Ü. Atatürk Eğitim Fakültesi Eğitim Bilimleri Dergisi, 86-87.*

3 *Eroğlu, A., & Bayraktar, S. (2016). İnternet Bağımlılığı İle İlgili Değişkenlerin İncelenmesi. International Journal of Social Sciences and Education Research.*

4 *Goldberg, I. (1996, Mart). <http://www--usr.rider.edu/~suler/psycyber/supportgp.html> adresinden alınmıştır(Erişim Tarihi:10.11.2017)*

5 *Günüç, S., & Kayri, M. (2010). Türkiye'de İnternet Bağımlılık Profili Ve İnternet Bağımlılık Ölçeğinin Geliştirilmesi: Geçerlik-Güvenirlik Çalışması. Hacettepe Üniversitesi Eğitim Fakültesi Dergisi.*

6 *İç, C. (2017). Video İçerik Üretimi Sağlayan Sosyal Ağ Sitelerinde Video Üretimi: YouTube Türkiye'de Video Üretimi İçerik Analizi. Kocaeli Üniversitesi Sosyal Bilimler Enstitüsü, Kocaeli.*

7 *YouTube: İstatistiklerle Youtube, İnternet Adresi: https://www.youtube.com/yt/press/statistics.html (Erişim Tarihi:19.11.2017)*

FT22

Yenidoğanda Ağrı

Pain İn Newborn

Fulya ÜNVER[1], Fatma TAŞ ARSLAN[2]

[1] Selçuk Üniversitesi Sağlık Bilimleri Enstitüsü Hemşirelik Anabilim Dalı Yüksek Lisans Öğrencisi, Konya

[2]Selçuk Üniversitesi Hemşirelik Fakültesi, Çocuk Sağlığı ve Hastalıkları Hemşireliği ABD

Yenidoğanda ağrının önemi ilk kez 1980'lerde değerlendirilmiş ve bu yıllarda yenidoğanda ağrı algısını tanımlamaya başlayan bir dizi çalışma ortaya çıkmıştır. Ağrı, yenidoğanlar için stres verici bir unsurdur. Yenidoğanlar yaşadıkları ağrıya karşı sözel olarak yanıt veremediğinden dolayı ağrıyı değerlendirmek zordur. Yenidoğanlarda ağrının kısa dönem değerlendirilmesinde davranışşsal ve fizyolojik değişkenler, saatler ve günler süren ağrı durumlarında ise hormon düzeyleri ve metabolik göstergeler ele alınmalıdır. Yenidoğanda ağrının önlenmesi, tedavisi, tedavinin değerlendirilmesi ve ağrının ölçülmesinde, kullanılmak amacıyla; uygulaması kolay, objektif sonuç verebilen, hemşireler tarafından da kullanılabilen ve bakımda da kolaylık sağlayabilen yenidoğan ağrı ölçekleri geliştirilmiştir. Bununla birlikte, günümüzde yenidoğan ağrısını değerlendirmek için evrensel olarak kabul edilmiş bir ölçek yoktur. Ağrı yaşayan tüm yenidoğanların etkili ve güvenli yöntemlerle ağrısının azaltılması temel bir insan hakkıdır. Yenidoğanlarda ağrı yönetiminde amaç; yaşamın ilk dakikalarından itibaren ağrılı girişimlere maruz kalan yenidoğanların hissettiği ağrıyı en aza indirgemek ve yenidoğanın ağrı ile baş etmesine yardım etmektir. Bu amaç doğrultusunda ağrı; doğru bir şekilde değerlendirildikten sonra, sağlık profesyonelleri tarafından farmakolojik ve nonfarmakolojik yöntemler kullanılarak sağlanan etkin bakımla yönetilebilir. Ağrı tedavisinde önemli ve yaygın yol ilaç tedavisidir ancak ağrıyı hafifletmek için kullanılan ilaçların önemli yan etkilerinin olduğu da bilinmektedir. İlaç kullanılmadan yapılan tüm uygulamalar, nonfarmakolojik yöntemler olarak tanımlanmaktadır.

Anahtar Kelimeler: *ağrı, ağrı yönetimi, hemşire, nonfarmakolojik yöntemler, yenidoğan*

Abstract

The importance of pain in the newborn was first evaluated in the 1980s, and a series of studies began to describe the perception of pain in the newborn. Pain is a stressor for newborns. Since newborns do not respond verbally to the pain they experience, it is difficult to assess the pain. Behavioral and physiological variables should be considered in the short-term evaluation of pain in newborns, and hormone levels and metabolic indicators should be considered in pain situations lasting hours and days. In order to be used in the prevention, treatment, evaluation of treatment and measurement of pain in the newborn; newborn pain scales which are easy to apply, can provide objective results, can be used by nurses and provide convenience in care have been developed. However, there is currently no universally accepted scale for assessing newborn pain. It is a fundamental human right to reduce the pain of all newborns with effective and safe methods. Aim of pain management in newborns; minimize the pain experienced by newborns who have been exposed to painful interventions from the first minutes of life and to help the newborn cope with the pain. In accordance with this purpose, after the pain is evaluated correctly, It can be managed by effective care provided by healthcare professionals using pharmacological and non-pharmacological methods. Drug

treatment is an important and common way to treat pain, but it is known that drugs used to alleviate pain have significant side effects. All applications without drug use are defined as non-pharmacological methods.

Key Words: *pain, pain management, nurse, non-pharmacological methods, newborn*

1. PAIN IN NEWBORN

The importance of pain in the newborn was first evaluated in the 1980s. Before this time, it was thought that the newborns were inadequate to perceive and remember the pain because the nervous system was not fully developed and myelination was not completed. Also in these years, thoughts delayed the studies of pain in the newborn because the risks of pharmacological agents were higher than the potential benefits and the pain experience did not adversely affect the newborn (31, 4, 30). In the 1980s, a series of studies began to define pain perception in the newborn (4). In the study of Perlman and Volpe (1983); It has been reported that procedural stress in preterm infants undergoing care in the neonatal intensive care unit (NICU) causes changes in the blood flow of the brain (33). Anand et al. (1987) In his study which is a turning point; It was found that the newborns who were anesthetized for the surgery recovered faster in the postoperative period and that these newborns developed less diseases (6). Since myelination of spinal fibers continues after birth, pain transmission in newborns occurs slowly through C fibers (thin fibers) instead of A-delta fibers (broad myelin and fast conduction). This transmission by C fibers causes widespread pain and the center of the pain is not fully understood (7, 32, 46). Although the pain impulse is slow because it is carried by C fibers, the distance from the pain area to the brain is also shorter due to the shorter neuromuscular distance and the distance between neurons (46).

2. SYMPTOMS OF PAIN IN NEWBORN

Pain is a stressor for newborns (41). Pain experienced by the infant; it can prevent her behavior, family and infant interaction, infant's adaptation to the outside world, It also causes changes in the development of the brain and senses and growth is adversely affected (44, 38, 12, 22). Since newborns do not respond verbally to the pain they experience, it is difficult to assess the pain (15, 35, 14, 51). Behavioral and physiological variables should be considered in the short-term evaluation of pain in newborns, and hormone levels and metabolic indicators should be considered in pain situations lasting hours and days (9, 47).

3. THE FACTORS AFFECTING PAIN IN THE NEWBORN

Some factors are effective in the perception of pain and pain response in the newborn. These factors include;

Gestation age
Central nervous system maturation
Gender
Delivery method
Alertness
Type, duration of painful stimuli
Environment and general health
Severity of the disease
Past experiences

There are individual differences and ability to cope (35, 3, 47, 49).

4. EVALUATION OF PAIN IN NEWBORN

Some standards have been set by Agency for Health Care Policy and Research (AHCPR) to ensure that pain assessment in the newborn can be performed correctly. According to these standards:

Evaluations should be made at regular intervals
Use reliable and valid measurement methods
Effective participation of the family in the care of the newborn
Multidimensional evaluation including behavioral and physiological symptoms (42, 25).
In order to be used in the prevention, treatment, evaluation of treatment and measurement of pain in the newborn; newborn pain scales which are easy to apply, can provide objective results, can be used by nurses and provide convenience in care have been developed. In the development of these scales, behavioral and physiological responses of the newborn to pain were utilized (24). However, there is currently no universally accepted scale for assessing newborn pain (15, 50). Pain assessment; In addition to the measurement tools and status assessment of the newborn, the perceptions, beliefs, values, experiences and knowledge of the healthcare professionals who will evaluate the pain and take care of the newborn are effective (39). There is no "gold standard" in the evaluation of pain. Behavioral parameters are often used because it is an accurate sign that is easy to evaluate, non-invasive and reflects pain.

5. PAIN MANAGEMENT IN NEWBORN

It is a fundamental human right to reduce the pain of all newborns with effective and safe methods (19). Aim of pain management in newborns; minimize the pain experienced by newborns who have been exposed to painful interventions from the first minutes of life and to help the newborn cope with the pain. In accordance with this purpose, after the pain is evaluated correctly, it can be managed by effective care provided by healthcare professionals using pharmacological and nonpharmacological methods (20, 2). Accurate pain management; it depends on the type, source, severity and duration of the pain. World Health Organization's recommendations for pain management;
Pain should be evaluated regularly
Pharmacological and non-pharmacological applications should be used together
If an analgesic is used, it should be given at night for the child to sleep comfortably.
The effects of analgesics should be known and monitored
Analgesic should be planned considering the pain and sensitivity of the child (18).

5.1. Pharmacological Methods in Pain Treatment

Drug treatment is an important and common way to treat pain in children. The drugs used in the treatment of pain are opioid (morphine, methadone, fentanyl and derivatives) and non-opioid analgesics (acetaminophen and nonsteroidal anti-inflammatory drugs), sedatives and local anesthetics. Whether sedation is required besides analgesia, it should be determined whether these are to be administered with a single drug or a combination, and the likelihood that the drugs taken together will interact. The type of analgesic drug to be selected depends on the severity of the pain. After appropriate drug selection is made, the route of administration and frequency of this drug should be determined. The oral route should always be the first route of choice. If necessary, intravenous, subcutaneous or transdermal routes should be used. The important thing is that the drug can be kept at a certain level at the blood level. The initial dose should be optimal and subsequent doses should be tailored to the patient's response. The main aim should be to provide early control of pain. Inadequate analgesic doses lead to prolonged pain and increased anxiety (34, 13). It is also known that pharmacological methods used to alleviate pain in the newborn have important side effects such as respiratory distress, changes in oxygen saturation, apnea, bradycardia, hypotension, partial airway obstruction and hypersalivation (5, 23). In the studies; It has been reported that morphine, a pharmacological agent to premature newborns during invasive procedures, adequate analgesic effect cannot be achieved even when intravenously (IV) is administered continuously (5). The use of opioids in spontaneous breathing may lead to respiratory depression (43). In the newborns, treatment options with the highest side effects and the least

side effects related to analgesics used in pain treatment were investigated. Paracetamol, nonsteroidal anti-inflammatory, morphine and fentanyl have been investigated in randomized controlled clinical studies and it has been concluded that intravenous paracetamol administration is the most appropriate option for newborn analgesia (45).

5.2. Non-pharmacological Methods in Pain Treatment

All applications without using drug to control pain are defined as non-pharmacological methods. These methods provide relief of endorphin which is the natural morphine of our body and reduce the pain (40, 16, 27, 48). Non-pharmacological methods increase the effectiveness of drugs when used together with analgesics (16, 21, 27). Pain relief in the newborn; attention can be drawn to other directions by using various senses such as visual, auditory, tactile and taste sensations. Attention is focused on pain again when the warning that draws attention is lifted (10). Kangaroo care, massage, music, touch, mother's voice, breast milk, mother's odor, suction, oral sucrose, glucose or other sweet fluids, acupuncture, reiki, aromatherapy, different sensory stimuli, such as nesting and fetal position activate the “gate control mechanism" which prevents pain sensation to the central nervous system (28, 10, 1, 8, 36). These practices play a key role in the management of newborn pain (37). Nonpharmacological methods can be used safely in painful procedures because of their short-term effect and tolerability (29).

The main benefits of non-pharmacological treatments are;

Easy to use

They are reliable

Applicability

It includes the ease of learning that will enable the universal implementation of any of these interventions (26).

6. AUTHORITY AND RESPONSIBILITIES OF THE NEWBORN NURSES IN PAIN MANAGEMENT

Newborn nurse in pain management; can actively contribute to the pain control process of the newborn by actively participating in pharmacological treatment, following the treatment process and using non-pharmacological treatment methods (11). Non-pharmacological methods are included in the independent roles of nurses and nurses need to increase their knowledge, skills and experiences about these methods. However, it is known that nurses lack knowledge about pain control and do not use the non-pharmacological methods they can apply independently by their own decisions (17). For this reason, it is very important that nurses receive the necessary training / certificates in order to apply non-pharmacological methods. Nurses should attend regular trainings on non-pharmacological and pharmacological pain management methods in the clinics and hospitals where they work.

References

1- Abdallah B, Badr LK, Hawwari M. The efficacy of massage on short and long-term outcomes in preterm infants. Infant behavior and development 2013; 36 (4): 662-9.

2- Akcan E, Polat S. Pain in newborns and the role of nurse in pain management. Acıbadem University Journal of Health Sciences 2017; 2: 64-9.

3- Akyürek B. Management of pain diagnosis in newborn and ethics. 13th National Congress of Neonatology, 2005, Kayseri: 462-73.

4- Als H, Duffy FH, McAnulty GB, Rivkin MJ, Vajapeyam S, Mulkern RV, Warfield SK, Huppi PS, Butler SC, Conneman N. Early experience alters brain function and structure. Pediatrics 2004; 113 (4): 846-57.

5- Anand K, Hall RW, Desai N, Shephard B, Bergqvist LL, Young TE, Boyle EM, Carbajal R, Bhutani VK, Moore MB. Effects of morphine analgesia in ventilated preterm neonates: primary outcomes from the NEOPAIN randomised trial. The Lancet 2004; 363 (9422): 1673-82.
6- Anand K, Sippell W, Aynsley-Green A. Pain, anaesthesia, and babies. Lancet (London, England) 1987; 2 (8569): 1210.
7- Anand KJ. Clinical importance of pain and stress in preterm neonates. Neonatology 1998; 73 (1): 1-9.
8- Asadi-Noghabi F, Tavassoli-Farahi M, Yousefi H, Sadeghi T. Neonate pain management: what do nurses really know? Global journal of health science 2014; 6 (5): 284.
9- Chiswick ML. Assessment of pain in neonates. The Lancet 2000; 355 (9197): 6-8.
10- Cignacco E, Hamers JP, Stoffel L, van Lingen RA, Gessler P, McDougall J, Nelle M. The efficacy of non-pharmacological interventions in the management of procedural pain in preterm and term neonates: a systematic literature review. European Journal of Pain 2007; 11 (2): 139-52.
11- Çöçelli LP, Bacaksız B, Ovayolu N. The role of the nurse in the treatment of pain. Gaziantep Medical Journal 2008; 14 (2): 53-8.
12- Efe Ö, Öncel S. Effect of Breast Milk on Pain Reduction in Minor Invasive Procedures in Newborns. Nursing Forum May-June 2005: 42-6.
13- Emir S, Cin Ş. Pain in children: evaluation and approach. Ankara University Faculty of Medicine Journal 2004; 57 (3): 153-60.
14- Faye PM, De Jonckheere J, Logier R, Kuissi E, Jeanne M, Rakza T, Storme L. Newborn infant pain assessment using heart rate variability analysis. The Clinical journal of pain 2010; 26 (9): 777-82.
15- Gallo AM. The fifth vital sign: implementation of the Neonatal Infant Pain Scale. Journal of Obstetric, Gynecologic, & Neonatal Nursing 2003; 32 (2): 199-206.
16- Geyer J, Ellsbury D, Kleiber C, Litwiller D, Hinton A, Yankowitz J. An evidence-based multidisciplinary protocol for neonatal circumcision pain management. Journal of Obstetric, Gynecologic, & Neonatal Nursing 2002; 31 (4): 403-10.
17- Göl İ, Onarıcı M. Nurses' knowledge and practice about pain and pain control in children. Hacettepe University Journal of Nursing 2015; 2 (3): 20-9.
18- Evaluation and management of pain in children, 2012. Accessed on October 6, 2019. Access address, https://www.uptodate.com/contents/evaluation-and-management-of-pain-in-children.
19- Declaration of montreal: declaration that access to pain management is a fundamental human right 2010. Accessed on October 6, 2019. Access address https://www.ncbi.nlm.nih.gov/pubmed/21426215.
20- Kılıç M, Öztunç G. The methods used in pain control and the role of the nurse. Fırat Health Services Journal 2012; 7 (21): 35-51.
21- Kraft NL. A pictorial and video guide to circumcision without pain. Advances in neonatal care: official journal of the National Association of Neonatal Nurses 2003; 3 (2): 50-62; quiz 3-4.
22- Kültürsay N. Sick babies require love and affection: Soft care in neonatal intensive care. UNEKO-13 and Newborn Nursing Congress, Congress Book: Kayseri; 2005; sf, 138-9.
23- Lago P, Garetti E, Merazzi D, Pieragostini L, Ancora G, Pirelli A, Bellieni CV, Neonatology PSGotISo. Guidelines for procedural pain in the newborn. Acta Paediatrica 2009; 98 (6): 932-9.
24- Lawrence J, Alcock D, McGrath P, Kay J, MacMurray SB, Dulberg C. The development of a tool to assess neonatal pain. Neonatal network: NN 1993; 12 (6): 59-66.
25- Lemons J, Blackmon L, WP JK, MacDonald H, Miller C, Papile L, Rosenfeld W, Shoemaker C, Speer M, Greene M. Prevention and management of pain and stress in the neonate. Pediatrics 2000; 105 (2): 454-61.
26- Mangat AK, Oei J-L, Chen K, Quah-Smith I, Schmölzer GM. A review of non-pharmacological treatments for pain management in newborn infants. Children 2018; 5 (10): 130.
27- Mathew P, Mathew JL. Assessment and management of pain in infants. Postgraduate Medical Journal 2003; 79 (934): 438-43.
28- Melzack R, Wall PD. Pain mechanisms: a new theory. Science 1965; 150 (3699): 971-9.
29- Menon G, McIntosh N. How should we manage pain in ventilated neonates? Neonatology 2008; 93 (4): 316-23.

30- Ovalı F. Prevention of pain in the newborn. Dağoğlu T, Görak G, editors. Basic neonatology and nursing principles. Istanbul: Nobel Medicine Bookstore;2008. s. 725–42.
31- Owens ME, Todt EH. Pain in infancy: neonatal reaction to a heel lance. Pain 1984; 20 (1): 77-86.
32- Pabis E, Kowalczyk M, Kulik T. Pain in children in historical perspective. Anestezjologia intensywna terapia 2010; 42 (1): 37-41.
33- Perlman JM, Volpe JJ. Suctioning in the preterm infant: effects on cerebral blood flow velocity, intracranial pressure, and arterial blood pressure. Pediatrics 1983; 72 (3): 329-34.
34- Potts NL, Mandleco BL. Pediatric nursing: Caring for children and their families, Delmar, Thomsan Learning 2002. s. 517-534.
35- Reyes S. Nursing assessment of infant pain. The Journal of perinatal & neonatal nursing 2003; 17 (4): 291-303.
36- Riddell P. Pillai Riddell RR, Racine NM, Gennis HG, Turcotte K, Uman LS, Horton RE, et al. Non-pharmacological management of infant and young child procedural pain. Cochrane Database of Systematic Reviews 2015, 12.
37- Sarvis AL. Assessment and documentation of newborn pain: an intervention and longitudinal evaluation, Master's Thesis, University of Florida 2004, Nursing School.
38- Savaşer S. The effect of the mother's lap on reducing the discomfort caused by bloodletting from heels in the newborn. Journal of Hacettepe University School of Nursing 2000; 7 (1):13-9.
39- Srouji R, Ratnapalan S, Schneeweiss S. Pain in children: assessment and nonpharmacological management. International journal of pediatrics 2010.
40- Stevens B, Gibbins S, Franck LS. Treatment of pain in the neonatal intensive care unit. Pediatric Clinics of North America 2000; 47 (3): 633-50.
41- Stevens BJ, Franck LS. Assessment and management of pain in neonates. Paediatric Drugs 2001; 3 (7): 539-58.
42- Stevens BJ, Johnston CC, Grunau RV. Issues of assessment of pain and discomfort in neonates. Journal of Obstetric, Gynecologic, & Neonatal Nursing 1995; 24 (9): 849-55.
43- Taddio A. Opioid analgesia for infants in the neonatal intensive care unit. Clinics in Perinatology 2002; 29 (3): 493-509.
44- Taddio A, Ohlsson A, Einarson TR, Stevens B, Koren G. A systematic review of lidocaine-prilocaine cream (EMLA) in the treatment of acute pain in neonates. Pediatrics 1998; 101 (2): e1-e.
45- Tekin N. Pain in the newborn. Hasanoğlu A, Düşünsel R, Bideci A, editors. Basic pediatrics. Gunes Medical Bookstores; 2010. s. 511-4.
46- Törüner EK, Büyükgönenç L. Basic nursing approaches in child health. Ankara: Göktuğ Publishing;2017. s. 92-107.
47- Uyar M. Childhood cancer pain and treatment. 1. Pediatric oncology nursing course book İzmir: 2005. s. 119-26.
48- Walden M. Pain assessment and management. Verklan M, Walden M, editörler. Core curriculum for neonatal intensive care nursing. Missouri: Saunders Elsevier; 2010. s. 333-45.
49- Walden M. Pain in the newborn and ınfant. Kenner C, Lott J, editörler. Comprehensive neonatal nursing care 5. Network: Springer Publishing Company; 2014. s. 571-86.
50- Walden M, Franck L. Identification, management, and prevention of newborn/ ınfant pain. Kenner C, Wright J, editörler. Comprehensive neonatal nursing. Philadelphia: Saunders; 2003. s. 844-56.
51- Walter-Nicolet E, Annequin D, Biran V, Mitanchez D, Tourniaire B. Pain management in newborns. Pediatric Drugs 2010; 12 (6): 353-65.

FT23

Hiperbilirubinemi Nedeniyle Hastaneye Yatırılan Yenidoğanların Annelerinin Kaygı Düzeyi

Anxıety Level of Mothers of Newborns are Hospıtalızed Wıth a Dıagnosıs of Hyperbılırubınemıa

Fulya Ünver[1], Fatma Taş Arslan[2]

[1] Selçuk Üniversitesi Sağlık Bilimleri Enstitüsü Hemşirelik Anabilim Dalı Yüksek Lisans Öğrencisi, Konya

[2]Selçuk Üniversitesi Hemşirelik Fakültesi, Çocuk Sağlığı ve Hastalıkları Hemşireliği ABD

Amaç:
Bu çalışma, hiperbilirubinemi nedeniyle hastaneye yatırılan term yenidoğanların annelerinde kaygı düzeyi ve ilişkili faktörlerin belirlenmesi amacıyla yapılmıştır.
Gereç ve Yöntem:
Çalışma, bir devlet hastanesinin Yenidoğan Yoğun Bakım Ünitesinde yürütülmüştür. Hiperbilirubinemi nedeniyle tedavi gören sağlıklı term yenidoğana sahip ve çalışmaya katılmaya gönüllü anneler (N:120) çalışma kapsamına alınmıştır. Araştırmanın verileri, tanımlayıcı bilgi formu ve Durumluk Kaygı Ölçeği (STAI-1) ile annelerle yüz yüze görüşülerek toplanmıştır. Verilerin analizinde One-Way ANOVA testi, bağımsız gruplarda t testi ve pearson korelasyon testi kullanılmıştır.
Bulgular:
Çalışmada annelerin durumluk kaygı ölçeği (STAI-1) toplam puan ortalaması 48,33±15,636 olarak bulunmuştur. Araştırmada; ekonomik düzey, gebelik süresi, doğum şekli, sağlık çalışanları desteği, bebeğin yenidoğan sarılığı olmasına yol açabilecek neden, bebeğin ışık tedavisi almasının ve bebekten kan alınması gibi uygulamaların anneyi kaygılandırma durumu ile durumluk kaygı puan ortalaması arasında istatistiksel olarak anlamlı bir fark olduğu belirlenmiştir ($p<0,05$).
Sonuç:
Araştırma bulguları sonucunda annelerin hafif kaygı düzeyinde olduğu ve bazı faktörlerin annelerin kaygı düzeyini etkilediği belirlenmiştir

Anahtar Kelimeler: *anne, fototerapi, hiperbilirubinemi, kaygı, yenidoğan*

ABSTRACT
Objective:
This study was conducted to determine anxiety levels and related factors in mothers of term newborns hospitalized for hyperbilirubinemia.
Material and Methods:
The study was conducted in the Newborn Intensive Care Unit of a public hospital. Mothers (n = 120) who had healthy term newborns treated for hyperbilirubinemia and volunteered to participate in the study were included in the study. The data of the study was collected through face-to-face interviews with the mothers using the descriptive information form and the State-Trait Anxiety Inventory (STAI-1). One-Way ANOVA test, independent samples t test and Pearson correlation test were used for data analysis.

Results:
In the study, the mean score of state-trait anxiety inventory (STAI-1) of the mothers was found to be 48.33 ± 15.636. In the study; It was found that there was a statistically significant difference between ($p < 0.05$) the anxiety level of the mother and the state-trait anxiety inventory of the applications such as economic level, gestation period, delivery type, healthcare professional support, the reason that the newborn may have hyperbilirubinemia, taking phototherapy of the baby and taking blood from the baby.
Conclusion:
As a result of the research findings, it was determined that mothers had mild anxiety level and some factors affected mothers' anxiety level.

***Key words**: mother, phototherapy, hyperbilirubinemia, anxiety, newborn*

INTRODUCTION

Hyperbilirubinemia is an important problem frequently encountered in the newborn period (17, 2, 7). There is no clear data on the prevalence of hyperbilirubinemia in newborns in our country (9). When the risk factors of hyperbilirubinemia are examined; diabetic mother baby, male sex, sibling history of phototherapy, premature, ompholite, factors with unknown cause, ABO incompatibility, Rh incompatibility, urinary infection, sepsis, glucose-6-phosphate-dehydrogenase (G6PO) enzyme deficiency, hypothyroidism, hypernatremic dehydration, insufficient nutrition, polycythemia, cephal hematoma, history of difficult birth, down syndrome (1, 19, 9). Early diagnosis and treatment is very important in hyperbilirubinemia (9). Phototherapy is generally used in treatment approaches for hyperbilirubinemia in newborns (3, 13).

In the treatment process, the mother has a very important role in maintaining and raising the well-being of the baby (15). Be hospitalized with a diagnosis of hyperbilirubinemia may cause the mother to think that she has not performed her roles adequately, to feel inadequate and to feel guilty. In addition, the process of adapting to a different environment, order and people, the medical tools used, the applications to the baby, the new responsibilities that the mother has to fulfill, the fear of unknownness about how the process will proceed causes the mother to experience anxiety (8, 16). In this case, the emotional bond between the mother and the baby is interrupted. Maternal care that is important for the baby cannot be provided effectively. The mother feels unsuccessful, the level of anxiety increases, and she has trouble cooperating with the medical team (4, 15).

Mothers of babies hospitalized for hyperbilirubinemia are faced with treatment (phototherapy) and many causes of anxiety. Anxiety affects the mother and the baby negatively and causes the baby's healing process to prolong. The aim of this study; To determine the status of showing difference the anxiety level of mothers of healthy term newborns hospitalized due to hyperbilirubinemia, sociodemographic characteristics, descriptive characteristics of newborns, obstetric characteristics, social support systems and their knowledge and experience. In this study, the state anxiety level of the mothers of the babies receiving phototherapy and affecting factors will be determined.

MATERIAL AND METHODS

This descriptive study was conducted between April and October 2019 with mothers of infants hospitalized for hyperbilirubinemia in the newborn intensive care unit of a public hospital. The sample of the research which was calculated with G-Power program, it was determined as minimum 90 people with 0.05 significance level, 0.4 sensitivity and 80% power and 120 samples were reached. Random sampling method was used in sampling. As sample selection criteria; Infants who had no health problems other than hyperbilirubinemia

(37GW + 6days-41GW + 6days), who had phototherapy for at least eight hours and who spoke Turkish, had no psychiatric disorder or speech disorder and agreed to participate in the study. Data were collected by the researcher from the mothers of the babies who fulfilled the research criteria at the appropriate times when they were present in the clinic, after informing about the research and with the permission of the researcher.

Data Collection Tools

Descriptive Information Form

According to the literature (8, 5, 16), the patient information form prepared by the researcher consisted of three sections and a total of nineteen questions.

State-Trait Anxiety Inventory

State Trait Anxiety Inventory was developed by Spielberger et al. (1970), In 1985, it was translated into Turkish by Necla Öner and LeCompte also it's validity and reliability have been made. The reliability coefficients determined by alpha correlations in the Turkish version of the scale for the state anxiety scale between .83-.92 and between .83 and .87 for trait anxiety scale. In the State Anxiety Scale, there are 20 expressions that individuals can use to express their feelings. Depending on how one feels and the severity of his / her emotions, he / she should select one of the options "None" (1), "Somewhat" (2), "Quite"(3), "Completely" (4). A high score indicates a high level of anxiety and a small score indicates a low level of anxiety (14).

In this study, State Anxiety Scale was used to determine how mothers feel at a given moment and under certain conditions.

Ethical Dimension of Research

Prior to the study, written permission was obtained from the Ethics Committee of the Institute of Health Sciences of Selçuk University and the institution where the research was to be conducted, Informed consent was obtained from the mothers.

Data Analysis

The data were analyzed by Statistical Package for Social Science (SPSS) 25.0 package program. Number, percentage, mean, standard deviation, min-max analysis were used in descriptive data. One-Way ANOVA test, independent samples t test and pearson correlation test were used in the study. Statistical significance level was accepted as $p<0.05$.

RESULTS

Some descriptive and obstetric characteristics of the mothers are given in Table 1. In the Study; Anxiety scores of mothers who good economic level compared to those with moderate economic level, had a baby between 39-40 weeks and delivered by cesarean were significantly higher ($p<0.05$) (Table1).

Table 1. Comparison of state anxiety scores according to some characteristics of mothers (N:120)

Sociodemographic Characteristics	N	%	Mean±S.D	Test value / p
Level of Education				
Primary school graduate *	28	23,3	42,71±11,737	F: 1,948
Secondary school graduate	31	25,8	48,74 ± 16,767	0,126
High school graduate	36	30,0	49,31 ± 16,942	
Universty graduate	25	20,8	52,68 ± 15,135	
Economic level				
Bad	8	6,7	43,75 ± 9,099	F: 8,984
Middle	63	52,5	43,59 ± 14,350	<0,001
Good	49	40,8	55,16 ± 15,727	
Gestation period				
259-272 days (37 weeks-38 weeks + 6 days)	78	65,0	46,10 ± 15,286	t: -2,154
273-280 days (39 weeks to 40 weeks)	42	35,0	52,45 ± 15,618	0,033
Delivery method				
Normal delivery	56	46,7	44,79 ± 14,641	t: -2,364
Cesarean	64	53,3	51,42 ± 15,930	0,020

*There are 2 illiterate in primary school graduates category.

In the study, the mean score of the State-Trait Anxiety Inventory (STAI-1) of the mothers was 48.33 ± 15.636. Descriptive information about mothers' social support, knowledge and experiences is given in Table 2. In the study, Not receiving support from healthcare professional, as a reason that could lead to hyperbilirubinemia; Anxiety scores of the mothers who stated that they had blood incompatibility, malnutrition and the reasons for not knowing, phototherapy and the baby taking blood from the baby were significantly higher ($p<0,05$) (Table 2).

Table 2. Comparison of state anxiety scores according to social support systems, knowledge and experience of mothers (N:120)

Characteristics	N	%	Mean±S.D	Test value / p
Family and immediate surroundings support				
No	10	8,3	43,20 ±7,052	t: -1,083
Yes	110	91,7	48,79±16,130	0,281
Healthcare professionals support				
No	18	15,0	55,00±15,507	t: 1,989
Yes	102	85,0	47,15±15,435	0,049
The reason that the newborn may have hyperbilirubinemia				
Blood incompatibility	26	21,7	52,62±17,408	F: 4,589
Malnutrition	59	49,2	50,22±15,659	0,012
Not know	35	29,2	41,94±12,341	
Mother's previous hospitalization experience				
No	35	29,2	45,60±15,342	t: -1,228
Yes	85	70,8	49,45±15,707	0,222
A history of infants with previous hyperbilirubinemia				t: 1,656
No	87	72,5	49,77±16,120	0,100
Yes	33	27,5	44,52±13,789	
The state of anxiety for the mother when the baby is receiving phototherapy				
No	54	45,0	40,94±13,051	t: -5,155
Yes	66	55,0	54,36±15,047	<0,001
The anxiety of the mother such as taking blood from the baby				
No	43	35,8	36,21±11,706	t:-7,764
Yes	77	64,2	55,09±13,328	<0,001

There was no correlation between maternal age, number of children, birth weight of the baby and mean anxiety score (Table 3).

Table 3. Comparison of the relationship between some characteristics and mean state anxiety inventory (N: 120)

Characteristics	R	p value
Maternal age	0,069	0,454
Number of children	-0,046	0,618
Birth weight of the baby	0,017	0,853

DISCUSSION

Mothers of babies who receive phototherapy due to hyperbilirubinemia have different levels of anxiety and are thought to have many factors that may affect this condition. The presence of the newborn in the intensive care setting causes mild (6), moderate (11) and high (10) anxiety in mothers. In this study, it was determined that mothers experienced mild anxiety. The findings obtained from the study were similar to other studies in the literature on the subject (8). In the study, mothers with good and moderate economic status, between 39-40

weeks and giving birth by cesarean section had higher anxiety levels. In the literature, it has been reported that some characteristics raise the anxiety level of mothers (16, 18). In addition, these results may be due to the sample characteristics in the study. In this study, mothers who do not receive support from healthcare professionals, who know the causes of hyperbilirubinemia, and who are concerned about phototherapy and bloodletting procedures have high anxiety levels. In many studies, it is known that features such as laying the baby in the newborn and performing invasive procedures cause anxiety in mothers (12, 6, 8, 16).

CONCLUSIONS AND RECOMMENDATIONS

In the results of study; It was determined that mothers had mild anxiety and some traits increased anxiety level. Family-centered care is very important in nursing practice. Mothers have the right to be informed about their child, to participate in the care of the child and to be involved in the decision-making process. The fact that healthcare professionals communicating with the mother explains hyperbilirubinemia and allows the mother to express her thoughts about this condition may be an important factor in reducing the anxiety of the mother.

References

1- *AAP. Management of hyperbilirubinemia in the newborn infant 35 or more weeks of gestation. 2004; 114 (1): 297.*

2- *Altikat S, Kuru Hİ. Research for the effects of rh and ab0 incompatibility in newborn infants on total bilirubin levels within the first 24 hours in and around kütahya. Journal of the Institute of Science & Technology of Dumlupinar University/Dumlupinar Üniversitesi Fen Bilimleri Enstitüsü Dergisi 2012: 27.*

3- *Bhutani VK. Phototherapy to prevent severe neonatal hyperbilirubinemia in the newborn infant 35 or more weeks of gestation. Pediatrics 2011: 2011-1494.*

4- *Boztepe H. Family-centered care in pediatric nursing. Turkey Clinics Journal of Nursing Sciences 2009; 1(2): 88-93.*

5- *Canbulat N, Demirgöz M. Phototherapy of newborn: Phototherapy. Zeynep Kamil Bulletin of Medicine 2009; 40 (1): 37-41.*

6- *Carter J, Mulder R, Bartram A, Darlow B. Infants in a neonatal intensive care unit: parental response. Archives of Disease in Childhood-Fetal and neonatal edition 2005; 90 (2): F109-F13.*

7- *Conk Z, Başbakkal Z, Yılmaz HB, Bolışık B. Pediatric nursing. Academician Medical Bookstore: 2013*

8- *Çelebioğlu A, Polat S. The level of anxiety of mothers of newborns hospitalized for hyperbilirubinemia, the factors affecting and the role of information in reducing anxiety. Journal of Anatolia Nursing and Health Sciences 2008; 11: 2.*

9- *Çoban A, Türkmen M, Gürsoy T. Turkish Society of Neonatology. Approach, follow-up and treatment guide for neonatal jaundice 2014.*

10- *Doering L, Moser D, Dracup K. Correlates of anxiety, hostility, depression, and psychosocial adjustment in parents of NICU infants. Neonatal Network 2000; 19 (5): 15-23.*

11- *Erdem Y, Kutluk Ş. Comparison of anxiety levels of mothers in postpartum infants and intensive care units. UNEKO-13) and Newborn Nursing Congress Book. Kayseri; 2005.*

12- *Hannon PR, Willis SK, Scrimshaw SC. Persistence of maternal concerns surrounding neonatal jaundice: an exploratory study. Archives of pediatrics & adolescent medicine 2001; 155 (12): 1357-63.*

13- *Muchowski KE. Evaluation and treatment of neonatal hyperbilirubinemia. Am Fam Physician 2014; 89 (11): 873-8.*

14- *Öner N, Le Compte A. State-trait anxiety inventory hand book. Bogazici University, İstanbul;1985.*

15- *Öztürk C, Ayar D. Family centered care in pediatric nursing. Dokuz Eylül University Faculty of Nursing Electronic Journal 2014; 7: 4.*

16- *Özyazıcıoğlu N, Tüfekci FG. Investigation of the factors affecting the anxiety and hopelessness levels of the mothers who take care of the babies in the neonatal intensive care unit. Journal of Anatolia Nursing and Health Sciences 2009; 12: 4.*

17- *Stoll BJ, Kliegman RM. Jaundice and hyperbilirubinemia in the newborn. Nelson textbook of pediatrics. 17th ed. WB Saunders: Philadelphia; 2004.*

18- *Uludağ A. Factors that cause stress in the mothers of the babies followed in the newborn intensive care unit; determining the role of primary care in coping with stress. Konuralp Medical Journal 2012; 3: 19-26.*

19- *Yaseen H, Khalaf M, Rashid N, Darwich M. Does prophylactic phototherapy prevent hyperbilirubinemia in neonates with ABO incompatibility and positive Coombs' test? Journal of perinatology 2005; 25 (9): 590.*

FT24

TEKNOLOJİ KULLANIMININ YÜRÜTÜCÜ İŞLEVLER ÜZERİNE ETKİSİ

Satı Kaya,Fatih Hilmi Çetin

Amaç

Yürütücü işlevler belirli bir amaca ulaşmak için ihtiyaç duyulan becerilerin tümü olarak tanımlanabilir. Yürütücü işlevleri bir şemsiye olarak düşünürsek bu şemsiyenin altında bireyin bilişsel ve duygusal süreçlerini kontrol etmesini sağlayan 9 farklı alan/beceri bulunmaktadır.Bunlar, aktif/çalışan bellek, duygu kontrolü dikkati sürdürme planlama-organizasyon, zamanı kullanma, esneklik, hedefe yönelme,tepkiyi dizginleme/ketleme, göreve/ödeve başlama şelinde sıralanabilir.

Zeka gelişimine etki eden etyolojik faktörler, genetik, gelişimsel,edinsel faktörler ve bunların kombinasyonu şeklinde olabilmektedir. Genetik nedenler; kromozal, tek gen bozuklukları ve multifaktöriyel bozuklukları içerir. Gelişimsel nedenler; prenatal dönemde toksinlere veya enfeksiyonlara maruziyetle ilişkilidir. Kazanılmış nedenler ise; prematürite gibi perinatal travmalar ve sosyokültürel faktörlerden oluşmaktadır.

Zeka gelişimine etki eden bu faktörlere bağlı olarak denilebilir ki, çocuk zihni sadece kendi keşiflerinin ve var olan potansiyelinin sonucu değil, çevreden edindiği bilgi ve kavramsal aletlerin etkisi sonucu gelişimini sürdürür. Çocuk zihinsel gelişim sürecinde çevresini tanıma,anlama ve öğrenme çabasındadır. Bu süreçte teknoloji kullanımının çocuk zihni gelişimine olumlu ve olumsuz etkilerinin var olduğu aşikardır.

Bu çalışmada bilişsel gelişime etki eden sosyo kültürel ve değiştirilebilir faktörlerin 6-12 yaş grubundaki çocuklarda zihinsel gelişime etkisinin saptanması amaçlanmıştır.

Metod

Bu çalışmada veriler, Konya şehir merkezinde yaşayan, ilkokul eğitimi alan, 6-12 yaş aralığında bulunan 71 çocuğa, çocuklardaki zeka gelişim düzeyini ve internet bağımlılığı derecesini saptamak için uygulanmış üç farklı ölçekten(Çoklu Zeka Envanteri, Dijital Oyun Bağımlılığı Ölçeği, Young İnternet Bağımlılığı Ölçeği) elde edilen bilgilere göre şekillenmiştir.

Bulgular

Araştırmaya dahil edilen 71 çocuğun 33(%46)'ü erkek, 38(%54)'ü kız, %88'inin çekirdek ailede, %12'sinin geniş ailede yaşadığı ve %50,7'sinde annenin ilkokul mezunu %32,4'ünde babanın ortaokul mezunu olduğu belirlenmiştir.

İnternet bağımlısı olarak nitelendirilebilecek çocuklarda görsel zekanın yaşıtlarına göre anlamlı olarak geri olduğu tespit edilmiştir.($p<0,05$). Bağımlılık ve diğer zeka alt türleri (bedensel, doğa, müziksel, sosyal, sözel, mantıksal, içsel)arasında anlamlı bir ilişki bulunamamıştır.

Sonuç

Zihinsel gelişimi engelleyen önlenebilir nedenlerin ortaya konması ve tedavinin planlanması, hem prognoz hem de ailenin eğitimi açısından faydalıdır. Uzun vadede bireyin teknoloji kullanımının risklerini bilip ona göre davranış modeli geliştirmesi yürütücü işlevlerin gelişimi açısından önemlidir.

Kaynakça:

1 *Ercan E., Pekcanlar Akay A.(ed)(2016),Çocuk ve Ergen Ruh Sağlığı ve Hastalıkları,Ankara,Çocuk ve Genç Psikiyatristi Derneği*

2 *Kol S.,(Mayıs 2011),Erken Çocuklukta Bilişsel Gelişim ve Dil Gelişimi,Sakarya Üniversitesi Eğitim Fakültesi Derneği*

3 *Rutter's Child and Adolescent Psychiatry 6. baskı,2015,Wiley-Blackwell*

FT25

Etiology and Neuruological Evaluation of Non-Cardiogenic Syncope in Children

Dr.Ülkühan ÖZTOPRAK

Dr.Sami Ulus Maternity, Child Healthy and Disease Education and Research Hospital, Pediatric Neurology Clinic

Aim: The aim of this study was to evaluate the clinical characteristics, etiology, and the value of neurologic investigations in the diagnosis of syncope in children.
Material and Method : The records of 218 patients (124 female, 94 male; mean age: 12.8 ± 4.1) admitted to our pediatric neurology outpatient clinic between January 2016 and December 2018 were retrospectively reviewed for age, sex, number of syncopal events, history of syncope, results of neurological diagnostic tests. Patients with known epilepsy, no eyewitness during syncope, and patients with structural heart disease or arrhythmia on cardiologic examination were excluded.
Results: Eighty six (39.4%) patients had one syncopal event, 80 (36.7%) patients had two, 31 (14.2%) patients had three and 21 (9.6%) patients had more than three syncopal attacks. Prodromal findings before syncope were present in 80 % of patients, urinary incontinence during syncope were present in 6%, motor findings were present in 18.3%, postsyncopal findings were present in 14.2%. Twenty-one (9.6%) patients had a family history of epilepsy. Electroencephalography (EEG) was performed in all patients and revealed epileptic discharges in 19 (8.7%) of them. Neuroimaging studies were performed in 97 (44.4%) patients and revealed incidental white-matter lesions in 10(10.3%), mega sisterna magna in 6(6.1%), asymmetry of the lateral ventricles in 5(5.1%), temporal lobe arachnoid cyst in 2(2%), hydrocephalus in 1 (1%), dysgenesis of corpus callosum in 1 (1%), eosinophilic granuloma in 1 (1%) and leukodystrophy in 1 (1%). The etiology was neurally mediated syncope in 181 patients (83%), convulsive/epileptic syncope in 19 patients (8.7%), psychogenic pseudosyncope in 16 patients (7.3%), metabolic in 1 patient (1%), drug induced syncope in 1 patient (1%).
Neurally- mediated syncope (NMS) was further grouped as vasovagal (n=172), reflex-anoxic (breath holding) (n=6), situational(post micturition syncope , n=6). It was seen that 79.7% of vasovagal syncopes were caused by postural orthostatic condition and 20.3% were caused by pain stimulation.
Conclusion: The history and comprehensive physical examination in children are in fact largely sufficient in the differential diagnosis of non-cardiogenic syncope. Although the contribution of neuroimaging to the etiology and diagnosis is very limited, electroencephalography may be helpful in diagnosis and treatment management in selected cases.

Key Words: *Child, Non-Cardiogenic Syncope , Neuruological Evaluation*

Çocuklarda Non-Kardiyojenik Senkopların Etiyolojisi ve Nörolojik Değerlendirmesi

Amaç: Dr.Sami Ulus Kadın Doğum,Çocuk Sağlığı ve Hastalıkları Eğitim Araştırma Hastanesi Çocuk Nöroloji Kliniğine Ocak 2016- Aralık 2018 tarihleri arasında senkop nedeniyle yönlendirilen hastaların dosya kayıt bilgileri geriye yönelik olarak değerlendirilerek yapılan nörolojik incelemelerin tanısal değerinin belirlenmesi amaçlandı.

Yöntem: Hastaların yaş, cinsiyet, öykü, elektroensefalografi, nörogörüntüleme bulguları geriye dönük olarak incelendi. Bilinen epilepsi tanısı olan hastalar, senkop esnasında görgü tanığı olmayanlar ve kardiyolojik incelemede yapısal kalp hastalığı veya aritmi saptanan hastalar değerlendirme dışı bırakıldı.
Bulgular: Yaşları 1 yaş-17,9 yaş (124 kız, 94 erkek, ortalama yaş; 12,8 ± 4,1) olan 218 çocuk hasta değerlendirildi. Senkop öncesi prodromal bulgular hastaların %79.8'inde, senkop esnasında idrar inkontinası %6'sında, motor bulgular % 18.3'ünde, postsenkopal bulgular % 14.2'sinde mevcuttu. Yirmibir(%9.6) hastada ailede epilepsi öyküsü vardı. Hastaların tamamına elektroensefalografi (EEG) incelemesi yapıldı ve bunların 19'unda (%8.7) epileptik aktivite görüldü. Nörogörüntüleme yapılan 97 (%44.4) hastanın 10'nunda(%10.3) rastlantısal nonspesifik beyaz cevher lezyonları, 6'sında (%6.1) mega sisterna magna, 5'inde(%5.1) lateral ventriküllerde asimetri, 2'sinde(%2) posterior terminal miyelizinasyon bulguları, 2'sinde(%2) temporal yerleşimli araknoid kist, 1'inde(%1) hidrosefali, 1'inde(%1) korpus kallozum disgenezisi, 1'inde(%1) eozinofilik granülom, 1'inde(%1) lökodistrofi saptandı. Senkop nedenleri sırasıyla nöral aracılı senkop (n=181), konvülzif senkop (n=19), psikojenik pseudosenkop (n=16), metabolik senkop (n=1), ilaç-madde kullanımı ilişki (n=1) senkop olarak belirlendi. Nöral aracılı senkoplar kendi içinde vazovagal senkop (n=172), refleks-anoksik (katılma nöbeti) senkop (n=6), miksiyon ilişkili durumsal senkop (n=6) olarak gruplandırıldı. Vazovagal senkopların %79.7'sinin postural ortostatik durum ile, %20.3'ünün ağrı-acı uyarısı ile meydana geldiği görüldü.

Sonuç: Çocuklarda ayrıntılı fizik muayene ve öykü esasında non-kardiyojenik senkopların ayırıcı tanısının yapılmasında büyük ölçüde yeterlidir. Nörogörüntülemenin etiyoloji ve tanı tespitine katkısı oldukça sınırlı olmakla birlikte seçilmiş vakalarda elektroensefalografi tanıda ve tedavi yönetiminde fayda sağlayabilir.

***Anahtar kelimeler**: Çocuk, Non-kardiyojenik Senkop, Nörolojik Değerlendirme*

Introduction: Syncope is defined as a sudden, self-limited loss of consciousness and postural tone followed by spontaneous and complete recovery without any neurological sequelae(1). It is one of the most common paroxysmal disorders in children and adolescents, and approximately 30-50% of children have experienced at least one syncope in their lives till the adolescent period. The common unifying mechanism is transient global hypoperfusion of the brain. The three major causes of syncope in children are neurally mediated syncope, cardiovascular syncope and other non-cardiovascular causes. The most common cause of syncope in adults is cardiac causes, whereas neural mediated syncopes are the most common cause of syncope in childhood. Neuronal mediated syncope is often confused with epileptic seizures in children. On the other hand, seizures can mimic syncope in upto 5% of cases(2). It should be kept in mind that syncope is not a disease itself but a symptom of an underlying disorder.Hence, all children with syncope require assessment to exclude an underlying life-threatening cardiac or non-cardiac disorder. The etiology and classification of childhood syncope are summarized in Table 1. The aim of this study was to evaluate the clinical characteristics, etiology, and the value of neurologic investigations in the diagnosis of syncope in children.

Material and Method : The records of 218 patients (124 female, 94 male; mean age: 12.8 ± 4.1) admitted to our pediatric neurology outpatient clinic between January 2016 and December 2018 were retrospectively reviewed for age, sex, number of syncopal events, history of syncope, results of neurological diagnostic tests. Patients with known epilepsy, no

eyewitness during syncope, and patients with structural heart disease or arrhythmia on cardiologic examination were excluded. The nausea, epigastric discomfort, visual blurring, dizziness, sweating, hyperventilation, pallor, cold skin were defined as prodromal symptoms. Tonic spasms of muscles, focal or generalized clonic contractions, uprolling of eyes and involuntary micturition were defined as seizure- like activity.

Results: A total of 218 patients (124 female, 94 male; mean age: 12.8 ± 4.1) were included in the study. Eighty six (39.4%) patients had one syncopal event, 80 (36.7%) patients had two, 31 (14.2%) patients had three and 21 (9.6%) patients had more than three syncopal attacks. Prodromal findings before syncope were present in 80 % of patients, urinary incontinence during syncope were present in 6%, motor findings were present in 18.3%, postsyncopal findings were present in 14.2%. Twenty-one (9.6%) patients had a family history of epilepsy. Demographic and clinical characteristics are summarized in Table 2. Electroencephalography (EEG) was performed in all patients and revealed epileptic discharges in 19 (8.7%) of them. Sixty-three percent of these epileptic discharges were generalized epileptiform activity and 37% were focal epileptiform activity. Seventeen of 19 patients with epileptic discharge in EEG were diagnosed with epilepsy and antiepileptic drug treatment was initiated. Neuroimaging studies were performed in 97 (44.4%) patients and revealed nonspecific white-matter lesions in 10(10.3%), mega sisterna magna in 6(6.1%), asymmetry of the lateral ventricles in 5(5.1%), temporal lobe arachnoid cyst in 2(2%), hydrocephalus in 1 (1%), dysgenesis of corpus callosum in 1 (1%), eosinophilic granuloma in 1 (1%) and leukodystrophy in 1 (1%). The etiology was neurally mediated syncope in 181 (83%) patients, convulsive/epileptic syncope in 19(8.7%) patients , psychogenic pseudosyncope in 16 (7.3%) patients , metabolic in 1(1%) patient , drug induced syncope in 1 (1%) patient. Neurally- mediated syncope was further grouped as vasovagal (n=172), reflex-anoxic (breath holding) (n=6), situational (post micturition syncope , n=3) (Table3) . It was observed that 79.7% of vasovagal syncopes were caused by postural orthostatic condition and 20.3% were caused by pain stimulation. Younger children were more likely to have a breath-holding spells ($P < .0001$), whereas older children were more likely to have NMS ($P < 0.01$) or a psychogenic cause ($P = 0.04$). Recurrence of the syncopal events and prodromal findings were associated with the neurally mediated syncope ($p= 0.027$, $p<0.01$, respectively). Prolonged upright posture were clearly related to the NMS group($p<0.01$). Seizure- like motor activity was related to the convulsive/epileptic syncope($p<0.01$).

Discussion : Syncope is a common event in the pediatric population and should be considered as an important health concern(3). Syncope is seen in 15–25% of children and adolescents with a female preponderance. Neurally mediated syncope is the most frequent cause of pediatric syncope and occurs in 64-75% of all cases. A syncopal event is typically preceded by a ‘prodromal phase’ characterized by non-specific symptoms such as nausea, epigastric discomfort, visual blurring, dizziness, sweating, hyperventilation, pallor, cold skin or weakness that can last few seconds up to 1–2 min. The loss of consciousness is usually brief, followed by rapid spontaneous recovery without neurologic deficits(4). In our study, neurally mediated syncopes were the most common etiologic cause(83%) and these prodromal findings before syncope were present in 80% of our patients.
It is important to clinically differentiate between an epileptic and a syncopal attack. In general, epileptic attacks may occur irrespective of the sleep-awake state and the position of the patient. Repeated spells of unconsciousness at a rate of several attacks per month are more likely to be epileptic. Syncope, on the other hand, rarely occurs when the patient

is recumbent or asleep and it is commonly situational. Tonic spasms of muscles, focal or generalized clonic contractions, uprolling of eyes and involuntary micturition are common manifestations of epileptic attacks. Whereas these manifestations occur rarely and in later stages of syncope(5). Most of our patients with vasovagal syncope had syncope attacks while standing for a long time and seizure- like motor activities were related to the convulsive/epileptic syncope.

An electroencephalograph may show various types of epileptiform activities in the brain. Several studies have shown that the diagnostic value of EEG is as low as 1.5% in patients presenting with syncope(6,7). However, a study reported that 14.3% of patients were diagnosed with epilepsy(8). In our study, seventeen of 19 patients with epileptic discharge in EEG were diagnosed with epilepsy and antiepileptic drug treatment was initiated. Two other patients with epileptic activity on EEG were clinically diagnosed as vasoovagal syncope and antiepileptic drug treatment was not initiated. Therefore, electroencephalography may be used when there is a strong suspicion of an underlying seizure. Neuroimaging is a widely used method for evaluation in children presenting with syncope. However, the diagnostic value of neuroimaging is very low(9). In our study, nonspecific white matter lesions were mostly observed and these findings were not related to diagnosis.

Conclusions : Syncope is one of the most common paroxysmal disorders in children and adolescents. Neural mediated syncopes are the most common cause of syncope in childhood . The key to diagnosis is detailed history and comprehensive physical examination. However, it is important to evaluate each child since syncope may be the first warning sign of a serious underlying disease. Syncope must also be differentiated from epilepsy, which is an important cause of transient alterations in the level of consciousness. Although the contribution of neuroimaging to the etiology and diagnosis is very limited, electroencephalography may be helpful in diagnosis and treatment management in selected cases.

Table 1. The classification of syncope in childhood

Neurally mediated syncope
1. Neurocardiogenic (vasovagal)
2. Situational syncope
3. Carotid sinus syncope
4. Glossopharyngeal and trigeminal neuralgia syncope
Cardiogenic syncope
Non-cardiogenic syncope
1. Orthostatic hypotensive syncope
2. Postural orthostatic tachycardia syndrome
3. Metabolic reasons of syncope
4. Psychogenic syncope
5. Drug-induced syncope
6. Triggered reflex syncope
8. Hyperventilation-induced syncope
9. Neurologic Syncope
Cerebrovascular diseases
Increased intracranial pressure
Seizure

Table2. Demographic and clinical characteristics of patients

	Number(%)
Sex	
Female	124 (56.9)
Male	94 (43.1)
Age	12.8 ± 4.1 years
Age groups	
1-4	15 (6.9)
5-9	39 (17.9)
10-14	95 (43.6)
>15	69 (31.7)
Number of attacks	
1	86 (39.4)
2	80 (36.7)
3	31 (14.2)
>3	21 (9.6)
Family history of epilepsy	21 (9.6)
Prodromal symptoms	174 (80)
Incontinence	13 (6)
Seizure-like motor activity	40 (18.3)

Table 3. Etiology of syncope

	Number(%)
Neurally mediated syncope	181(83)
Neurocardiogenic (vasovagal)	172(95)
Refleks anoxic syncope	6(3.3)
((Breath-holding spells)	
Situational syncope	3(1.7)
Epileptic syncope	19(8.7)
Psychogenic syncope	16(7.3)
Metabolic syncope	1 (1)
Drug induced syncope	1(1)

References

1. *Feit LR. Syncope in the pediatric patient: diagnosis, pathophysiology, and treatment. Adv Pediatr 1996;43:469–94.*
2. *Kanjwal K, Calkins H. Syncope in children and adolescents. Cardiac Electrophysiol Clin 2013;5:443–55.*
3. *Driscoll DJ, Jacobsen SJ, Porter CJ, Wollan PC. Syncope in children and adolescents. J Am Coll Cardiol 1997;29:1039–45.*
4. *Friedman NR, Ghosh D, Moodley M. Syncope and paroxysmal disorders other than epilepsy. In: Swaiman KF, Ashwal S, Ferriero DM, Schor NF, editors. Swaiman's Pediatric Neurology: Principles and Practice. 5th ed. China: Elsevier, Inc; 2012. p. 906–10*
5. *Singhi P, Saini AG. Syncope in Pediatric Practice. Indian J Pediatr 2018 ;85(8):636-640.*
6. *Matoth I, Taustein I, Kay BS, Shapira YA. Overuse of EEG in the evaluation of common neurologic conditions. Pediatr Neurol 2002;27:378–83.*
7. *Steinberg LA, Knilans TK. Syncope in children: Diagnostic tests have a high cost and low yield. J Pediatr 2005;146:355–8.*
8. *Bayram E, Kır M, Topçu Y, Akıncı G, Hız S, Sağın Saylam G. Senkop yakınması ile başvuran olguların retrospektif değerlendirilmesi. Turkiye Klinikleri J Pediatr 2011;20:210-3.*
9. *Steinberg LA, Knilans TK Syncope in children: diagnostic tests have a high cost and low yield. J Pediatr 2005 ; 146:355–358*

FT26

Ergenlerde Bağlanma Ve Aile Aidiyetinin İlişkisinin İncelenmesi

The Relationship Between Attachment and Family Belonging in Adolescents

**Durmuş Ali İLİK **Nur Feyzal KESEN*

Bu çalışmada, bağlanma ve aile aidiyeti kavramlarının bazı değişkenlerle farklılaşıp farklılaşmadığına ve arasındaki ilişkiye bakılması amaçlanmıştır. Kahramanmaraş İli Elbistan ilçesinde Lise düzeyinde eğitim gören kişilere, bağlanma ve aile aidiyetlerini ölçmek üzere araştırmacılar tarafından hazırlanan anket ve ölçekler uygulanmıştır.
Nicel araştırma tasarımlarından tarama yöntemi kullanılmıştır. Çalışma sonucunda lise öğrencilerinin saplantılı bağlanma ve aile aidiyeti arasında negatif anlamlı bir ilişki bulunmuştur. Ayrıca kardeş sayısı arttıkça aile aidiyeti düşmektedir. Erkeklerin saplantılı bağlanmaları ve güvenli bağlanma stilleri daha yüksek iken kızların korkulu bağlanmaları ve kendilik aidiyeti puan ortalamaları daha yüksek çıkmıştır.

Anahtar Sözcükler: *Aile; Aile Aidiyeti; Bağlanma Stilleri;Ergenlerde Bağlanma.*

In this study, it is aimed to examine whether the concepts of attachment and family belonging differ with some variables and the relationship between them. Kahramanmaraş İli, Elbistan ilçesinde Lise düzeyinde eğitim gören kişilere, "bağlanma ve aile aidiyetlerini ölçmek" üzere araştırmacılar tarafından hazırlanan anket ve ölçekler uygulanmıştır.
Screening method was used in quantitative research designs. Çalışma sonucunda lise öğrencilerinin saplantılı bağlanma ve aile aidiyeti arasında negatif anlamlı bir ilişki bulunmuştur. İn addition, as the number of siblings increases, family belonging decreases. While the boys 'obsessive attachment and secure attachment styles were higher, the girls' fearful attachment and self-belonging scores were higher.

Key Words*: Attachment; AttachmentStyles; Family; FamilyBelonging.*

Giriş

İnsanın sosyal bir varlık olması ve yalnız yaşayamaması, diğer insanlarla yakın ilişki içerisinde olmasını zorunlu kılar. Özellikle bebeklik veya çocukluk döneminde ebeveynlerle kurulan güvenli "bağ", kurulan ilişkilerin sağlıklı olabildiğine işaret etmektedir. İnsanın özellikle yakın çevresi ile kurduğu bu ilişki geri kalan yaşamımızın şekillenmesi adına ayrı bir yere sahiptir (Hamarta 2009). Bağlanma yalızca çocukluk ile sınırlı olmayıp yaşam boyunca sürer. Bağlanma sürerken doğası ve ifade ediliş şekli değişir. İlk temel ilişki olan anne çocuk ilişkisi, sonraki yaşam dönemlerindeki bağlanmalar için örnek olur (Collins and Laurson 2003). Bu açıdan bakıldığında kişiliğin gelişmesinde doğumundan itibaren anne ve çevreyle kurulan ilişkin etkisi göz ardı edilemez. Temelde güvenli ve güvensiz olmak üzere iki bağlanma türünden bahseden araştırmacılar (Ainsworth ve ark. 1978). Güvenli bağlanmayı, çocukluk döneminde çocuğu temel ihtiyaç ve gereksinimlerini zamanında ve yeterince karşılayan kişiye karşı geliştirilen bir bağlanma türü olarak tanımlarken güvensiz bağlanmayı bunun tam tersi özellikleri sergileyen çocuğa temel bakımını veren kişilere karşı geliştirilen bir bağlama türü olarak tanımlamaktadırlar. Bunun yanında güvenli bağlanma sağlıklı süreçlerle ilişkilendirilmiştir. Doğanın özgün modeli ise güvenli bağlanmadır (Kesebir ve ark. 2011). Bağlanma araştırmalarının kurucusu ve öncüsü ve bağlanma teorisinin geliştiricisi olan İngiliz psikiyatrist ve psikanalist John Bowlby'e göre bağlanma, biyolojik temelli bir

deneyimdir. Çocukların, ebeveynlerinden ayrıldıklarında ve ebeveynleri ile tekrar bir araya geldiklerinde davranışları farklıdır. Bowlby, büyümekte olan çocuğun ruh sağlığının, doğumundan sonra bakımını üstlenen kişi ile kurduğu ilişkinin (çocuğun birçok duygusal açıdan tatmin edilmesi) etkisinin öneminden bahsetmektedir (Bowlby 1969). İnsanoğlunun ilk aidiyet arayışı içine girmesi, ailesinde annesi ile yakınlık kurması sonucu güvenli bağlanmanın gerçekleşmesi ile oluşur. Kişi bebeklik ve çocukluk döneminde, özellikle hayatının ilk dört yılında, annesi ile ne kadar güvenli bağlanırsa, ailesine de o kadar güvenli bağlanmış olur (Güneş 2016).

Geleceğin nesillerini oluşturacak olan çocukların sağlıklı gelişebilmeleri için yapı taşı olan ailenin çeşitli nedenlerden dolayı sorunlar yaşadığı durumlarda veya çocuklarının temel sevgi ve diğer gereksinimlerini karşılayamaz hale geldiğinde bu kötü koşulların azaltılması için gerekli çalışmalar yapılmalıdır (Yaban ve Yükselen 2007). Sosyal hizmetin çevresi içinde birey anlayışı, sosyal hizmet uzmanlarının meseleye çok odaklı (Multifocal) yaklaşmasını gerektirmektedir. Örneğin bir aileye sadece ekonomik destek veriyor olmak onun bütüncül iyilik halinin sağlanacağı anlamına gelmemelidir. Ailenin yaşadığı sorunlar ile mücadele edebilmesi ve güçlendirilmesi adına Sosyal Hizmet uygulamalarının gerekliliği ve önemi, aile kurumunun yaşanılan sorundan olumsuz etkilenmesini önüne geçmek ya da süreci en az olumsuz etki ile atlatılmasını sağlamak adına önemlidir (Bulut 1993; Simons 1999; Özyürek 2005). Aileye yönelik birçok kuramsal yaklaşım bulunmaktadır. Bu kuramsal modellerden en önemlisi sistem kuramı olarak karşımıza çıkmaktadır. Sistem düşüncesiyle birlikte aile tedavisinde bütünleştirici bir çerçeve izlenmiştir. Sistem yaklaşımı aileyi çevresiyle ve birbirleriyle ilişki ve etkileşim içinde bulunan parçaların oluşturduğu dinamik bir bütün olarak ele alır. Aile de yer alan alt sistemlerin (anne-baba-çocuklar...) bir işlevi, dolayısıyla bir amacı vardır ve her bir aile kendine özgü bir amaç etrafında şekillenmektedir (Mavili Aktaş 2004).

Bağlanma ve aidiyet ilişkisinin temelini güven duygusu oluşturur. Güven duygusunu sağlıklı bir şekilde yerleştirmiş çocuklarda bağlanma gerçekleşir. Daha sonra çocuk büyüdükçe bağlanma da aidiyete evrilir. Çocuk bağlanmalarla kendisine bir çevre oluşturur (Güneş 2018). Çocuk ancak böyle bir aidiyet hissederse, içinde bulunduğu bu toplumun kural ve kaidelerini ve bu toplumda neleri yapıp neleri yapamayacağını fark eder. Bu noktada çocuk, ait olmak için o topluma uyum sağlayacak ve o toplumun faydalı bir üyesi olabilmek için çaba harcayacaktır. Çünkü toplum onun için faydalıdır (Ruppert 2014). Çoğu toplumda, çocuğun aile yapısındaki yerini alması, baba soyuna bağlanma ile olur. Ailenin kendisinden daha geniş olan topluluklarla bütünleşmesi ölçüsünde de çocuk o toplulukta yerini alır. Çocuk ancak böyle bir aidiyet hissederse, içinde bulunduğu bu toplumun kural ve kaidelerini ve bu toplumda neleri yapıp neleri yapamayacağını fark eder. Bu noktada çocuk, ait olmak için o topluma uyum sağlayacak ve o toplumun faydalı bir üyesi olabilmek için çaba harcayacaktır. Çünkü toplum onun için faydalıdır (Ruppert 2014).

Yöntem

Bu araştırma genel tarama modeli kapsamında yürütülmüştür. Araştırmanın değişkenleri aile aidiyeti ve bağlanma stilleridir. Ayrıca arasındaki aidiyet ve bağlanma stilleri arasındaki ilişkinin incelenmesi nedeniyle araştırmada tarama modellerinden ilişkisel tarama modeli kullanılmıştır. Birkaç faklı bağımsız değişken kullanılarak cinsiyet, kardeş sayısı vs. ile aidiyet ve bağlanma stilleri arasındaki ilişkiye bakıldığı içinde karşılaştırma türü tarama yöntemi kullanılmış ve veriler bu doğrultuda analiz edilmiştir.

Bu çalışmanın evren kitlesini Kahramanmaraş ili Elbistan ilçesinde bulunan farklı türlerdeki liselerde eğitim gören 1417 lise son sınıf öğrencisi oluşturmaktadır. Bu çalışmada ulaşılmayı hedeflenen evren kitlesinden örneklem hesabı yapılmış ve evreni temsil edebilmek için 566 öğrenciye ulaşılması gerektiği görülmüştür.

Veri toplama aracı olarak araştırmacılar tarafından oluşturulan kişisel bilgi formu ve aile aidiyeti ölçeği ve yakın ilişki ölçeği kullanılmıştır. Mavili ve ark. tarafından oluşturulan Aile Aidiyeti Ölçeği, 17 madden oluşan beşli likert tipi bir ölçektir. 5, 7, 9, 12. maddeler olumsuz maddeler olup, tersten hesaplanmaktadır. 1, 3, 4, 6, 7, 10, 11, 12, 13, 14, 15 ve 17. Maddelerin toplamı "kendilik aidiyet alt boyutu" ölçerken, 2, 5, 8 ve 16. maddeler de "aile aidiyeti alt boyutunu ölçmektedir. Her iki boyuttaki maddelerin toplamı "aile aidiyeti toplam puanını" vermekte olup, puan arttıkça aile aidiyeti de artmaktadır. Mavili ve arkadaşları tarafından yapılan çalışmalarda test ölçümlerinin güvenilirlik katsayısı 0,94 olduğu görülmektedir. Yapılan bu araştırmada da Aile aidiyeti Ölçeğinin toplam puanında test ölçümlerinin güvenirlik katsayısı,919, Kendilik Aidiyeti alt boyutu için 914 ve Aile Aidiyeti alt boyutu için,717 olarak bulunmuştur. İlişki Ölçekleri Anketinde ise:Öğrencilerin, bağlanma sitillerinin (güvenli, kayıtsız, korkulu, saplantılı) belirlenmesi için Griffin ve Bartholomew (1994) tarafından geliştirilen ve Ölçeğin Türkçe'ye uyarlaması ise Sümer ve Güngör (1999) tarafından yapılan ve "(1) beni hiç tanımlamıyor", "(7) tamamen beni tanımlıyor" aralığından oluşan likert tipi ve 17 maddeden oluşan İlişki Ölçekleri Anketi uygulanmıştır. Güvenli ve kayıtsız bağlanma sitilleri beşer madde ile ölçülürken, saplantılı ve korkulu bağlanma sitilleri dörder madde ile ölçülmektedir. Ölçeğin tekrar test yöntemi ile tüm boyutlarda güvenilirlik kat sayıları.54 ile.78 arasında bulunmuştur (Sümer ve Güngör, 1999). Yapılan bu araştırmada da Ölçeğin test ölçümlerinin güvenirlik katsayısı Kayıtsız Bağlanma alt boyutu için,520, Saplantılı Bağlanma alt boyutu için,263, Güvenli Bağlanma alt boyutu için,529, Korkulu Bağlanma alt boyutu için,405 olarak bulunmuştur.

Bulgular

Tablo 1:Katılımcıların Bağlanma Türleri ve Aile Aidiyeti Puanlarına İlişkin Korelasyon Bulguları

		1	2	3	4	5	6	7	8	9	10
1.Korkulu Bağlanma	r										
	p										
2.Kayıtsız Bağlanma	r	,421**									
	p	,000									
3.Saplantılı Bağlanma	r	-,240**	-,284**								
	p	,000	,000								
4.Güvenli Bağlanma	r	-,204**	-,175**	,479**							
	p	,000	,000	,000							
5.Aile Aidiyeti Ölçek Toplam Puanı	r	-,020	-,044	-,138**	-,028						
	p	,630	,297	,001	,508						
6.Kendilik Aidiyeti Alt Boyutu	r	-,011	-,042	-,111**	-,021	,972**					
	p	,798	,320	,008	,624	,000					
7.Aile Aidiyeti Alt Boyutu	r	-,037	-,039	-,168**	-,038	,857**	,711**				
	p	,382	,349	,000	,366	,000	,000				
8.Anneile yaş farkı?	r	,052	-,110*	,113**	,024	-,006	-,008	,001			
	p	,227	,010	,009	,586	,893	,847	,985			
9.Baba ile yaş farkı?	r	,080	-,066	,048	,024	-,033	-,028	-,038	,797**		
	p	,063	,126	,269	,575	,442	,518	,377	,000		
10.Kardeş Sayısı	r	-,002	,037	,069	,036	-,162**	-,154**	-,148**	,255**	,268**	
	p	,958	,385	,101	,394	,000	,000	,000	,000	,000	

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Tablo 1 incelendiğinde lise öğrencilerinin Aile Aidiyeti Ölçeğinden aldıkları toplam puan ile İlişki Ölçekleri Anketinin Korkulu (r=-0,020; p>0,05), Kayıtsız (r=-0,044; p>0,05) ve Güvenli (r=-0,028; p>0,05) Bağlanma alt boyutlarından aldıkları puanlar arasında anlamlı bir ilişki bulunmazken Saplantılı Bağlanma (r=-0,138; p<0,01) alt boyutu arasında düşük düzeyde negatif yönde anlamlı bir ilişki bulunmuştur. Buna göre aile aidiyeti arttıkça saplantılı bağlama oranı düşmektedir. Benzer şekilde öğrencilerin Aile Aidiyeti Ölçeğinin Kendilik Aidiyeti ve Aile Aidiyeti alt boyutlarından aldıkları puanlar ile İlişki Ölçekleri Anketinin Korkulu (r sırasıyla= -0,011, -0,037; p>0,05), Kayıtsız (r sırasıyla= -0,042, -0,039; p>0,05) ve Güvenli (r sırasıyla= -0,021, -0,038; p>0,05) Bağlanma alt boyutlarından aldıkları puanlar arasında anlamlı bir ilişki bulunmazken Saplantılı Bağlanma (r sırasıyla = -0,111, -0,168; p<0,01) alt boyutu arasında düşük düzeyde negatif yönde anlamlı bir ilişki bulunmuştur. Buna ilişkin aile aidiyeti arttıkça saplantılı bağlanma oranının düştüğü söylenebilir.

Öğrencilerin anneleriyle olan yaş farkının korelasyonuna bakıldığında İlişki Ölçekleri Anketinin Korkulu (r=0,052; p>0,05), ve Güvenli (r=0,024; p>0,05) Bağlanma alt boyutlarından aldıkları puanlar ile Aidiyeti Ölçeğinin toplam puanı (r=-0,006; p>0,05) Kendilik (r=-0,008; p>0,05) ve Aile (r=0,001; p>0,05) Aidiyeti alt boyutlarından aldıkları puanlar arasında anlamlı bir ilişkiye rastlanmamıştır. Buna karşın öğrencilerin anneleriyle olan yaş farkı ile İlişki Ölçekleri Anketinin Kayıtsız Bağlanma (r=-0,110; p<0,05) alt boyutunda arasında düşük düzeyde negatif yönde anlamlı bir ilişki bulunmuştur. Buna göre yaş farkı arttıkça kayıtsız bağlanma da düşmektedir. Saplantılı (r=0,113; p<0,01) Bağlanma alt boyutunda ise düşük düzeyde pozitif yönde anlamlı bir ilişki bulunmuştur. Bulguya göre anne ile olan yaş farkı artıkça saplantılı bağlanma da artmaktadır.

Tablodaki bir diğer korelasyonun da öğrencilerin babalarıyla olan yaş farkı ve ölçek puanları arasında olduğu görülmektedir. Öğrencilerin babalarıyla olan yaş farkı ile İlişki Ölçekleri Anketinin Korkulu (r=0,080; p>0,05), Kayıtsız (r=-0,066; p>0,05), Saplantılı (r=0,048; p>0,05), ve Güvenli (r=0,024; p>0,05) Bağlanma alt boyutlarından aldıkları puanlar ile Aile Aidiyeti Ölçeğinin toplam puanı (r=-0,033; p>0,05) Kendilik (r=-0,028; p>0,05) ve Aile (r=-0,038; p>0,05) Aidiyeti alt boyutlarından aldıkları puanlar arasında anlamlı bir ilişkiye rastlanmamıştır. Katılımcıların kardeş sayısı ve aldıkları puanlar arasındaki ilişkiye bakıldığında İlişki Ölçekleri Anketinin Korkulu (r=-0,002; p>0,05), Kayıtsız (r=0,037; p>0,05), Saplantılı (r=0,069; p>0,05), ve Güvenli (r=0,036; p>0,05) Bağlanma alt boyutlarından aldıkları puanlar arasında anlamlı bir ilişkinin olmadığı görülmektedir. Buna karşın Aile Aidiyeti Ölçeğinin toplam puanı (r=-0,162; p<0,01) Kendilik (r=-0,154; p<0,01) ve Aile (r=-0,148; p<0,01) Aidiyeti alt boyutlarından aldıkları puanlar arasında düşük düzeyde negatif yönde anlamlı bir ilişki bulunmuştur. Bu açıdan kardeş sayısı arttıkça aileye olan aidiyetin de azaldığı yorumu yapılabilir.

Tablo 2:Cinsiyete Göre Bağlanma Türleri ve Aile Aidiyeti Puanlarının Dağılımı

Cinsiyet		n	Ort.	S.S.	t	p
İÖA Korkulu Bağlanma	Erkek	293	12,7133	3,98194	-2,618	0,009
	Kadın	273	13,6081	4,14935		
İÖA Kayıtsız Bağlanma	Erkek	293	23,2423	5,56709	-1,416	0,157
	Kadın	273	23,9597	6,41533		
İÖA Saplantılı Bağlanma	Erkek	293	14,3549	4,76829	2,635	0,009
	Kadın	273	13,3443	4,32317		
İÖA Güvenli Bağlanma	Erkek	293	17,1945	5,89692	3,688	0,000

	Kadın	273	15,3004	6,32263		
Aile Aidiyeti Ölçek Toplam Puan	Erkek	293	68,6689	13,61064	-1,419	0,156
	Kadın	273	70,1429	11,03827		
AAÖ Kendilik aidiyeti	Erkek	293	50,3379	10,06920	-2,097	0,036
	Kadın	273	51,9304	7,93718		
AAÖ Aile aidiyeti	Erkek	293	18,3311	4,32137	0,338	0,736
	Kadın	273	18,2125	4,01270		

Tablo 2'de katılımcıların cinsiyet değişkeni açısından, bağlanma stilleri ve aile aidiyetine ait puan ortalamalarının anlamlı düzeyde farklılaşıp farklılaşmadığını belirlemek amacıyla bağımsız gruplar t testi yapılmıştır. Bunun sonucunda İlişki Ölçekleri Anketinin Korkulu (t= -2,61 p<0.05), Saplantılı (t= 2,63 p<0.05) ve Güvenli (t= 3,68 p<0.05) Bağlanma alt boyutlarının anlamlı derecede farklılaştığı görülmüştür. Korkulu Bağlanma alt boyutunda erkeklerin ölçek puan ortalaması ($\overline{X}$=12,71) kadınların ölçek puan ortalamasından ($\overline{X}$=13,60) anlamlı derecede düşük çıkarken Saplantılı ve Güvenli Bağlanmada erkeklerin aldıkları ölçek puan ortalamaları ($\overline{X}$ sırasıyla=14,35-17,19) kadınlarınkinden ($\overline{X}$=13,34-15,30) daha yüksek çıkmıştır. Kayıtsız Bağlanma (t= 0,15 p>0.05) alt boyutunda, Aile Aidiyet Ölçeğinin toplam puanı (t= 0,15 p>0.05) ve Aile Aidiyeti (t= 0,73 p>0.05) alt boyutunda anlamlı bir farklılığa rastlanmamıştır. Aile Aidiyeti Ölçeğini Kendilik alt boyutunda erkeklerin ölçek puan ortalaması ($\overline{X}$=50,33) kadınların ölçek puan ortalamasından ($\overline{X}$=51,93) anlamlı düzeyde daha düşük çıkmıştır.

Kaynakça

1 *Ainsworth MDS, Blehar MC, Water E ve Wall S, 1978. Patterns of attachment: A psychological study of the strange situation. Hillsdale, NJ: Erlbaum.*

2 *Bowlby J, 1969. Attachment and Loss: Vol. 1 attachment. (Çev. Tuğrul Veli Soylu(2012)), Pinhan Yayıncılık, 3. Baskı, İstanbul*

3 *Bulut, I. 1993, Ruh Hastalığının Aile İşlevlerine Etkisi. Başbakanlık Kadın ve Sosyal Hizmetler Müsteşarlığı Yayınları Ankara.*

4 *Collins NL, Laurson W. Adolescents' relationships with parents. J Lang Soc Psychol 2003. 22: 58-65.*

5 *Griffin, D., and Bartholomew, K. (1994). Models of self and other: Fundamental dimensions underlying measures of attachment.* J. Personal. Soc. Psychol. *67: 430-445.*

6 *Güneş A, 2016. Aile ile bağlanma. Timaş Yayınları, 4. Baskı, İstanbul.*
Güneş A, 2018. Güvenli bağlanma. Timaş Yayınları, 15. Baskı, İstanbul.

7 *Hamarta E, Deniz ME, Saltalı N, 2009. Attachment styles as a predictor of emotional intelligence. Educational Sciences: Theory & Practice, 213-229.*

8 *Kesebir S, Kavzoğlu S ve Üstündağ MF, 2011. Bağlanma ve psikopatoloji. Psikiyatride Güncel Yaklaşımlar, 3.2:321-342.*

9 *Mavili Aktaş, A., 2004. Aile terapisinde sosyal hizmet yaklaşımı. Sosyal Politika Çalışmaları Dergisi, 7(7).*

10 *Özyürek A. ve Tezel Şahin, F. 2005. 5-6 Yaş Grubunda Çocuğu Olan Ebeveynlerin Tutumlarının İncelenmesi. Gazi Eğitim Fakültesi Dergisi, 25(2),19-34.*

11 *Ruppert F, 2014. Travma, bağlanma ve aile konstellasyonları, Çeviri: Fatma Zengin, Kaknüs Yayınları, 2. Baskı, İstanbul.*

12 *Simons-Morton B.G., Crump, A. D.,Haynie, D.L. & Saylor, K. E. 1999. Studentschool Bonding And Adolescent Problem Behavior. Health Education Research, 14,(1),99-107.*

13 *Sümer N, Güngör D, 1999. The psychometric assessment of adult attachment styles scales on Turkish sample and a cross-cultural comparison. Turkish Journal of Psychology, 14.43:71-106.*

14 *Yaban, E. H., & Yükselen, A. 2007 Korunmaya Muhtaç Yedı-On Bır Yaş grubundaki çocukların Sosyal Problem Çözme becerilerinin incelenmesi. Journal of Society & Social Work, 18(1).*

FT27

Türkiye'de Çocuk Sağlığı Hemşireliği Uygulamalarında Oyun Terapisinin Kullanımı: Literatür İncelemesi

Hatice YUMRU[1], Şerife KOÇ[2]

[1]Karamanoğlu Mehmetbey Üniversitesi, Sağlık Bilimleri Enstitüsü, Çocuk Sağlığı ve Hastalıkları Hemşireliği, Yüksek Lisans Öğrencisi, Karaman

[2]Karamanoğlu Mehmetbey Üniversitesi, Sağlık Bilimleri Fakültesi, Hemşirelik Bölümü, Karaman

Amaç: Çocuklar için yaşamın temel kaynağı olan oyun çocuğun işi oyuncak ise en önemli aracıdır. Bu yüzden çocuk sağlığı hemşireliği uygulamalarında bakımın önemli parçalarından biri haline gelen oyun terapisi çocuğun tüm yaşam dönemlerinde ve yaşadığı tüm sorunlarda kullanılabilecek en iyi uygulamalardandır. Hemşireliğin sanatsal yönünü destekleyen oyun terapisi hemşirelikte noninvaziv bir rahatlatma tekniği olarak kullanılmaktadır. Bu sistematik derlemenin amacı; Türkiye' de çocuk sağlığı hemşireliği alanında oyun terapisi kullanılarak yapılan araştırmaların incelenmesidir.

Yöntem: Tanımlayıcı tipteki çalışmada; Türkiye'de çocuk sağlığı alanında oyun terapisi kullanılarak yapılan 2005-2019 yıllarında yayınlanmış, tam metnine ulaşılabilen hemşirelik araştırmaları örneklemi oluşturmuştur. Araştırmalara Temmuz-Ekim 2019 tarihleri arasında Pubmed, Ulakbim, Türk Medline, Ulusal Tez Tarama Merkezi veri tabanlarında Türkçe "Türkiye, hemşirelik, oyun terapisi, çocuk sağlığı"; İngilizce "Turkey, nursing, play therapy, child health" anahtar kelimelerle tarama yapılarak ulaşılmıştır. Öncelikle başlık/özeti incelenen araştırmaların dahil edilme kriterlerine uygunluğu veri kontrol formu ile değerlendirilmiştir. Geleneksel derlemeler, geçerlik-güvenirlik araştırmaları ve tam metnine ulaşılamayan makaleler çalışmaya dahil edilmemiştir.

Bulgular: Türkiye' de 2005-2019 yılları arasında hemşireler tarafından oyun terapisi kullanılarak yapılmış 11 çalışmaya (5 doktora ve 6 yüksek lisans tez çalışması) ulaşılmış olup yalnızca birkaçı uluslararası araştırma makalesi olarak yayınlanmıştır. Araştırmaların %27,3'si yarı deneysel, %54,5'i deneysel, %18,2'si niteliksel-niceliksel (karma) türde yürütülmüştür. Çalışmaların 9 (%81)'u hastane ortamında, 2 (%19)' si hastane dışı ortamda uygulanmıştır.

Sonuç: Birçok çalışma ile oyun terapisinin hemşirelik uygulamalarında etkinliği kanıtlanmış olup bakımın her evresinde kullanılabilen önemli etkileri olan bir uygulamadır. Hemşireler tarafından oyun terapisi uygulamaları sadece hastane ortamında değil, hastane dışında da uygulanmalıdır. Hastanelerin çocuk bölümlerinde çocukların oyun oynayabilecekleri bir ortam sağlanmalı, her yaş grubuna hitap edecek şekilde düzenlenmeli ve uygun oyuncaklar ile desteklenmelidir. Hemşirelere oyun terapisi eğitimleri verilerek oyun terapisinin önemi ve faydaları vurgulanmalıdır. Ülkemizde çocuk sağlığı hemşireliği uygulamalarında oyun terapisinin kullanıldığı çalışmalara rastlanmış olsa da daha fazla sayıda kanıt temelli deneysel çalışmaların arttırılarak çocuk sağlığı hemşireliği uygulamalarının ve bilimsel literatürün geliştirilmeye ihtiyacı vardır.

Anahtar Kelimeler: *Türkiye, hemşirelik, oyun terapisi, çocuk sağlığı*

GİRİŞ

Çocuk Sağlığı ve Hastalıkları Hemşireliği, yenidoğan döneminden ergenlik döneminin sonuna kadar tüm gelişim dönemlerini kapsayan, çocuk ve ailesini bakımın merkezine koyarak birincil, ikincil ve üçüncül sağlık hizmeti sunan hemşirelik alanıdır (1). Oyun terapisi çocuğun tüm yaşam dönemlerinde yaşadığı sorunlarda kullanılabilecek en iyi uygulamalardandır. Oyun Terapisi; "Oyunun çocukların kendilerini ifade etmede doğal bir araç olduğu gerçeğine dayanmaktadır. Yetişkin terapisinin bazı türlerinde olduğu gibi, kişinin sorunlarını anlatmasına benzer olarak, oyun terapisi de çocuğa sorunlarını ve duygularını oynayarak dışa vurması için verilen bir fırsat." olarak tanımlanmaktadır (2,3). Oyun terapisi hemşireliğin sanatsal yönünü güçlendirmekte ve hemşirelik uygulamaları içerisinde noninvaziv bir rahatlama tekniği olarak kullanılmaktadır (4).

Çocuk hemşireliğinde hastane ortamında bulunan çocuğun oyuna yönlendirilmesi profesyonel bakımın bir parçasıdır ve tedavi işlemleri oyunla birleştirilirse çocuğun işlemleri tolere etmesi kolaylaşmaktadır. Hastanede hemşirenin kontrolünde olan her şey bir oyuncak olabilir. Tedavide kullanılan araçları çocuğun oynamak için eline alması uygulanacak olan işlemlere adaptasyonunu ve hastanede yatmaya karşı duygu ve düşüncelerini ifade etmesini sağlar (5). Çocuğun hastane ortamında bulunması çocukta korku, anksiyete, stres, kızgınlık, öfke, kontrol kaybı hissi gibi birçok olumsuz duyguya neden olmaktadır. Çocukta görülen hastaneye yatışın olumsuz etkilerin azaltılmasında, çocuk ve sağlık çalışanı arasındaki ilişkinin kurulmasında, hastaneye yatan çocuklarda görülen anksiyete düzeylerinin ve olumsuz duygularının azaltılmasında etkili bir yöntem olan oyun terapisinin, çocukların hem fiziksel hem duygusal yönden rahatlayarak iyileşme sürecini kısalttığı bildirilmektedir (3,6,7,8,9,10). Oyun terapisi hastanede yatan çocuklarda hemşirelik bakımı sunumunda ayrıca hemşirenin bakım girişimlerinin kolaylıkla uygulanmasında, bütüncül ve kaliteli bir bakımı verilmesinde etkilidir (5,11). Hastaneye yatan iyilik hali bozulmuş çocuklar üzerinde yapılan bir araştırmada oyunun bilişsel, duyuşsal ve sosyal yönden iyilik halleri için gerekli olduğu sonucuna varılmıştır (12). Bu nedenle çocuğun dünyası olan oyunun hemşirelik uygulamalarında kullanımı önemlidir.

Bu çalışma çocuk sağlığı ve hastalıkları hemşireliği alanında oyun terapisi kullanılarak yapılan araştırmaların incelenmesi amacıyla yapılmıştır.

YÖNTEM

Tanımlayıcı tipteki çalışmada, Temmuz-Ekim 2019 tarihleri arasında Pubmed, Ulakbim, Türk Medline, Ulusal Tez Tarama Merkezi veri tabanları taranarak çocuk sağlığı alanında oyun terapisi kullanılarak yayınlanmış hemşirelik araştırmaları incelenmiştir. Tarama yapılırken yıl sınırlaması yapılmamış ve ulaşılan çalışmalar 2005-2019 yılları arasında yapılmıştır. Ulakbim ve Ulusal Tez Tarama Merkezi veri tabanında "Türkiye, hemşirelik, oyun terapisi, çocuk sağlığı" kelimeleri, Pubmed veri tabanında "Turkey, nursing, play therapy, child health" kelimeleri tek tek, farklı kombinasyonlarda kullanılarak tarama yapılmıştır. Araştırmalar incelenerek belirlenen kriterler doğrultusunda, değerlendirmeler yapılmıştır.

Araştırmaların çalışmaya alınma kriterleri:

Araştırmanın tam metnine veya özetine online olarak ulaşılabilmesi.

Orijinal araştırma yazısı olması (geçerlik- güvenilirlik yazısı veya derleme olmaması).

Araştırmanın başlık ya da özetinde kullanılan oyun terapisi yönteminin açık bir şekilde belirtilmiş olması.

Araştırmanın çocuklar üzerine yapılmış olması.

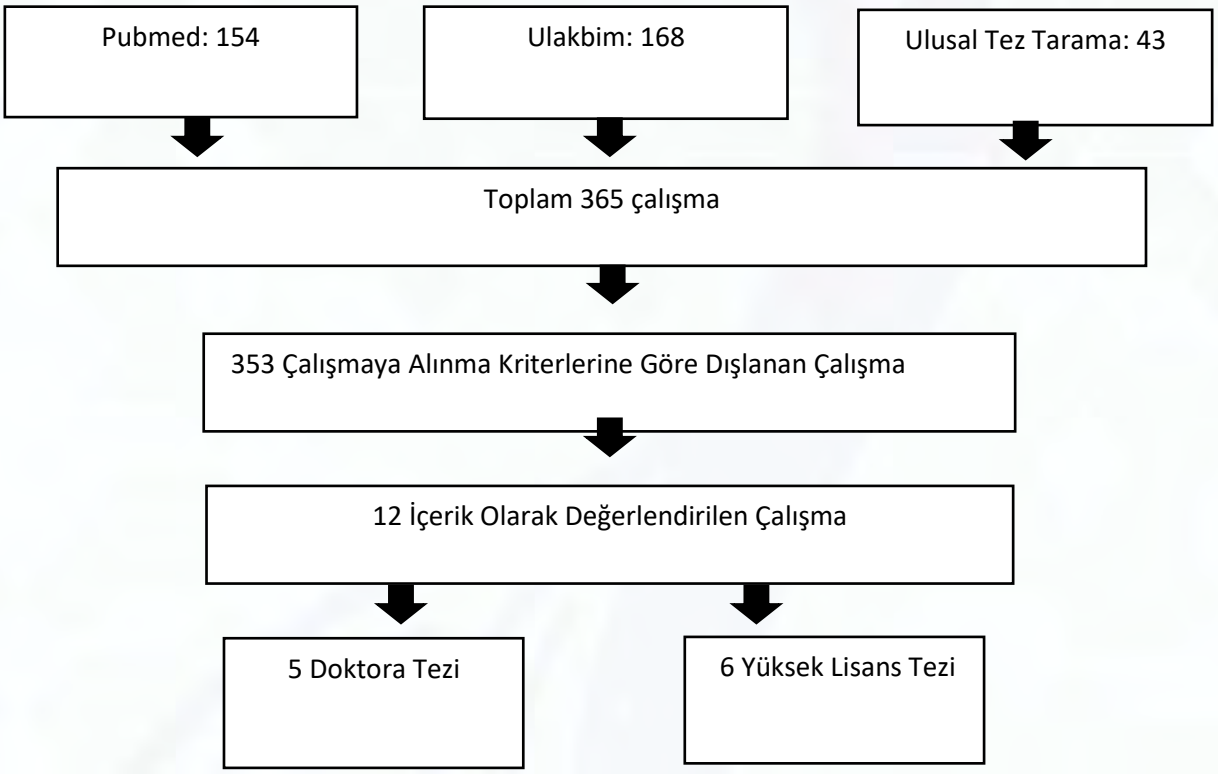
Araştırmanın Türkiye'de yapılmış olması.

Verilerin Toplanması

İncelenen çalışmalar online veri tabanları üzerinden ulaşıldığı için etik onam alınmamıştır. Çalışmaların incelenme sürecinde hemşireler tarafından çocuklara yönelik oyun terapisi kullanılarak yapılmış olan çalışmalara ulaşmak için belirlenen anahtar kelimeler ile tarama yapılmıştır. Araştırmaya alınma kriterlerini karşılayan 11 çalışma incelemeye dahil edilmiştir. Öncelikle başlık/özeti incelenen araştırmaların dahil edilme kriterlerine uygunluğu veri kontrol formu ile değerlendirilmiştir. İncelenecek olan çalışmalar yazarı, yılı, araştırmanın sınıfı, tipi, kullanılan oyun terapisi yöntemi ve çalışmanın amacı başlıkları altında araştırmacılar tarafından gözden geçirilmiştir.

Verilerin Değerlendirilmesi

Verilerin değerlendirilmesinde tanımlayıcı istatistikler yöntemler kullanılarak, verilerin sayı ve yüzdelik dağılımları değerlendirilmiştir.



Şekil 1. Araştırma Akış Şeması

BULGULAR

Çocuk sağlığı ve hastalıkları hemşireliği alanında oyun terapisi ile yapılan çalışmaların özellikleri Tablo 1.' de gösterilmiştir. Araştırmalar incelendiğinde; çocuk sağlığı ve hastalıkları hemşireliği alanında oyun terapisi kullanılarak yapılmış araştırma makalesine rastlanmamış olup (rastlanmış olan makaleler tez çalışmalarından üretilen yayınlardır), 5 doktora tezi, 6 yüksek lisans tezi olmak üzere toplam 11 çalışmaya ulaşılarak incelenmiştir (Şekil 1).

Tablo 1. Çocuk Sağlığı ve Hastalıkları Hemşireliği Alanında Oyun Terapisi Kullanılarak Yapılmış Çalışmalar ve Özellikleri

Kaynak	Yıl	Araştırmanın Sınıflandırılması	Araştırma Türü	Kullanılan Oyun Terapisi Yöntemi	Çalışmanın Amacı
(13)	2005	Yüksek Lisans Tezi	Yarı Deneysel	Resim Analizi	Daha önce hastane deneyimi olmayan ve hastaneye yatış yapan çocukların hastane algısını belirlemek
(14)	2012	Doktora Tezi	Yarı deneysel	Terapötik Oyun	Ameliyat öncesi uygulanan terapötik oyunun, çocuğun ameliyat sonrası anksiyete, korku ve ağrı düzeyine etkisi
(4)	2013	Doktora Tezi	Yarı Deneysel	Oyun Terapisi (Oyun Hamuru)	Okul öncesi çocuklarda oyun terapisinin sosyal, duygusal, davranışsal becerileri üzerinde etkisi
(7)	2013	Doktora Tezi	Niteliksel-Niceliksel (karma tip)	Çocuk Merkezli Oyun Terapisi	Kanser tanısı alan çocukların benlik etkilenimini oyun kullanarak ortaya koyma
(15)	2013	Doktora Tezi	Niteliksel-Niceliksel (karma tip)	Hastane materyallerin in oyuncakları	Hastanede yatan 8-12 yaş arası çocuklarda hastanede yatma süreciyle baş etmede oyun temelli hemşirelik girişiminin geliştirilmesi
(16)	2015	Yüksek Lisans Tezi	Deneysel	İnteraktif Terapötik Oyun Eğitim Programı	Ameliyat öncesi uygulanan İnteraktif Terapötik Oyun Eğitim Programının, çocuk ve annenin ameliyat sonrası anksiyete düzeyine etkisi
(17)	2018	Yüksek Lisans Tezi	Deneysel	Oyun Terapisi	Okul öncesi çocuklarda oyun terapisinin ayrılık kaygısı üzerine etkisi
(18)	2018	Doktora Tezi	Deneysel	Hastane materyallerin in oyuncakları	Kanserli çocuklarda invaziv girişim ağrı yönetimi
(19)	2018	Yüksek Lisans Tezi	Deneysel	Terapötik oyun	7-12 yaş arası çocuklarda periferik damar yolu açma işlemi öncesinde kullanılan terapötik oyunun korku ve anksiyete düzeyine etkisi
(20)	2019	Yüksek Lisans Tezi	Deneysel	Oyun Terapisi (Oyun Hamuru)	Çocuklarda dental korkuyu azaltmada oyun hamuru ile verilen eğitimin etkisi
(21)	2019	Yüksek Lisans	Deneysel	Terapötik	8-12 yaş arası çocuklarda

		Tezi		Oyun	ameliyat öncesi dönemde terapötik oyun ile verilen eğitimin anksiyete ve korku düzeylerine etkisi.

Araştırmalar 2005-2019 tarihleri arasında yapılmış olup, son yılında çocuk sağlığı ve hastalıkları hemşireliği alanında yapılan çalışmalarda oyun terapisi kullanımı artmaya başlamıştır. Araştırmaların %45,5'i doktora tezi, %54,5'i yüksek lisans tez çalışmasıdır. Araştırmaların %27,3'si yarı deneysel, %54,5'i deneysel, %18,2'si niteliksel-niceliksel (karma tip) türde yürütülmüştür. Araştırmaların %81'i hastane ortamında, %19'u hastane dışı ortamda yürütülmüştür (Tablo 1).

TARTIŞMA

Çocuk sağlığı hemşireleri tarafından oyun terapisi ile yapılan çalışmaların incelendiği bu araştırmada sonucunda Türkiye'de oyun terapisi kullanım oranının düşük olduğu görülmüştür. İncelenen çalışmaların tamamının lisansüstü çalışma olarak yapıldığı görülmektedir. Deneysel, yarı deneysel ve niteliksel-niceliksel (karma tip) olarak yürütülmüş olan çalışmalarda oyun terapisinin kuramsal çerçevesi açıklanmış olup çalışmaların bu doğrultuda yürütüldüğü görülmüştür. Çalışmaların sonuçları incelendiğinde; hemşirelik uygulamalarında kliniklerde ve klinik dışında uygulanan oyun terapisi yönteminin pek çok alanda etkili olduğu görülmüştür.

İnvaziv girişimler için kullanılan materyallerden oluşan oyuncaklar ile oyun oynamanın kanserli çocuklarda invaziv girişim ağrısını azalttığı (18), çocuklarda periferik damar yolu açma işlemi öncesinde uygulanan terapötik oyunun anksiyete korku ve kaygıyı azaltmada etkili olduğu (19), çocuklarda dental korkuyu azaltmada dişçi setinden oluşan oyun hamuru ile verilen eğitimin dental korkuyu azalttığı (20), ameliyat öncesi dönemde uygulanan terapötik oyunun çocuğun ameliyat sonrası anksiyete, korku ve ağrı düzeyine etkisini saptamak amacıyla gerçekleştirilen bir çalışmada (14) ise terapötik oyunun ameliyat sonrası anksiyete ve korkunun azaltılmasında etkili olduğu ancak ağrıya etkisi olmadığı saptanmıştır. Oyun terapisinin okul öncesi çocuklarda sosyal, duygusal, davranış becerileri arttırmada ve anaokulunda eğitim gören okul öncesi çocuklarda ayrılık kaygısını azaltmada etkili olduğu belirtilmiştir (4,17).

Çalışmaların çoğu hastane ortamında gerçekleştirilmiş olup oyun terapisinin ameliyat sonrası korku, anksiyete ve ağrının yönetiminde, sosyal, duygusal ve davranışsal becerilerin artırılmasında, benlik kavramının ortaya çıkarılmasında, hastane algısının belirlenmesinde, ayrılık kaygısının azaltılmasında, hastane korkusuyla baş etmede, invaziv girişimlerde korku ve anksiyetenin azaltılmasında, invaziv girişim sonrası ağrının yönetiminde ve dental korkuyu azaltmada etkin olduğu sonucuna varılmıştır (4,7,13,14,15,16,17,18,19,20,21). Birçok çalışma ile oyun terapisinin hemşirelik uygulamalarında etkinliği kanıtlanmıştır. Ancak ülkemizde hemşirelik uygulamalarında oyun terapisinin kullanıldığı çalışmalar vardır ancak farklı alanlarda ve uygulamalarda oyunun gücü ile ilgili literatürün geliştirilmeye ihtiyacı vardır. Hemşirelik uygulamalarında kliniklerde ve klinik dışında pek çok alanda etkili bir yöntem olan oyun terapisi sadece hastane ortamında değil okullarda, çocuk esirgeme kurumlarında, evde bakım verilen çocuklar, kronik hastalığı olan çocuklarda ve engelli çocuklarda da uygulanabilir (3,4,22).

Çalışmada belirlenen anahtar kelimelerle tarama yapılması ulaşılan yayın sayısını sınırlandırmaktadır. Çalışmaların tamamının lisasüstü tez çalışması olması ve çoğunun yayınlanmamış olması yapılan çalışmaların sonuçlarının uluslar arası literatürde yer

bulamamasına neden olmaktadır. Bu açıdan bu çalışma, tez çalışmalarının yayına dönüştürülmesinin ne kadar önemli olduğuna bir kez daha dikkat çekmektedir.

SONUÇ

Oyun terapisi, hemşirelik bakımının her evresinde kullanılabilen önemli etkileri olan bir uygulamadır. Çocuk hemşireleri oyun terapisini başta iletişim aracı olmak üzere bakım ve tedavi uygulamalarında kullanması gerkir. Oyun terapisi hem hastane ortamında hem de hastane dışında birçok alanda uygulanmakta olup yaş ve bilişsel gelişimine uygun olan yöntemleri tüm sağlık çalışanları bilmeli ve uygulamalıdır. Hastanelerin çocuk bölümlerinde çocukların oyun oynayabilecekleri bir ortam sağlanmalı, her yaş grubuna hitap edecek şekilde düzenlenmeli ve uygun oyuncaklar ile desteklenmelidir. Sağlık çalışanlarına oyun terapisi eğitimleri verilerek oyun terapisinin önemi ve faydaları vurgulanmalıdır. Çocuğa ve hemşireye faydaları göz önüne alınarak her alanda oyun terapisinin kullanılması önerilmektedir. Araştırmalarda; araştırmanın amacına, tasarımına, örneklem grubuna ve maliyet etkinliğine uygun oyun terapisi yöntemlerinin seçilmesi gerekmektedir.

Bu araştırmanın sonucu hemşirelik literatüründe oyun terapisinin kullanım alanlarını ortaya koyması, oyun terapisinin etkili olduğu uygulamaların belirlenmesi ve bundan sonra yapılacak olan hemşirelik araştırmaları için bir kaynak olarak yararlı olabileceği düşünülmektedir.

Kaynaklar

1 *Yüzer, S., Alıcı, D. ve Yiğit, R., 2008. Pediatri Hemşireliğinin Rolleri ve Fonksiyonları Ölçeğinin Uygulanmasının Geliştirilmesi: Güvenilirliği ve Geçerliliği.* Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi, *11(4), 19-29.*

2 *Bekeç, M., 2018. Deneyimsel Oyun Terapisinin Dikkat Eksikliği ve Hiperaktivite Bozukluğu Tanısı Olan 6-11 Yaş Arasındaki Çocukların Duygu ve Davranışları Üzerindeki Etkisinin İncelenmesi. Yüksek Lisans Tezi, Sosyal Bilimler Enstitüsü Uygulamalı Psikoloji Anabilim Dalı, İstanbul.*

3 *Yayan, E. H. ve Zengin, M., 2018. Çocuk Kliniklerinde Terapötik Oyun.* Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi, *7(1), 226-233.*

4 *Sezici, E., 2013. Okul Öncesi Çocuklarda Oyun Terapisinin Sosyal Yetkinlik ve Davranış Yönetimine Etkisi. Doktora Tezi, Marmara Üniversitesi Sağlık Bilimleri Enstitüsü, İstanbul.*

5 *Caleffi, C. C. F., Rocha, P. K., Anders, J. C., Souza, A. I. J. De, Burciaga, V. B., ve Serapião, L. Da S., 2016. Contribution of Structured Therapeutic Play in A Nursing Care Model for Hospitalised Children. Revista Gaucha De Enfermagem, 37(2), 1-8.*

6 *Kıran, B., Çalık, C. ve Işık Esenay, F., 2013. Terapotik Oyun: Hasta Çocuk İle İletişimin Anahtarı. Ankara Sağlık Bilimleri Dergisi, 2(123), 1–10.*

7 *Manav, G., 2013. Kanserli Çocuklarda Oyun Temelli Hemşirelik Modeli. Doktora Tezi, Marmara Üniversitesi Sağlık Bilimleri Enstitüsü, İstanbul.*

8 *Koukourikos, K., Tzeha, L., Pantelidou, P. ve Tsaloglidou, A., 2015. The İmportance of Play During Hospitalization of Children. Materia Socio Medica, 27(6), 438.*

9 *Li, W. H. C., Chung, J. O. K., Ho, K. Y., ve Kwok, B. M. C., 2016. Play İnterventions to Reduce Anxiety and Negative Emotions in Hospitalized Children. BMC Pediatrics, 16(1), 36.*

10 *Silva, S. G. T., Santos, M. A., Floriano, C. M. F., Damião, E. B. C., Campos, F. V. ve Rossato, L. M., 2017. Influence of Therapeutic Play on the Anxiety of Hospitalized School-Age Children: Clinical Trial. Rev Bras Enferm. 70(6), 1244-1249.*

11 *Li, H. C. W. ve Lopez, V., 2008. Effectiveness and Appropriateness of Therapeutic Play İntervention İn Preparing Children for Surgery: A Randomized Controlled Trial Study. Journal for Specialists in Pediatric Nursing, 13(2), 63–73.*

12 *Campos, M. C., Rodrigues, K. C. S. ve Pinto, M. C. M., 2010. Evaluation of the Behavior of the Preschool One Just Admitted in the Unit of Pediatrics and the Use of the Therapeutic Toy. Einstein, 8 (1), 10-17.*

13 *Şen, D., 2005. Çocuklarda Hastaneye Yatma Etkilerinin Projektif Yöntem Olan Resim Çizme Yoluyla İncelenmesi. Yüksek Lisans Tezi, Sağlık Bilimleri Enstitüsü Hemşirelik Anabilim Dalı, İzmir.*

14 *Tural, E., 2012. Ameliyat Öncesi Dönemde Çocuklara Verilen Eğitim ve Terapötik Oyun Yöntemlerinin Çocuğun Kaygı, Korku ve Ağrı Düzeylerine Etkisinin İncelenmesi. Doktora Tezi, Sağlık Bilimleri Enstitüsü Hemşirelik Anabilim Dalı, İzmir.*

15 *Teksöz, E., 2013. Okul Dönemi Çocuklarda Sanat Temelli Bir Hemşirelik Girişimi. Doktora Tezi, Marmara Üniversitesi Sağlık Bilimleri Enstitüsü, İstanbul.*

16 *Coşkuntürk, A. E., 2015. İnteraktif Terapötik Oyun Eğitin Programının Kalp Ameliyatı Olacak Çocukların Annelerinin Anksiyete Düzeyine Etkisi. Yüksek Lisans Tezi, Sağlık Bilimleri Enstitüsü Hemşirelik Anabilim Dalı, İstanbul.*

17 *Yılmaz, Ö., 2018. Okul Öncesi Çocuklarda Oyun Terapinin Ayrılık Kaygısı Üzerine Etkisinin Değerlendirilmesi.* Yüksek Lisans Tezi, Sağlık Bilimleri Enstitüsü Çocuk Sağlığı ve hastalıkları Hemşireliği Anabilim Dalı, *Zonguldak.*

18 *Aslan, H., 2018. İnvaziv Girişimler için Kullanılan Materyallerden Oluşturulan Oyuncaklar ile Oyun Oynama Deneyiminin Kanserli Çocuklarda İnvaziv Girişim Ağrısına Etkisi. Doktora Tezi, Sağlık Bilimleri Enstitüsü Hemşirelik Anabilim Dalı, Malatya.*

19 *Derleyen Taşkın, B., 2018. Pediatrı Servisinde Yatan Çocuklara Periferik Damar Yolu Açma İşlemi Öncesinde Uygulanan Terapötik OyunYönteminin Anksiyete ve Korku Üzerine Etkisi. Yüksek Lisans Tezi, Sağlık Bilimleri Enstitüsü Hemşirelik Anabilim Dalı, Edirne.*

20 *Uluışık, A., 2019. Dental Korkuyu Azaltmada Oyun Hamuru ile Oynatılarak Bilgilendirmenin Etkisi. Yüksek Lisans Tezi, Sağlık Bilimleri Enstitüsü Hemşirelik Anabilim Dalı, İstanbul.*

21 *Ayan, G., 2019. Çocuklara Ameliyat Öncesi Dönemde Terapötik Oyun ile Verilen Eğitimin Çocukların Anksiyete ve Korku Düzeylerine Etkisi. Yüksek Lisans Tezi, Sağlık Bilimleri Enstitüsü Hemşirelik Anabilim Dalı, Karabük.*

22 *Epstein, I., Stevens, B., McKeever, P., Baruchel, S. ve Jones, H., 2008. Using Puppetry to Elicit Children's Talk for Research. Nursing Inquiry, 15(1), 49-56.*

FT28

Çocukluk Çağında Nadir Bir Renal Apse Olgusu: Olgu Sunumu

Büşra Zeynep YILMAZ[1], Nazife BÜYÜKCAVLAK[1],

Ayşe Hümeyra AKGÜL[1], Bülent ATAŞ [2]

-[1]Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi, Pediatri AD, Konya,Türkiye

[2]Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi, Pediatri AD, Pediatrik Nefroloji BD, Konya, Türkiye

Giriş: Renal ve perirenal apse oluşumu çocukluk çağında nadirdir. En sık abdominal ve üriner sistem cerrahisi sonrası meydana gelmekle beraber nadiren sağlıklı çocuklarda da görülebilir. Vezikoüreteral reflü, obstrüktif üropati, renal ven trombozu, renal kalkül ya da renal travma sonrası oluşabilir.

Olgu: Yedi yaşında erkek hasta, 16 gündür ateş ve sol yan ağrısı şikayetleriyle tedavi gördüğü dış merkezden, klinik iyileşme sağlanamaması nedeniyle ileri araştırma için kliniğimize yönlendirildi.

1 ay önce hipospadias ve sol orşiopeksi operasyonu geçirmiş. Sol testis atrofik olduğu için orşiektomi yapılmış. Hipospadias cerrahisi sonrası 8 gün idrar sondası ile takip edilmiş. İdrar sondası çıkarıldıktan iki gün sonra ateş, kusma, sol yan ağrısı sebebiyle hastaneye başvurmuş. Dış merkezde yapılan batın ultrasonografide pyelonefrit lehine bulgular görülmüştü. On altı gün boyunca yatırılarak çoklu antibiyoterapi ile tedavi edilen ama uygun paranteral antibiyoterapiye rağmen klinik düzelme olmayan hasta tarafımıza sevk edildi. Özgeçmişinde 3 yaşında bilateral orşiopeksi cerrahisi sonrası sol testisin kısmi indirilmesi dışında patolojik özellik yoktu. Soygeçmişinde babasında çocukluk çağında nefrolitiazis öyküsü, kuzeninde intrauterin hidronefroz tanıları vardı. Muayenesinde sol tarafta kostavertebral açı hassasiyeti(KVAH) ve 38.7°C ateşi vardı. Laboratuar sonuçlarında CRP:121 mg/L, ESH:120 mg/h, lökosit 21380/mm3 saptandı. Hastanemizde çekilen kontrastlı batın BT'sinde solda en büyüğü 3 cm çapında çok sayıda renal apse tespit edildi (Resim 1). Ampirik olarak Meropenem ve Teikoplanin tedavisi başlandı. Girişimsel radyoloji tarafından apse drenajı yapıldı. Drenaj materyali eksuda vasfında idi, direk bakısında bol nötrofil görüldü. İşlem sonrası laboratuar tetkiklerinde ve kliniğinde olumlu yanıt alındı. İmmünolojik tetkikleri planlandı, normal sonuçlandı.

Sonuç: Ateş, yan ağrısı, kostovertebral açı hassasiyeti, akut faz reaktanlarında yüksekliği ve geçirilmiş üriner sistem cerrahisi olan olgularda nadir de olsa renal apse olasılığının akılda tutulması gerekmektedir. Güzel alınmış bir anamnez ve klinik olarak renal apse varlığından şüphe edilmesi tanı koymak için gereklidir. Uygun antibiyoterapiye rağmen klinik yanıt alınamayan hastalarda perkütan drenaj ile anlamlı klinik yanıt alınabilmektedir.

Anahtar kelimeler: *renal apse, üriner sistem cerrahisi, çocuk*

Introduction: Renal and perirenal abscesses are rare in childhood. It occurs most commonly after abdominal and urinary system surgery, but rarely occurs in healthy children. It may occur after vesicoureteral reflux, obstructive uropathy, renal vein thrombosis, renal calculus or renal trauma.

Case: A 7-year-old male patient was referred to our clinic for further investigation from the another health center where he had been treated with fever and left side pain for 16 days. He had hypospadias and left orchiopexy surgery 1 month ago. The orchiectomy was performed

because the left testicle was atrophic. He was followed with urine catheter for 8 days after hypospadias surgery. Two days after removal of the urinary catheter, he was admitted to the hospital with fever, vomiting and left side pain. Abdominal ultrasonography performed in the previous health center revealed findings in favor of pyelonephritis. . The patient was hospitalized for 16 days and treated with multiple antibiotherapy, but despite appropriate iv antibiotherapy, the patient did not improve clinically and was referred to our hospital. His past medical history was unremarkable except for partial lowering of the left testis after bilateral orchiopexy surgery at the age of 3 years. His father had a history of childhood nephrolithiasis and his cousin had intrauterine hydronephrosis. On examination, he had costavertebral angle sensitivity (CVD) on the left side and fever of 38.7 ° C. Laboratory results showed CRP: 121 mg / L, ESH: 120 mg / h, leukocyte 21380 / mm3. Contrast-enhanced abdominal CT scan in our hospital revealed a great number of renal abscesses with the largest diameter of 3 cm on the left (Figure 1). Empirically meropenem and teicoplanin treatment was started. Abscess drainage was performed by interventional radiology. Drainage material was exudate, and direct neutrophil was observed in direct examination. After the procedure, a positive response was obtained in laboratory tests and clinic. Immunological examinations were planned and normal. Renal ultrasonography and voiding cystourethrography results were normal.

Conclusion: The possibility of renal abscess should be kept in mind in patients with fever, side pain, costovertebral angle tenderness, elevated acute phase reactants and previous urinary system surgery. A well-taken history and suspicion of the presence of renal abscess is necessary for diagnosis. Significant clinical response can be achieved with percutaneous drainage in patients who do not receive clinical response despite appropriate antibiotherapy.

Key words: *renal abscess, urinary system surgery, pediatric*

Giriş

Renal ve perirenal apse oluşumu çocukluk çağında nadirdir, fakat uzun süreli hastane yatışına, böbrek kaybına ve yaşamı tehdit edebilen sonuçlara yol açabilmesi açısından önemlidir.[1] En sık abdominal ve üriner sistem cerrahisi sonrası meydana gelmekle beraber nadiren sağlıklı çocuklarda da görülebilir. Etyolojisinde idrar yolu enfeksiyonu, bakteriyemi, vezikoüreteral reflü, obstrüktif üropati, renal ven trombozu, renal kalkül ya da renal travma vardır.[2] Bu çalışmada, üriner sistem cerrahisi sonrası idrar sondası ile takip edilen, sonrasında dirençli ateşleri olan uygun parenteral antibiyotik tedavisine rağmen klinik yanıt alınamayan bir renal apse olgusu sunulmuştur.

Olgu Sunumu

Yedi yaşında erkek hasta, 16 gündür ateş ve sol yan ağrısı şikayetleriyle tedavi gördüğü dış merkezden, klinik iyileşme sağlanamaması nedeniyle ileri araştırma için kliniğimize yönlendirildi. Yaklaşık 1 ay önce hipospadias ve sol orşiopeksi operasyonu geçirmiş. Sol testis atrofik olduğu için orşiektomi yapılmış. Hipospadias cerrahisi sonrası 8 gün idrar sondası ile takip edilmiş. İdrar sondası çıkarıldıktan iki gün sonra ateş, kusma, sol yan ağrısı sebebiyle hastaneye başvurmuş. Dış merkezde bakılan batın ultrasonografide pyelonefrit lehine bulgular görülmüş. Hastaya bu klinik tabloyla pyelonefrit tanısı konularak 16 gün boyunca yatırılarak çoklu antibiyoterapi ile tedavi edilen ama uygun parenteral antibiyoterapiye rağmen klinik düzelme olmayan hasta tarafımıza sevk edildi. Özgeçmişinde 3 yaşında bilateral orşiopeksi cerrahisi sonrası sol testisin kısmi indirilmesi dışında patolojik özellik yoktu. Soygeçmişinde babasında çocukluk çağında nefrolitiazis öyküsü, kuzeninde intrauterin hidronefroz tanıları vardı. Fizik muayenesinde bilinci açık, ateşi 38.7°C idi. Sol tarafta kostovertebral açı hassasiyeti vardı. Diğer sistem muayeneleri doğaldı. Laboratuar

sonuçlarında C reaktif protein(CRP) : 121 mg/L, eritrosit sedimentasyon hızı(ESH) :120 mg/h, lökosit 21380/mm3 saptandı. Üre, kreatinin, ürik asit, glukoz ve elektrolitleri normaldi. İdrar incelemesi normal, idrar ve kan kültürü negatifti.

Kontrastlı batın BT'sinde solda en büyüğü 3 cm çapında çok sayıda renal apse tespit edildi (Resim 1). Ampirik olarak parenteral meropenem ve teikoplanin tedavisi başlandı. Girişimsel radyoloji tarafından apse drenajı yapıldı. Drenaj materyali eksuda vasfında idi, direk bakısında silme nötrofil görüldü. İşlemden sonra ateş ve yan ağrısı şikayetleri geriledi. İmmünolojik tetkikleri planlandı. Periferik lenfosit alt grupları (PLAG), T düzenleyici hücreleri (TREG), immünglobulinler, fagoburst normal saptandı. Laboratuar tetkiklerinde CRP: 6,7 mg/L, ESH: 29 mg/h, lökosit 8120/mm3'e geriledi. Hastanın tedavisi tamamlandıktan sonra kontrol batın ultrasonografisi yapıldı, apse olmadığı görüldü. Voiding sistoüretrografi yapıldı, vezikoüreteral reflü saptanmadı. Hastamız üç haftalık parenteral antibiyorik tedavisi ve apse drenajının ardından, drenaj kateteri çekilerek taburcu edildi. Taburculuktan 4-6 ay sonra renal dokuyu değerlendirmek için dimerkaptosüksinik asit (DMSA) sintigrafisinin çekilmesi planlandı.

Tartışma

Renal apseler renal enfeksiyonların çok nadir görülen bir formu olmakla birlikte böbrek kaybına hatta ölüme yol açabilir.[3]

Klinik olarak renal apseler nonspesifik semptomlarla gelebileceği gibi ateş, bulantı kusma, yan ağrısı, karın ağrısı, artmış ESH, lökositoz ve idrar/kan kültürlerinde üremeyle başvurabilir.[4] İdrar ve kan kültürleri hastaların yarısından daha azında pozitif olabilmektedir. Renal veya perinefrik apse, hematojen yayılım sonucu gelişirse ve toplayıcı sistemle iletişim kurmazsa veya antibiyotiklerin başlangıcından sonra örnek alındıysa idrar ve kan kültürü çalışmaları normal olabilir.[5] Bizim olgumuzda ateş yan ağrısı, ESH yüksekliği, lökositoz mevcutken, paranteral antibiyotik tedavisi almadan önce alınan idrar ve kan kültürlerinde üreme görülmemekteydi.

En değerli tanı yöntemleri ultrasonografi (USG) ve bilgisayarlı tomografi (BT) dir. USG renal apseler için daha sensitif, BT ise daha spesifik bulunmuştur.[6] Bu nedenle ilk tanı yöntemi USG, sonra BT'dir. BT ultrasonografi bilgilerini doğrulamak ya da ultrasonografi tanısı yetersiz olduğu zaman kullanılır.[7] Bizim olgumuzda dış merkez ultrasonda yalnızca pyelonefrit lehine bulgular olması nedeniyle hastaya kontrastlı batın BT planladık. Kontrastlı batın BT'de sol böbrekte kortikal yerleşimli büyüğü alt polde 3 cm çapa ulaşan apse odakları görüldü (Resim 1).

Renal apsenin başlıca tedavisi uygun parenteral antibiyotik tedavisi ve perkütan veya açık cerrahi drenajdır.[8] Küçük apselerde (<3cm) 3- 6 hafta paranteral antibiyoterapi önerilir, büyük apselerde (>5cm) drenaj (pekütan veya cerrahi) önerilir. Orta büyüklükteki apselerde (3-5 cm) ise hastanın klinik yanıtına göre her iki tedavi yöntemi de uygulanabilir. Bizim olgumuzda en büyüğü 3 cm olan çok sayıda apse odağı görülmekteydi. Uygun antibiyoterapiye rağmen klinik yanıt alınamadığı için perkütan drenaj tedavisi uygulandı.[9] Sonuç olarak; ateş, yan ağrısı, kostovertebral açı hassasiyeti, akut faz reaktanlarında yüksekliği ve geçirilmiş üriner sistem cerrahisi olan olgularda nadir de olsa renal apse olasılığının akılda tutulması gerekmektedir. Güzel alınmış bir anamnez ve klinik olarak renal apse varlığından şüphe edilmesi tanı koymak için gereklidir. Uygun antibiyoterapiye rağmen klinik yanıt alınamayan hastalarda perkütan drenaj ile anlamlı klinik yanıt alınabilmektedir.

Kaynakça

1 *Chen CY, Kuo HT, Chang YJ, Wu KH, Yang WC, Wu HP. Clinical assessment of children with renal abscesses presenting to the pediatric emergency department. BMC Pediatr. 2016 Nov 22;16(1):189*

2 *Stephen R, Shapiro MD, Raymond D: Perinephric and intranephric abscessIn Current Pediatric Theraphy ed. Gellis&Kagan's. 14. edition 1993 W.B Saunders Pennsylvania, p.378.*

3 *Cancelinha C, Santos L, Ferreira C, Gomes C. Renal abscesses in childhood: report of two uncommon cases. BMJ Case Rep. 2014 Mar 26;2014.*

4 *Lee SH, Jung HJ, Mah SY, Chung BH. Renal abscesses measuring 5 cm or less: outcome of medical treatment without therapeutic drainage. Yonsei Med J. 2010 Jul;51(4):569-73*

5 *Linder BJ, Granberg CF. Pediatric renal abscesses: A contemporary series. J Pediatr Urol. 2016 Apr;12(2):99.e1-5.*

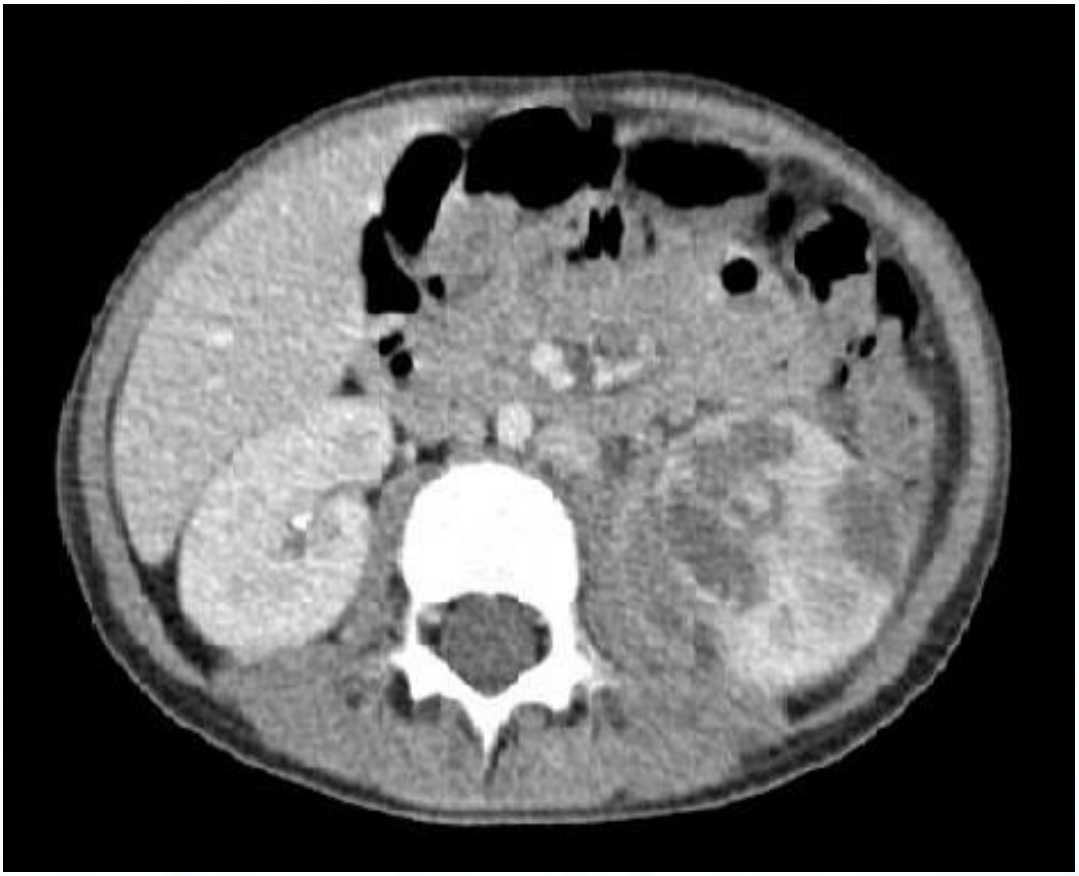
6 *Cheng CH, Tsai MH, Su LH, Wang CR, Lo WC, Tsau YK, et al. Renal abscess in children: a 10-year clinical and radiologic experience in a tertiary medical center. Pediatr Infect Dis J. 2008;27:1025–7.*

7 *Gaspari R, Dayno M, Briones J, Blehar D. Comparison of computerized tomography and ultrasound for diagnosing soft tissue abscesses. Crit Ultrasound J. 2012 Apr 17;4(1):5*

8 *Stephen R, Shapiro MD, Raymond D: Perinephric and intranephric abscessIn Current Pediatric Theraphy ed. Gellis&Kagan's. 14. edition 1993 W.B Saunders Pennsylvania, p.378.*

9 *Wippermann CF, Schofer O, Beetz R, Schumacher R, Schweden F, Riedmiller H, Büttner J. Renal abscess in childhood: diagnostic and therapeutic progress. Pediatr Infect Dis J. 1991 Jun;10(6):446-50.*

Resim 1: Renal BT'de sol böbrekte kortikal yerleşimli büyüğü alt polde 3 cm çapa ulaşan apseodakları izlenmektedir



FT29

Pediatri Hemşireliği Dersi Uygulamasının Öğrencilerin Çocuklarla İlgili Tutumlarına ve Çocuk Sevme Düzeylerine Etkisi

Effect of Pediatric Nursing Course on the Students' Attitudes Towards Children and their Levels of Liking of Children

Aynur Aytekin Özdemir, Özlem Akarsu

Istanbul Medeniyet University, Faculty of Health Sciences, Department of Nursing, Department of Child Health and Diseases Nursing, İstanbul

Amaç: Bu araştırma, Pediatri Hemşireliği dersi uygulamasının hemşirelik öğrencilerinin çocuklarla ilgili tutumları ve çocuk sevme düzeylerine etkisini belirlemek amacıyla tek grupta ön test-son test yarı deneme modelinde yapılmıştır.
Yöntem: Araştırma, Türkiye'de İstanbul Medeniyet Üniversitesi'nde 11 Şubat-24 Mayıs 2019 tarihleri arasında yapılmıştır. Evreni, belirtilen üniversitenin hemşirelik bölümünde 3. sınıfta öğrenim gören öğrenciler oluşturmuştur. Örneklem grubu seçimine gidilmeden, araştırmaya katılmaya istekli olan tüm öğrenciler (n=45) araştırmaya dahil edilmiştir. Veriler, araştırmacılar tarafından "Soru Formu" ve "Barnett Çocuk Sevme Ölçeği (BÇSÖ)" ile toplanmıştır. Çalışmada öğrencilere Pediatri Hemşireliği dersinin uygulamasına başlamadan önce (ön test) ve 14 haftalık staj uygulaması tamamlandıktan sonra (son test) veri toplama formları uygulanmıştır. Verilerin analizinde yüzdelik, ortalama ve standart sapma, bağımlı gruplarda t-testi, **Mann Whitney-U testi ve Cronbach alfa katsayı hesaplaması** kullanılmıştır. Araştırmanın yapılabilmesi için etik onay, resmi izin ve öğrencilerden yazılı izinler alınmıştır.
Bulgular: Çalışmada öğrencilerin yaş ortalaması 20.62±0.96 yıl olup, %91.1'i kızdır ve %97.8'inin kardeşi vardır, %51.1'i daha önce çocuk bakma deneyimine sahiptir. Araştırmada ön testte öğrencilerin %62.2'sinin hasta çocuklarla iletişim kurmakta zorlanırken, son testte %31.1'inin zorlandığı bulunmuştur. Ön testte öğrencilerin %84.4'ünün çocuklarla zaman geçirmekten hoşlandığı, son testte bu oranın %93.3'e yükseldiği bulunmuştur. Ön testte öğrencilerin %42.2'sinin ileride çocuk hemşiresi olarak çalışmak isterken son testte bu oranın %35.5'e düştüğü saptanmıştır. Çalışmada ön testte öğrencilerin BÇSÖ puan ortalamasının 78.17±14.75 ve son testte 82.77±13.54 olduğu, ortalamalar arasında istatistiksel olarak anlamlı fark olmadığı belirlenmiştir ($p>0.05$). Çalışmada kardeş sayısı ve çocuk bakma deneyimine sahip olma durumunun öğrencilerin BÇSÖ puan ortalamalarını etkilemediği bulunmuştur ($p>0.05$). Ön testte cinsiyet değişkeninin öğrencilerin BÇSÖ puan ortalamalarını etkilemezken son testte etkili olduğu saptanmıştır ($p<0.05$).
Sonuç: Çalışmada Pediatri Hemşireliği dersi staj uygulamasının öğrencilerin çocuklarla iletişimini geliştirdiği belirlenmiştir. Staj uygulaması sonrasında kız öğrencilerin çocuk sevme düzeylerinin erkeklerden daha yüksek olduğu bulunmuştur.

Anahtar Kelimeler: *Çocuk, hemşirelik öğrencisi, çocuk sevme durumu.*

ABSTRACT
Introduction: This quasi-experimental study was conducted using pre- and post-tests with a single group to determine the effect of Pediatric Nursing course practice on nursing students' attitudes towards children and their levels of liking of children.

Method: The study was conducted at the Istanbul Medeniyet University in Turkey between February 11 and May 24, 2019. The study population consisted of junior students studying in the nursing department of the above-mentioned university. The study was carried out with all the students (n=45) who agreed to participate in the research without any sample selection. The data were collected by the researchers through a "Questionnaire" and the "Barnett Liking of Children Scale (BLCS)". In the study, questionnaires were applied before the application of the Pediatric Nursing course (pre-test) and after the completion of the 14-week internship (post-test). In the analysis of the data, percentile, mean and standard deviation, t-test in dependent groups, Mann Whitney-U test and Cronbach's alpha coefficient were used. Written consent of the students, ethical approval and official permission were obtained to conduct the research.
Results: In the study, the average age of the students was 20.62±0.96 years, 91.1% was female, 97.8% had siblings, and 51.1% had a previous child care experience. In the study, 62.2% of the students was found to have difficulty communicating with sick children in the pre-test, while this rate was 31.1% in the post-test. In the pre-test, 84.4% of the students was enjoying spending time with children, while in the post-test this rate was found to increase to 93.3%. In the pre-test, 42.2% of the students wanted to work as a pediatric nurse in the future, while in the post-test, this rate fell to 35.5%. In the study, it was found that the mean BLCS score of the students was 78.17±14.75 in the pre-test and 82.77±13.54 in the post-test, and that there was no statistically significant difference between the mean scores ($p>0.05$). In the study, it was found that the number of siblings and child-care experience have no effect on the students' BLCS score averages ($p>0.05$). In the pre-test, the gender variable was not found to affect the students' BLCS score averages, but it was found to be effective in the post-test ($p<0.05$).
Conclusion: In the study, it was found that the internship practice of the Pediatric Nursing course improved the communication of students with children. It was found that female students' levels of liking of children were higher than males after the internship.

Keywords: *Child, nursing student, liking of children status.*

Introduction

Love is defined as all the positive and good feelings that bring people closer together. To love is to respect and protect the individual's right through attention and tolerance. People need this feeling at every stage of their life. Especially during the childhood, children need love to develop a healthy and positive personality (1,2). Nurses working in the field of pediatrics should know the physical, social and emotional developmental characteristics and differences of children and should like them and pay attention to children (3). It is important that nurses who work in pediatrics clinics love children and try to communicate with children in a healthy way to reduce the children's hospital anxiety (4). As a result of the care given in pediatrics clinics, students experience positive emotions, such as hope, love, happiness, while also experiencing negative emotions such as fear, stress, helplessness. These positive emotions increase students' motivation and ability to learn, while negative emotions decrease their desire to learn and provide care. The higher levels of students' liking of children decreases these negative attitudes considerably (5,6). When we look at the literature, it is seen that there are very few studies on the status of liking of children of nursing students and pediatric nurses in Turkey. This study was conducted using determine the effect of Pediatric Nursing course practice on nursing students' attitudes towards children and their levels of liking of children.

Materials and Methods

Type of research

This quasi-experimental study was conducted using pre- and post-tests with a single group.

Place and time of research

The study was conducted at the Istanbul Medeniyet University in Turkey between February 11 and May 24, 2019.

Population and sample of research

The study population consisted of junior students studying in the nursing department of the above-mentioned university. The study was carried out with all the students (n=45) who agreed to participate in the research without any sample selection.

Collection of research data

The data were collected by the researchers through a "Questionnaire" and the "Barnett Liking of Children Scale (BLCS)" in the classroom setting. In the study, questionnaires were applied before the application of the Pediatric Nursing course (pre-test) and after the completion of the 14-week internship (post-test).

Questionnaire: It consists of questions about the socio-demographic and child loving characteristics of the students.

Barnett Liking of Children Scale: It's an assessment tool developed by Barnett and Sinisi (1990) for measuring people's attitudes towards children. The scale is a 14-item Likert type scale, scored between "1-Strongly Disagree" and "7-Strongly agree". Of the scale, 3rd, 6th, 10th and 13th items are reverse coded. The lowest and highest scores of the scale are 14 and 98 respectively. Higher scores indicate that people like children more, while the lower scores indicate that the level of liking of children is lower (7). The Turkish validity and reliability study was conducted by Duyan and Gelbal (2008) with university students. In the scale, 14-38 points indicate a lower level, 39-74 points indicate a moderate level, and 75-98 points indicate a high level of liking of children. In the reliability and validity study, the Cronbach's alpha reliability coefficient was found as 0.92 (8). In this study, the Cronbach's alpha value was 0.90 in the first application and 0.92 in the second application.

Ethical dimension of research

Written consent of the students, ethical approval and official permission were obtained to conduct the research.

Statistical analysis

In the analysis of the data, percentile, mean and standard deviation, t-test in dependent groups, Mann Whitney-U test and Cronbach's alpha coefficient were used. Written consent of the students, ethical approval and official permission were obtained to conduct the research.

Results:

In the study, the average age of the students was 20.62±0.96 years, 91.1% was female, 97.8% had siblings, and 51.1% had a previous child care experience. In the study, 62.2% of the students was found to have difficulty communicating with sick children in the pre-test, while this rate was 31.1% in the post-test. In the pre-test, 84.4% of the students was enjoying spending time with children, while in the post-test this rate was found to increase to 93.3%. In the pre-test, 42.2% of the students wanted to work as a pediatric nurse in the future, while in the post-test, this rate fell to 35.5%.

In the study, it was found that the mean BLCS score of the students was 78.17±14.75 in the pre-test and 82.77±13.54 in the post-test, and that there was no statistically significant difference between the mean scores (p>0.05; Table 1).

Table 1. Comparison of the Students' Scale Score Averages before and after the Pediatric Nursing Course

BLCS	Ort±SS	Test
Pre test	78.17±14.75	t=1.584
Post test	82.77±13.54	p=0.120

In the study, it was found that the number of siblings and child-care experience have no effect on the students' BLCS score averages ($p>0.05$). In the pre-test, the gender variable was not found to affect the students' BLCS score averages, but it was found to be effective in the post-test ($p<0.05$; Table 2).

Table 2. Comparison of BLCS Score Averages According to Some Characteristics of the Students

Characteristics	Pre test Ort±SS	Post test Ort±SS
Gender		
Female	77.87±15.23	83.82±13.67
Male	81.25±9.17	72.00±5.22
Test	U=75.000 p=0.780	U=24.500 p=0.017
Number of siblings		
1	82.75±9.62	78.43±14.93
2 and more	75.25±16.71	84.82±12.40
Test	U=165.000 p=0.150	U=163.000 p=0.136
Child-care experience		
Yes	79.86±13.77	84.91±13.38
No	76.40±15.84	80.54±13.65
Test	U= 226.000 p=0.539	U=194.000 p=0.180

Discussion

It is known that the care provided by nursing students and pediatric nurses is related to their levels of liking of children and that the nurses' levels of liking of children are affected by several factors. In our study, the Pediatric Nursing course did not affect the students' levels of liking of children. In the study, students' pre-test mean BLCS score was 78.17±14.75, and their mean score in the post-test was 82.77±13.54, the difference between the scores was not statistically significant (Table 1), but the students' levels of liking of children after the course were found to be higher than that of before the course. Kostak's study with nursing students also showed that (9) the students received 82.0±82.09 points on the scale before taking the course, and 14.07±82.35 points after taking the course, and that there was no statistically significant difference between the score averages. When we look at other studies conducted in Turkey, it was found that the average BLCS scores of student nurses and pediatric nurses working in the field of pediatrics were found to be higher (1,2,3,9,10).

In this study, a significant difference was found between the genders of the student nurses and their liking of children scores in the post-test ($p<0.05$). Female students' levels of liking of children were higher than male students. Unlike our study, Bektaş et al. found no significant differences between the students' gender and their liking of children status (1). In two studies conducted with nursing students in Turkey (9, 10), there was a significant difference between the gender of the students and their liking of children status. Female students' levels of liking of children were higher than male students. In Turkish culture, it is believed that the fact that

mothers are primarily responsible for the care of the children, and that the role of providing care for the child is assigned to females as a gender role may also cause lower liking of children scores in male students.

Conclusion

It was found that the nursing students had high levels of liking of children and that this was not affected by the Pediatric Nursing course, and that the genders of the students affected their levels of liking children in the post-test. It was found that female students' levels of liking of children were higher than males after the internship. In the study, it was found that the internship practice of the Pediatric Nursing course improved the communication of students with children. In line with these results, it is recommended to repeat the study with larger sample groups in order to determine other factors affecting the status of liking of children.

References

1 *Bektaş M, Ayar D, Bektaş İ, Selekoğlu Y, Kudubeş AA, Altan SS. Determining the factors that ınfluence nursing students' affection for children. The JPR. The Journal of Pediatric Research 2015; 2(1):37-41.*

2 *Akgün Kostak M, Semerci R, Kocaaslan E. Level of nurses" liking children and attitudes of child rising, Gümüşhane University Journal Of Health Sciences 2017;6(4); 146-55.*

3 *Erdem Y, Duyan V. A Determination of the factors that affect the level of pediatric nurses' liking of children. Turk J Med Sci 2011; 41(2):295-305.*

4 *Büyük ET, Rızalar S, Seferoğlu EG, Oğuzhan H. Analysing liking of children and parenting attitudes of nurses working in pediatric and adult clinics. The Journal of Pediatric Research 2014; 1(3):130-7.*

5 *Chen CW, Su TJ, Yang CY, Liu YY, Feng RF. Subjective experiences of student nurses in a pediatric practicum. FJJM 2009; 7(4):171-80.*

6 *Altay N, Törüner EK. Determining pediatric nursing students' clinical stress and liking of children scores, Dokuz Eylül University School of Nursing Electronic Journal 2014; 7:166-70.*

7 *Barnett MA, Sinisi CS. The initial validation of a liking of children scale. J Pers Assess 1990; 55(1-2):161-67.*

8 *Duyan V, Gelbal S. The adaptation study of barnett liking of children scale to turkish. Education and Science 2008; 33(148):40-48.*

9 *Akgün Kostak M. Nursing and midwifery students' state of liking of children, effects of paediatrics nursing lesson on the state of liking of children and affecting factors, Cumhuriyet Nursing Journal 2013; 2(2):50-56.*

10 *Baran G, Yılmaz G. Investigation of the status of liking children of the nursing students taking applied course of nursing on children's health and diseases and the effective factors. JAREN 2019; 5(2):91-96.*

FT30

Evaluation of Children with Acute Pancreatitis

*[1]Burcu Ceylan Cura Yayla, *[2]Ceyda Tuna Kırsaçlıoğlu, *[3]Tülin Revide Şaylı

*[1] Ankara Education and Research Hospital , Department of Pediatric Infection,

*[2] Ankara University, Department of Pediatric Gastroenterology, Hepatology, and Nutrition,
*[3] Ankara City Hospital, Department of Pediatric

Introduction: Although acute pancreatitis (AP) is uncommon in children, causes significant morbidity and mortality. This study aims to evaluate the clinical and laboratory findings, treatment approaches, complications of children with acute pancreatitis.
Material and methods: Thirty children who were diagnosed as acute pancreatitis during January 2008-April 2013 were evaluated.
Results: The most common etiology of acute pancreatitis was the drugs (30%), particularly L- asparaginase (44.5%). The biliary tract diseases (26.7%), infection (16.7%), hyperlipidemia (10%), cystic fibrosis (3.3%), and post-endoscopic retrograde cholangiopancreatography pancreatitis (3.3%) were other causes, and among 10%, no reason was detected. Abdominal pain (83,3%), nausea (70%), loss of appetite (63.3%), vomiting (56.7%), and fever (20%) were the most common symptoms. In 86.6% of cases amylase, in 73.9% lipase, and in 66.7% pancreatic amylase were elevated three times the upper limit of normal. The alanine transaminase, total and direct bilirubin levels in not drug-induced pancreatitis were higher than drug-induced pancreatitis ($p<0.05$). Ultrasonography, abdominal tomography, magnetic resonance cholangiopancretography revealed pancreatitis related changes 63.3%, 85%, 70% of patients, respectively. Oral feeding was started on 4 ± 5.6 days, with polymeric diet (30%), and medium chain triglyceride rich enteral diet (70%). The length of hospitalization was 16.5 ± 15.1 days (4-66 days). The patients fed with polymeric diet had a shorter hospitalization duration ($p<0.05$). The delayed initiation of oral feeding caused longer LOH ($p<0.001$). Pseudocyst (6,7%), sepsis (6.7%), and necrosis (3.3%) were the complications developed in patients.
Conclusion: Consequently, this study underlines the children with acute abdominal pain, especially who use drugs like asparaginase and valproic acid, or that are known to have gallstone/biliary sludge, need to be examined for acute pancreatitis through pancreatic enzymes and ultrasonography. Moreover, the study also highlights that early feeding in acute pancreatitis is related with shorter hospitalization duration.

Keywords: *Acute pancreatitis, children, etiology, treatment*

Akut Pankreatitli Çocukların Değerlendirilmesi

Giriş: Akut pankreatit (AP) çocuklarda nadir görülmekle birlikte önemli morbidite ve mortaliteye neden olmaktadır. Bu çalışmada AP'li çocuklarda klinik ve laboratuvar bulgularının incelenmesi ve komplikasyonlarının yanı sıra tedavi yaklaşımlarının değerlendirilmesi amaçlanmıştır.
Materyal ve metod: Hastanemizde Ocak 2008-Nisan 2013 yılları arasında AP tanısı ile izlenen 30 olgu incelendi.
Sonuç: Akut panktreatit etyolojisinde en sık neden ilaçlar (%30), özellikle de L-asparaginaz (%44.5) idi. Biliyer hastalıklar (%26.7), enfeksiyon (%16.7), hiperlipidemi (%10), kistik fibrozis (%3.3), endoskopik retrograde kolanjiopankreotografi sonrası pankreatit (%3.3) diğer

nedenlerdi ve %10'unda bir neden saptanamadı. Hastaların %83.3'ünde karın ağrısı, %70'inde bulantı, %63.3'ünde iştahsızlık, %56.7'sinde kusma ve %20'sinde ateş saptandı. Olguların %86.6'sında amilazın, %73.9'unda lipazın, %66.7'sinde pankreatik amilazın normalin üst sınırının en az 3 katı kadar artışı vardı. İlaca bağlı olmayan pankreatitte alanin transaminaz, total ve direkt bilirubin düzeyleri ilaca bağlı pankreatite göre daha yüksekti ($p<0,05$). Hastaların %63.3'ünde ultrasonografi, %85'inde bilgisayarlı tomografi ve %70'inde magnetik rezonans kolanjiopankreatografi ile pankreatit ile uyumlu değişiklik saptandı. Ağızdan beslenmeye başlama zamanı 4 ± 5,6 gün idi ve %30'u polimerik diyet, %70'i orta zincirli trigliseridden zengin enteral ürün ile beslendi. Hastanede yatış süresi 16,5 ± 15.1 gün (4-66 gün) idi. Polimerik diyet ile beslenenlerin hastanede yatış süresi daha kısaydı ($p<0,05$). Oral başlama süresi uzadıkça hastanede yatış süresi artmıştı ($p<0,001$). Hastalarda psödokist (%6,7), sepsis (%6,7) ve nekroz (%3,3) gelişti.
Sonuç olarak bu çalışmada L-asparaginaz, valproik asit gibi ilaç kullanan veya safra taşı/çamuru olduğu bilinen ve akut karın ağrısı olan çocukların pankreas enzimleri ve ultrasonografi ile AP için değerlendirilmesi gerektiği ve AP'de erken beslenmenin hastanede kalış süresini kısalttığı vurgulanmaktadır.

Anahtar kelimeler: *Akut pankreatit, çocuklar, etyoloji, tedavi*

Introduction

Acute pancreatitis (AP) is an inflammatory condition of the pancreas. Acute pancreatitis defined as the presence of pancreatic digestive enzymes in the serum and/or urine and the presence of radiological changes in the pancreas with clinically sudden abdominal pain (1-2). Acute pancreatitis has increased in recent years because of increasing drug usage, diagnostic tests and systemic diseases in children (3-5).

The most common causes of AP are biliary causes, systemic diseases, drugs, trauma in children as well as alcohol and gallstones are common in adults (2-6).

Acute pancreatitis is usually mild in children. However, some patients may develop serious illness and death (7). Acute pancreatitis may present with various clinical manifestations. Abdominal pain, which is the most common symptom, is present in 80-95% of the cases. However, the absence of abdominal pain does not exclude the diagnosis of AP. The second most common symptom is nausea and vomiting at a rate of 40-80%. Irritability is a finding indicated by parents in young children who do not describe abdominal pain (2,8).

The aim of this study was to investigate the demographic and clinical features, laboratory and imaging findings, treatment modalities, complications, mortality and morbidity rates of patients with AP.

Materials and Methods

In our study, we evaluated the medical records of 30 children who diagnosed as AP with history, clinical and laboratory findings at Ankara Child Health and Diseases Hematology Oncology Training and Research Hospital from January 2008 to April 2013 retrospectively. All patients had at least two features of the Atlanta criteria (9) (typical abdominal pain, serum amylase and/or lipase>3 times the upper limit of normal, characteristic findings of AP on imaging studies). If a patient had recurrent episodes of pancreatitis during study, only the first episode was included. Patients with chronic pancreatitis were excluded from the study. The study was approved by the local Clinical Research Ethics Committee (06.08.2012, numbered 126).

The demographic and clinical features, treatment modalities, complications, length of hospitalization (LOH), mortality and morbidity rates were recorded. In addition, complete blood count, biochemical parameters, blood lipid profile, amylase, lipase, pancreatic amylase

values, C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), coagulation parameters, specific investigations for etiology and imaging findings (ultrasonography (USG), computed tomography (CT) and magnetic resonance cholangiopancretography (MRCP) of the abdomen) were evaluated. The length of hospitalization and initiation time of oral feeding was compared between patients fed with polymeric diet/medium chain triglyceride (MCT) and Total parenteral nutrition (TPN).

The patients who could not detect any etiological cause by laboratory tests and imaging methods were called idiopathic. Gallstones, biliary sludge, annular pancreas, choledochal cyst, biliary system diseases was reported as biliary groups. Drug-related pancreatitis was defined as regression of pancreatitis after drug use and drug discontinuation.

The mean age, gender distribution, LOH, amylase, pancreatic amylase, lipase, Alanine aminotransaminase (ALT), Aspartate aminotransferase (AST), Gamma-Glutamyl Transferase (GGT), total bilirubin (t.bil) and direct bilirubin (d.bil) levels were compared between biliary and non-biliary groups and drug not-drug induced pancreatitis groups.

Statistical analysis

Statistical analysis of the data was performed with Statistical Package for Social Sciences (SPSS) for Windows-version 11.5. Descriptive statistics were presented as mean± standard deviation or mean (minimum-maximum) for continuous variables, and categorical variables as number of cases. The Student's t-test was used to assess the differences in means. The Mann-Whitney U test was used to assess the differences in medians. Categorical variables were evaluated by Fisher's exact test. Spearman's correlation test was used to determine whether there was a statistically significant correlation between discrete numerical variables. $P<0.05$ was considered statistically significant.

Results

Thirty children who were diagnosed as AP were included. Of the patients, 18 (60%) were male, 12 (40%) female and there was no statistically difference in terms of gender ($p>0.05$). The mean age of the patients was 12.4 ± 4.3 (3-18) years. The most common symptom was abdominal pain in 25 (83.3%) patients. Other symptoms were given in figure 1. While in 52% of the patients had epigastric abdominal pain, most frequently it radiated to back (32%). The most common etiology of AP was the drugs (30%), particularly L-asparaginase (44.5%). The list of etiology of AP was given in Table 1.

In 86.6% of cases amylase, in 73.9% of cases lipase, and in 66.7% of cases pancreatic amylase were elevated three times the upper limit of normal level. Amylase, pancreatic amylase, lipase values and mean increases at the time of diagnosis are given in Table 2. Laboratory findings of biliary-non biliary groups and drug not-drug induced pancreatitis groups are given in Table 3. Alanine transaminase, total and direct bilirubin levels in not drug-induced pancreatitis were higher than drug-induced pancreatitis ($p<0.05$). Also amylase, ALT, AST, GGT, total and direct bilirubin levels in biliary-groups were higher than non-biliary groups ($p<0.05$). Ultrasonographic evaluation was performed in all patients, but the pancreas of seven patients (23.4%) could not be evaluated by gas and pancreas imaging was normal in four patients (13.4%). In four of seven patients who could not be evaluated for pancreas, CT showed increased pancreatic size and decreased pancreatic echogenicity or heterogeneous appearance. Ultrasonography, CT, MRCP revealed pancreatitis related changes 63.3%, 85%, 70% of patients, respectively. Imaging findings are summarized in Table 4. Abdominal USG, tomography and MRCP evaluation of the patients revealed multiple findings.

All patients were initially discontinued oral feeding and intravenous fluid was given. Oral feeding was started on 4 ± 5.6 days, with polymeric diet (n:9, 30%), or MCT diet (n:21, 70%). The length of hospitalization of all patients was 16.5 ± 15.1 days (4-66 days). The length of

hospitalization was 8±10.2 days (4-34 days) in the patients fed with polymeric diet, LOH was 23±16 days (4-66 days) in the patients who fed with MCT diet. The difference between the groups was statistically significant ($p<0.05$). Total parenteral nutrition was administered in six (20%) of patients on 4±2.5 days and continued for 14,5±15,9 days. The length of hospitalization was 37±18.8 days (18-66 days) for TPN receiving patients and 13±9.6 days (4-40 days) for not receiving TPN. The difference between the groups was statistically significant ($p<0.05$). The delayed initiation day of oral feeding caused long LOH ($p<0.001$).
Pseudocyst (6.7%), sepsis (6.7%), and necrosis (3.3%) were developed in patients. There was no death due to AP. However, two patients (6.7%) died related to the underlying systemic disease. Recurrence was detected in four (13.4%) patients. None of the patients had chronic pancreatitis and pancreatic insufficiency.

Discussion

Acute pancreatitis is a painful inflammatory disease that causes important health problems (10). It has been observed that AP has increased in children in the last 10-15 years (11).
In addition to typical abdominal pain, increasing pancreatic enzymes play significant role in the diagnosis of AP. The value of amylase is high for diagnosis of AP, especially in the first 24 hours when symptoms occur. Lipase is more reliable in the diagnosis of AP and continues to be high for a longer time than amylase. In our study, 86.6% of patients had increased amylase levels, 73.9% of patients had increased lipase and 66.7% of had increased pancreatic amylase. In 56.5% of the patients had both increased amylase and lipase levels and all of the enzymes increased in 50% of patients. According to the literature, increased lipase is more specific for diagnosis of AP (12). In our study we detected increased lipase levels less than amylase levels. It may be related the fact that lipase was not assied in our hospital laboratory and was sent to an external center. In addition, although amylase could be analysed in all patients, lipase could be analysed in 23 (76.7%) of patients.
In childhood pancreatitis, lipase, AST, ALT, total bilirubin levels were higher in the biliary group than in the non-biliary group (13). Similarly, in our study, mean amylase, ALT, AST, GGT, total and direct bilirubin levels were significantly higher in the biliary group than non-biliary group ($p <0.05$). We determined high levels of amylase, ALT, AST, GGT, total and direct bilirubin should be considered for primarily consider biliary causes with imaging

Methods.

Nutrition is an important element in the treatment of AP. It was believed that pancreatic secretion was reduced by stopping oral feeding of patients with AP before 20 years. However, large controlled studies found that pancreatic complications were decreased with early feeding (14). Oral feeding is recommended to be started in the first 24-48 hours in patients with mild pancreatitis (2). In our study, initiation time of oral feeding was 4± 5.6 days. The delayed initiation time of oral feeding caused longer LOH. This may be due to atrophy of the gastrointestinal tract and increased complications with bacterial translocation without enteral feeding.

Conclusion

Acute pancreatitis is an important health problem although it is rarely seen in childhood. Acute pancreatitis should be considered in children with abdominal pain especially who use drugs like L-asparaginase and valproic acid, or that are known to have gallstone/biliary sludge, need to be examined for AP through pancreatic enzymes and ultrasonography. Moreover, the study also highlights that early feeding in AP is related with shorter hospitalization duration.

References

1 *Lowe ME, Whitcomb DC. Acute and chronic pancreatitis. In: Walker WA, Goulet O, Kleinman RE, Sherman PM, Shneider BL, Sanderson IR, editors. Pediatric Gastrointestinal disease. Ontario: B.C. Decker; 2004.p.1584- 97.*

2 *Srinath AI, Lowe ME. Pediatric pancreatitis. Pediatr Rev 2013; 34(2): 79-90.*

3 *Park A, Latif SU, Shah AU, Tian J, Werlin S, Hsiao A, et al. Changing referral trends of acute pancreatitis in children: A 12-year single-center analysis. J Pediatr Gastroenterol Nutr 2009; 49(3): 316-22.*

4 *DeBanto JR, Goday PS, Pedroso MR, Iftikhar R, Fazel A, Nayyar S, et al. Acute pancreatitis in children. Am J Gastroenterol 2002; 97(7): 1726-31.*

5 *Morinville VD, Barmada MM, Lowe ME. Increasing incidence of acute pancreatitis at an American pediatric tertiary care center: is greater awareness among physicians responsible? Pancreas 2010; 39(1): 5-8.*

6 *Mekitarian Filho E, Carvalho WB, Silva FD. Acute pancreatitis in pediatrics: a systematic review of the literature. J Pediatr (Rio J) 2012; 88(2): 101-14.*

7 *Chang YJ, Chao HC, Kong MS, Hsia SH, Lai MW, Yan DC. Acute pancreatitis in children. Acta Paediatr 2011; 100(5): 740-4.*

8 *Robertson MA. Acute and chronic pancreatitis. In: Walker WA, Durie PR, Hamilton JR, Walker-Smith WA, Watkins JB, editors. Pediatric Gastrointestinal Disease Pathophysiology, Diagnosis, Management. Philadelphia: B.C. Decker; 2000.p.1321-44.*

9 *Bradley EL, 3rd. A clinically based classification system for acute pancreatitis. Summary of the International Symposium on Acute Pancreatitis, Atlanta, Ga, September 11 through 13, 1992. Arch Surg 1993; 128(5): 586-90.*

10 *Pandol SJ, Saluja AK, Imrie CW, Banks PA. Acute pancreatitis: bench to the bedside. Gastroenterology 2007;132(3):1127-51.*

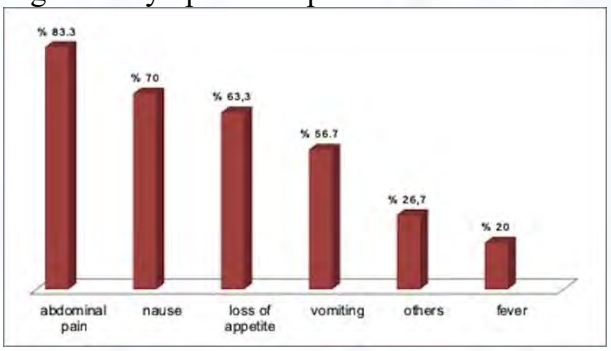
11 *Nydegger A, Heine RG, Ranuh R, Gegati-Levy R, Crameri J, Oliver MR. Changing incidence of acute pancreatitis: 10-year experience at the Royal Children's Hospital, Melbourne. J Gastroenterol Hepatol 2007; 22(8): 1313-6.*

12 *Agarwal N, Pitchumoni CS, Sivaprasad AV. Evaluating tests for acute pancreatitis. Am J Gastroenterol 1990; 85(4): 356-66.*

13 *Choi BH, Lim YJ, Yoon CH, Kim EA, Park YS, Kim KM. Acute pancreatitis associated with biliary disease in children. J Gastroenterol Hepatol 2003; 18(8): 915-21.*

14 *Bai HX, Lowe ME, Husain SZ. What have we learned about acute pancreatitis in children? J Pediatr Gastroenterol Nutr 2011; 52(3): 262-70.*

Figure 1. Symptoms of patients



Other symptoms: jaundice, abdominal distension, weight loss, seizures and drowsiness

Table 1. Etiological classification of acute pancreatitis

Etiology	n	%
Drugs	9	30
L-Asparaginase	4	13.3
Valproic acid	2	6.7
Imipramine	1	3.3
hydrochloride	1	3.3
Mesalazine	1	3.3
Carbamazepine		
Biliary diseases	8	26,7
Gallstone/biliary sludge	6	20,1
Choledochal cyst	1	3,3
Annular Pancreas	1	3,3
Infection	5	16,7
Mumps	2	6,7
Brucella	1	3,3
Hepatitis A	1	3,3
EBV	1	3,3
Hyperlipidemia	3	10
Idiopathic	3	10
Cystic fibrosis	1	3,3
Secondary to ERCP	1	3,3

Table 2. Amylase, pancreatic amylase (p amylase) and lipase levels of patients at admission

	Mean (±SD)	Minimum-Maximum	Mean increase (times)
Amylase(U/L)	586(± 667)	250-2658	5
Pamylase (U/L)	206 (± 319)	36-1356	4
Lipase(U/L)	305 (± 797,9)	23-2922	6.3

Table 3. Comparasion of drug -not drug induced groups and biliary and non- biliary groups

	Biliary groups n:8 Mean (±SD) (min-max)	Non-biliary groups n:22	p	Drug-induced groups n:9 Mean (±SD) (min-max)	Not drug induce groups n: 21	p
Female	3 (37.5 %)	9 (40.9 %)	0.0723	4 (44.4 %)	8 (38.1 %)	0.214
Male	5 (62.5%)	13 (59.1%)		5 (55.6%)	5 (61.9%)	
Mean age of patients (years)	12.9±4.3	12.2±4.4	1.000	10.9±5.3	13±3.7	1.000
Amylase (U/L)	1313±828 (413-2569)	649±512 (250-2658)	0.021	405± 259 (270-908)	596±753 (250-2658)	0,164
P amylase	1356	204.5±197	>0.05	189±129	208±408	0.315

(U/L)		(36-879)		(36-454)	(58-1356)	
Lipase (U/L)	1055±1617 (61-2922)	589±657 (23-2868)	>0.05	292±317 (23-980)	450±967 (61-2922)	0.643
ALT (U/L)	199,5±147 (66-468)	15.4±127 (1-521)	<0.001	14±20 (1-67)	75±165 (1-521)	0,019
AST (U/L)	113±174 (28-519)	25.5±348 (10-1662)	<0.001	26±4.7 (15-30)	35 ±364 (10-1662)	0,070
GGT (U/L)	232±395 (108-1317)	18.5±147 (2-548)	<0.001	21±110 (7-349)	93±304 (2-1317)	0.263
T. bil (mg/dl)	8.5±12 (0,4-34.6)	0,5±0.8 (0.1-4.0)	0.004	0.4±0.3 (0.1-1.3)	1.0 ±8.1 (0.2-34.6)	0.007
D. bil (mg/dl)	6±9.2 (0,1-26.4)	0,2±0.6 (0-3.0)	<0.001	0.1±0.1 (0.02-0.4)	0.3±6 (0-26.4)	0.012
The length of hospitalization (day)	13±11.3 (7-40)	17±16.4 (4-66)	>0.05	18±22 (6-66)	16±10.7 (4-40)	>0.05

Table 4. Imaging findings in acute pancreatitis

	Ultrasonography n:30	Computed tomography n:20	MRCP n:10
Enlarged pancreas	18 (60%)	14 (70%)	5 (50%)
Hypoechoic pancreas	13 (43.4)	12 (60%)	3 (30)
Dilated pancreatic duct	3 (10%)	2 (10%)	2 (20%)
Peripancreatic fluid	3 (10%)	4 (20%)	2 (20%)
Pseudocyst	2 (6.7%)	2 (10%)	1 (10%)
Stones or sludge	11 (36.7%)	3 (15%)	4 (40%)

FT31

Screening Results Before Sport Participation: Single Center Experience

Melih Timuçin Doğan

Objective: There is a significant increase in the risk of sudden death in athletes with heart problems. Professional athletes with undiagnosed heart problems or rhythm disorders may encounter significant problems during competitive sports. The number of children engaged in professional sports is increasing rapidly in our country. The role and importance of family physicians in terms of licencing and consent for sport training at school is extremely important. Our aim in this study was to emphasize what we should pay attention to in the anamnesis and examination to give a sports consent.

Methods: All children who applied to our clinic in the last 6 months to receive sports consent were included in the study. Families were asked if the child had chest pain, palpitation, syncope and fatigue. She/He was also asked if she had a relative with a history of sudden cardiac death before 50 years of age. The demographic characteristics of children were recorded. A 12-lead ECG was recorded in all patients. Detailed echocardiographic examination and exercise test were performed.

Results: Children who applied for sports consent were between 6 and 18 years old. The median age was 12.39 ± 2.75, the youngest and the oldest child was 6 and 18 years old, respectively. Of 122 children, 36 were female (29.5%) and 86 were male (70.5%). None of the children had a family history of sudden death before the age of 50. First degree AV block was found in the ECG of 2 children and atrial early beat was detected in the ECG of 1 child. Holter monitoring was performed for 24 hours. There were 206 atrial premature beats. Echocardiographic examination of 4 children revealed pathology; Three children had mitral valve prolapse and one child had arrhythmogenic right ventricular dysplasia (ARVD). Cardiac MRI was performed to the patient with suspected ARVD and the diagnosis was confirmed. In our study, we gave treatment by stating that it was not appropriate to do sports because of the risk of sudden cardiac death in only 1 out of 122 children.

Conclusion: A detailed history should be obtained from all families before giving a sports consent. Family history of sudden death and chest pain before age of 50 should be asked. Patients with syncope and chest pain should be referred to a pediatric cardiologist. Systemic examination of all children should be performed. Patients with murmur, systemic hypertension and absence of femoral pulse should be referred to a pediatric cardiologist. All children should have a 12-lead ECG, Qt distance should be calculated, rhythm should be checked, hypertrophy findings, ST-T changes should be evaluated; Children with pathologic ECG findings should be consulted to a pediatric cardiologist.

FT32

An Immunodeficiency May Be Detected in A Patient with Cystic Fibrosis: A Case Report

Hatice YILMAZ DAĞLI[1], Sevgi PEKCAN[2], İsmail REİSLİ[3], Sevgi Keleş[3], Şükrü Nail GÜNER[3]

[1]Necmettin Erbakan University Meram Faculty of Medicine, Department of Pediatrics, Konya, Türkiye

[2]Necmettin Erbakan University Meram Faculty of Medicine, Department of Pediatrics, Division of Pediatric Pulmonology, Konya, Türkiye

[3]Necmettin Erbakan University Meram Faculty of Medicine, Department of Pediatrics, Division of Pediatric Allergy and Immunology, Konya, Türkiye

INTRODUCTION-OBJECTIVE

Cystic fibrosis (CF) is caused by a mutation in Cystic Fibrosis Transmembrane Regulatory Protein (CFTR) and is the most common mortal disease of white race that exhibits autosomal recessive mode of inheritance. The main disturbance is formation of abnormal secretions from exocrine glands of sweat glands, salivary glands, tracheobronchial tree, large intestine and pancreas. 85% of individuals with cystic fibrosis develop fat and protein malabsorption, which leads to steatorrhea due to pancreatic failure. This condition results in symptoms, including deficiency of fat-soluble vitamins, insufficient calorie gain, growth and developmental retardation and rectal prolapsus. Patients generally present with recurrent or persistent pulmonary infections, chronic cough, recurrent episodes of bronchitis and malnutrition.

Although incidence of cystic fibrosis in our country remains unknown, it is prevalent in our country especially due to consanguineous marriages. CF screening with Guthrie test included in context of neonatal screening program has been implemented by Ministry of Health since 1st January 2015. Thus, patients' nutritional stuatus has improved, pulmonary functions have become better, survivals have been prolonged and quality of life has been improved.

In this study, a case of a patient who was diagnosed with cystic fibrosis due to high rate of consanguineous marriages and then diagnosed with accompanying immunodeficiency is reported.

CASE REPORT

A 30 month-old female patient had been referred to us after she was found to have two high immune reactive trypsinogen levels (1st IRT: 90 mmol/l, 2nd IRT: 70 mmol/L) by the family physician at 24 days of age. She had no complaints. On her physical examination, her vital signs were stable, growth percentiles and systemic findings were normal. Her background was nonspecific. It was learned from her family history that her parents were third-degree relatives. The sweat chloride test was resulted as 46 mEq/L (suspicious).

The patient was then begun to be followed-up in our Pediatric Pulmonology Clinic. In her follow-ups, she has administered intravenous antibiotherapy for 2-3 times annually due to recurrent episodes of bronchopneumonias. Because she had recurrent growths of Pseudomonas aeruginosa (P. aeruginosa) she was treated as inpatient and then diagnosed with chronic colonization with P. aeruginosa. The patient who had recurrent episodes of diarrhea and had been hospitalized 1-2 times a year for due to Pseudobartter Syndrome was requested cystic fibrosis gene analysis. The result of patient's gene analysis was reported as c650 A>G heterozygous. No deletion-duplication was detected in CTFR gene. As she had a clinical

presentation consistent with cystic fibrosis, she has been followed-up in our clinic with diagnosis of cystic fibrosis.

The patient was consulted to Pediatric Allergy and Immunology Clinic because of the fact that she had had more frequent hospitalizations and that the growth of P. aeruginosa in throat cultures started at a very young age. Laboratory results were as follows: White Blood Cell: 9400/ mm3, ANS : 3700/mm3, ALS: 4600/mm3 , Hb: 12.8 gr/dl and PLT: 205,000/mm3. immunoglobulin (Ig) test results were as follows: Ig G: 677 mg/dl (604-1941) Ig A: 23 mg/dL↓ (30-107 mg/dl), Ig M : 73 mg/dl (71-235) and Ig E: 18 mg/dl. Isohemaglutinine level 1/8, anti-HbS was 191, tetanus antibody was 2.2. In peripheral lymphocyte subgroups; total T cell ratio and natural killer cell ratio were determined to be low. The patient was then diagnosed with partial immunoglobulin A deficiency and classical natural killer cell deficiency in addition to diagnosis of cystic fibrosis. The patient was put on an intravenous immunoglobulin treatment at a dose of 400 mg/kg once in three weeks. After IVIG treatment was initiated, the patient has had no growth of *Pseudomonas aeruginosa* and no hospitalization (for 1 year). This case was reported as coexistence of cystic fibrosis and primary immunodeficiency is rare.

CONCLUSION

It was thought that because modified genes play a role together with a mutation in etiology of a patient with a positive mutation for cystic fibrosis and evidence of immunodeficiency, the gene related to immunodeficiency can make evidence of cystic fibrosis more prominent. Furthermore, this report is reported to highlight coexistence of two diseases in offspring of a consanguineous parent.

FT32

Kuduz Riskli Teması Olan Çocuk Hastaların Değerlendirilmesi

Uzm. Dr. Aysun Tekeli, Uzm. Dr. Betül Öztürk, Prof Dr. Can Demir Karacan

SBÜ Dr. Sami Ulus Kadın Doğum, Çocuk Sağlığı ve Hastalıkları Eğitim ve Araştırma Hastanesi Çocuk Acil Kliniği, Ankara

GİRİŞ:

Kuduz sıklıkla kuduz olan hayvanın ısırmasıyla insanlara geçen virusun yol açtığı ölümle sonuçlanan ensefalomiyelit oluşturan zoonotik bir hastalıktır. Dünyada ve ülkemizde halen önemini koruyan bir halk sağlığı sorunudur. Ülkemiz için hayvan ısırığı sıklığı bilinmese de, Amerika Birleşik Devletleri'nde tüm acil servis başvurularının %1'ini oluştururken, gelişmekte olan bir ülke olan Hindistan'da hastaneye yapılan çocuk hasta başvurularının %4,6'sını hayvan ısırıkları oluşturduğu bildirilmiştir. Korunma yaklaşımları hayat kurtarıcıdır ve kuduz riskli teması olan herkese temas sonrası profilaksi uygulanmalıdır. Kuduzda inkübasyon süresi çok değişken olduğundan, riskli temas sonrasında aradan geçen süreye bakmaksızın temas kategorize edilerek uygun profilaksiye başlanmalıdır. Erken ve önerilere göre uygulanan temas sonrası profilaksi %100 etkindir. Kuduz riskli temas profilaksisinde en önemli adım yara bakımıdır. Tüm riskli ısırıklarda antibiyotik profilaksisi verilmelidir. Tetanoz ve kuduz aşısı / immünglobulini güncel rehberlerin önerdiği şemaya uygun yapılmalıdır.

Bu çalışmada, hastanemiz Çocuk Acil Kliniğine kuduz riskli teması ile başvuran olguların klinik,demografik özellikleri ve aşılama şemalarını araştırmak amaçlanmıştır.

GEREÇ YÖNTEM

SBÜ Dr. Sami Ulus Kadın Doğum, Çocuk Sağlığı ve Hastalıkları Eğitim ve Araştırma Hastanesi Çocuk Acil Kliniği'ne Ağustos 2016- Ağustos 2018 arasında kuduz virüsü ile temas riski nedeniyle başvuran hastaların tıbbi kayıtları geriye dönük olarak incelendi. Hastaların demografik bilgileri, yaralanma yerleri, maruziyet kaynakları, tetanoz / kuduz aşı ve immünglobulin yapılma oranları değerlendirildi. Hastaların değerlendirilmesinde, tedavilerinin ve profilaksilerinin planlanmasında T. C. Sağlık Bakanlığı Türkiye Halk Sağlığı Kurumu Kuduz Saha Rehberi kullanıldı. Veriler ortalama ± standart hata ve % ile ifade edildi.

BULGULAR

Toplam 177 hasta kuduz virüsüyle temas riski nedeniyle hastanemiz acil kliniğine başvurdu. Hastaların yaş ortalaması 7.6±4.4 yıl ve % 58.8'i erkek idi. Yaralanma yeri sırasıyla üst ekstremite %51.6, alt ekstremite %27, yüz % 10.6, gövde %5.7 ve birden fazla yerin yaralanması %4.9 idi. Maruziyet kaynağı % 50.8 kedi, %46.3 köpek, %1,7 at ve %0.6 yarasa ve fare idi. Kuduz riskli temas en fazla yaz %28.8, en az kış %15.8 mevsiminde olmuştur. 80 hastada (%45.2) derinin hafif sıyrılması görülürken; 97 hastada (%54.8) deriyi zedeleyen ısırma ve tırmalama görüldü. 48 (%27.1) hayvan gözlem altında, 32(%18) hayvan sahipli ve 2 hayvan (kedi, yarasa) öldürülmüş idi. Olguların %61'i riskli temas kategori 3 olarak değerlendirildi, kuduz aşısı ve immunglobulini yapıldı. Hastaların 18'inin (%10.2) aşılarını eksik bıraktığı veya başka bir merkezde devam ettiği gözlendi. Tetanoz aşısı 49 hastaya (%27.6) yapıldı, tetanoz immünglobulin ihtiyacı olmadı.

TARTIŞMA

Ölümcül zoonotik enfeksiyonlardan biri olan kuduz engellenebilir bir hastalık olmasına rağmen önemini tüm dünyada halen korumaktadır. Kuduz hastalığında, klinik bulguları

geliştikten sonra özgün bir tedavisi olmadığı için korunma yaklaşımları hayat kurtarıcıdır. Dünya Sağlık Örgütü verilerine göre her yıl 15 milyondan fazla insan kuduzdan korunmak amacıyla temas sonrası aşılanmaktadır. Olgularımızın hepsine rehbere uygun kuduz aşısı yapılmıştır. Ülkemizde yapılan çalışmalarda hayvan ısırığına maruz kalan hastaların yaklaşık yarısını çocuk hastalardır. Çalışmamızda değerlendirilen çocukların ortalama yaşı 7.6 yıldı. Son dönemde Derinöz ve Akar'ın yapmış olduğu çalışmada da hayvan ısırıklarının en sık 11–15 yaş grubunda görüldüğü bildirilmiştir. Ülkemizde yapılan diğer benzer çalışmalarda da 6–15 yaş arası çocukların hayvan ısırıklarına en sık maruz kalan yaş grubu olduğu saptanmıştır. Yapılan çalışmalarda başvuran kuduz riskli temas vakaları en çok erkek cinsiyette ve yaz mevsiminde görüldüğü tespit edilmiştir. Çalışmamızda da benzer sonuçlar elde edilmiştir. Yaralanma yeri en sık ekstremite %78.6 olduğu tespit edildi. Literatürdeki çalışmalarda da, hem erişkin hem çocuklarda en sık ısırılan bölgenin genellikle ekstremite olduğu bildirilmiştir. Çalışmamızda riskli kuduz temasının daha çok (%82) sahipsiz kedi ve köpek ile olduğu görülmektedir. Ankara'da 2005–2009 yılları arasında meydana gelen ve bildirimi yapılan toplam 25,480 hayvan ısırığının %79,1'inden köpekler, %19,9'undan kediler sorumlu bulunmuştur. Kuduz hastalığının önlenmesinde, sahipsiz hayvanların aşılanması ve düzenli denetimlerinin yapılması, rehbere uygun aşı ve immünglobulin tedavisi, toplumun hastalık ve korunma konusunda eğitimi önemlidir.

Kaynaklar

1. *Ellis R, Ellis C. Dog and cat bites. Am Fam Physician 2014;90:239–43.*
2. *Samanta M, Mondal R, Shah A, Hazra A, Ray S, Dhar G et al. Animal bites and rabies prophylaxis in rural children: Indian perspective. J Trop Pediatr 2016;62:55–62.*
3. *Temiz H, Akkoç H. Evaluation of 809 cases applicated to a rabies vaccination center of Diyarbakır Government Hospital. Dicle Tıp Dergisi 2008;35:181–4.*
4. *Söğüt Ö, Sayhan MB, Gökdemir MT, Kara HP. Türkiye'nin Güneydoğusunda önlenebilir bir halk sağlığı sorunu: Kuduz riskli temas olguları JAEM 2011;1:14–7.,*
5. *Derinöz O, Akar T. Bir üniversite hastanesi çocuk acil servisine başvuran hayvan ısırıkları olguları. J Pediatr Emerg Intensive Care Med 2017;4:22–6.*
6. *Aksoy M, Demirbaş B, Maden F ve ark. Ankara İlinde 2005– 2009 yılları arasında görülen şüpheli ısırıkların ve kuduz aşılamasının değerlendirilmesi 3. EKMUD Kongresi, Ankara 12–16 Mayıs 2010, Kongre Özet Kitabı s:199.*
7. *World Health Organization. Rabies. Fact sheet. http://www.who.int/mediacentre/factsheets/fs099/en/. [accessed 16.09.2017].*
8. *Willoughby Jr RE. Rabies virus. In: Long S. S., Pickering L. K., Prober C. G. eds. Principles and Practice of Pediatric Infectious Diseases, 4th ed. Churchill Livingstone: Pennsylvania, 2012:1145–9*

FT34

Influenza Infection in Infants Under 1 Year of Age

Mustafa Gençeli1, Özge Metin Akcan2, Sevgi Pekcan3, Şükrü Nail Güner4
[1]*Necmettin Erbakan University, Meram Faculty of Medicine, Department of Pediatrics, Konya*
[2]*Necmettin Erbakan University, Meram Faculty of Medicine, Pediatric Infectious Diseases Clinic, Konya*
[3]*Necmettin Erbakan University, Meram Faculty of Medicine, Pediatric Pulmonology Clinic, Konya*
[4]*Necmettin Erbakan University, Meram Faculty of Medicine, Pediatric Allergy and Immunology Clinic, Konya*

Amaç: İnfluenza virüs enfeksiyonları epidemi ve pandemilerle seyreden, ciddi morbidite ve mortalite ile ilişkilendirilen, halen dünya genelinde önemini koruyan bir enfeksiyon etkenidir. Bir yaş altı infantlarda influenza virüs enfeksiyonlarının hospitalizasyon ve komplikasyonlarla ilişkisi olması sebebiyle bu çalışma planlanmıştır.
Gereç ve Yöntem: Ekim 2017- Şubat 2018 tarihleri arasında influenza tanısı alan 55 infant retrospektif olarak değerlendirilmiştir.
Bulgular: Hastaların ortalama yaşı 5,6 ± 2,1 (2-11) ay idi. Hastaların % 47'si hastaneye yatırılarak, % 53'ü ayaktan takip edildi. 20 hastaya PCR yöntemiyle, 35 hastaya hızlı antijen testi ile tanı konuldu. Hastaların % 54,5'i (n: 30) üst solunum yolu enfeksiyonu, % 32,7'si (n:32) pnömoni, %10,9'u (n:6) sepsis, %1,8'i (n:1) ensefalit tanısıyla takip edildi. Ortalama yatış süresi 8,32 (2-38) gün olarak saptandı.
Sonuç: İnfluenza bir yaş altı infantlarda yüksek oranda hospitalizasyona sebep olmaktadır. İnfluenza virüs enfeksiyonlarının hızlı ve doğru tanı yöntemleri ile belirlenmesi ile tedavinin düzenlenmesi ve uygun izolasyon önlemleri sağlanacaktır.

Anahtar kelimeler: *influenza, infant, PCR, hızlı antijen testi*

ABSTRACT
Objective: Influenza virus infection is an infectious agent which leads to epidemics and pandemics, is associated with severe morbidity and mortality and still maintains its importance worldwide. This study was planned due to association of influenza virus infection in infants under 1 year of age with hospitalization and complications.
Material and Method: 55 infants with a diagnosis of influenza between October 2017 and February 2018 were retrospectively evaluated.
Results: Mean age of the patients was 5.6 ± 2.1 (2-11) months. Of the patients; 47% were followed-up as inpatients and 53% as outpatients. 20 patients were diagnosed with the PCR method and 35 were diagnosed with rapid antigen test. Of the patients; 54.5% (n: 30) were followed-up with diagnosis of upper respiratory tract infections, 32.7% (n: 32) with pneumonia, 10.9% (n: 6) with sepsis and 1.8% (n: 1) with encephalitis. Mean duration of hospital stay was determined to be 8.32 (2-38 days) days.
Conclusion:Influenza causes hospitalizations to a great extent in infants under 1 year of age. Determination of influenza virus infections by rapid and accurate diagnosis methods, regulation of treatment and appropriate isolation measures will be provided.

Keywords: *influenza, infant, PCR, rapid antigen testing*

Introduction:
Influenza A and B viruses are among the most common causes of severe diseases and deaths worldwide, affecting millions of people every year.[1] Symptoms including fever, cough, nasal discharge, fatigue, myalgia and headache occur. Influenza viruses which are very contagious and causes epidemics, continue their existence for a long period of time through making alterations in their antigenic structures and not evolving a permanent immune response. Epidemics and pandemics caused by influenza viruses are closely associated with sensitivity of individuals to the virus and virulence of the virus. Influenza-associated deaths still have an importance place despite of many socio-economical advancements.[2] Especially in infants under 2 years of age, rates of influenza infection-associated severe diseases and mortality significantly increase.[3] In this study it was aimed to evaluate socio-demographical characteristics, clinical findings and laboratory examinations of the patients under one year of age who were diagnosed with influenza during 2017- 2018 autumn-winter period, which are known to be high-severity influenza season with hospitalizations by American Center for Disease Control and Prevention.

Material and Method:
55 infants under one year of age who presented with fever, cough, nasal discharge and unease and were diagnosed with influenza by rapid antigen test or real-time polymerase chain reaction (PCR) method between October 2017 and February 2018 were retrospectively evaluated.

Results:
Mean age of the patients (37 male, 18 female) was 5.6 ± 2.1 (2-11) months. Of the patients; 47% were followed-up as inpatient and 53% as outpatient. 20 patients were diagnosed with the PCR method and 35 were diagnosed with rapid antigen test.Patients' presenting complaints were fever in 83%, cough in 61%, nasal discharge in 40%, unease in 5%, diarrhea in 5% and seizure in 1.8%. In physical examinations of the patients; tonsillar hyperemia was observed in 65%, tachypnea in 38%, rales in 30%, rhonchi in 14%, hypoxia in 7.3%, cutis marmorata in 5% and bulging anterior fontanel in 5%. Of the patients; 54.5% (n: 30) were followed-up with diagnosis of upper respiratory tract infections, 32.7% (n: 32) with pneumonia, 10.9% (n: 6) with sepsis and 1.8% (n: 1) with encephalitis. 91% of patients at 1-3 months of age followed as inpatients. Of the hospitalized patients under three months of age; five were followed up with pneumonia, four with sepsis and one with encephalitis. Laboratory results of the hospitalized patients were as follows: leukocyte: 8916/mm^3 (2500- 20900/mm^3), neutrophil: 3736/mm^3 (228- 10000/mm^3), lymphocyte: 4210/mm^3 (574-8300/mm^3), platelet: 280000/mm^3 (21800-528000/mm^3) and C-reactive protein (CRP): 19.53 mg/L (0-87 mg/L). One patient was determined to have hypertransaminasemia and work-ups of this patient carried on with pre-diagnosis of Alagille syndrome. Mean duration of hospital stay was 8.32 days (2-38), mean duration of fever was 2.24 days and time to reduction of fever after initiation of treatment was 0.84 days. All of the patients were administered oseltamivir as antiviral treatment. During the study period, one patient died. These patient had a history of operation for tracheo-esophageal fistula and a syndromic facial appearance died on the 13th day of hospitalization while being followed-up in intensive care unit on mechanical ventilation support.

Discussion and Conclusion:

Influenza virus leads to infections with severe mortality and morbidity at all ages all over the world. It is the only virus among respiratory viruses, which can undergo antigenic alteration. Influenza is transmitted with inhalation of small particles produced during coughing and sneezing.

The presenting complaints of patients who required hospitalization due to pandemic influenza in United States of America (USA) were fever in 93%, coughing in 83%, nasal discharge in 36%, myalgia in 36% and sore throat in 31%.[4] Similarly, in our study fever (83%), cough (61%) and nasal discharge (40%) comprised the most common presenting complaints.

Complications of influenza are usually associated with underlying chronic diseases. However, it can also lead to high mortality and morbidity in previously healthy infants. According to a population-based surveillance study conducted between 2003 and 2012 in USA, 75% of the hospitalized patients under 12 months of age were reported to be previously health.[5] In our study, 80% of the hospitalized patients were previously healthy. Duration of hospital stay was variable; the patient with shortest duration of hospital stay was treated as inpatient for 2 days and the one with longest duration of hospital stay was treated as inpatient for 38 days. Mean duration of hospital stay was determined to be 8.32 days. In our study; history of premature birth (3 patients), presence of immunodeficiency (1 patient), cystic fibrosis (2 patients) and neuro-motor retardation were determined to be risk factors for prolonged hospitalization.

Neurological complications of influenza are more common among children at six months to four years of age. Major neurological complications are encephalopathy, febrile convulsion and aseptic meningitis.[6] One patient was followed-up with diagnosis of encephalitis.

Hematological disturbances may occur during influenza infection. Generally leucopenia, lymphopenia, neutropenia and thrombocytopenia are observed. [7] In our study, it was determined that 6 patients had neutropenia, 1 had lymphopenia and 4 had thrombocytopenia.

Influenza virus infections have more severe course under one year of age, especially under 3 months of age and can lead to high hospitalization rates.[3] In our study, 91% (n: 11) of 12 infants under 3 months of age were treated as inpatients. Mean duration of hospital stay of infants under 3 months of age was 4.2 (2-8) days.

Influenza infections cause severe respiratory distress, requiring invasive and non-invasive respiratory support. In our study, 4 patients required nasal continuous positive airway pressure (CPAP) and 1 patient need mechanical ventilation support.

Oseltamivir is effectively used in treatment of influenza, by inhibiting neuraminidase in influenza virus. It has been proven to reduce duration and severity of the disease when it is initiated within 48 hours after onset of symptoms.[8] In our study, all patients which were followed-up either as inpatients or outpatients were given oseltamivir. Furthermore, those with high levels of acute phase reactants and evidence of secondary bacterial infection on chest x-ray were given antibiotherapy. Mean time to reduction of fever at admission was 2.24 days and mean time to reduction of fever after treatment was 0.84 days.

Especially in infants at high risk of hospitalization and disease severity, rapid and accurate diagnosis is important in regard to enabling early specific antiviral treatment and implementation of appropriate isolation measures.

References:

1 *Fiore, A. E., Shay, D. K., Broder, K., Iskander, J. K., Uyeki, T. M., Mootrey, G., Bresee, J. S., Cox, N. S.; Centers for Disease Control and Prevention (CDC); Advisory Committee on Immunization Practices (ACIP). Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP), 2008. M. M. W. R. Recomm. Rep., 2008, 57 (7), 1-60.*

2 *Ruf, B. R.; Szucs T. Reducing the burden of influenza-associated complications with antiviral therapy. Infection, 2009, 37 (3), 186-196.*

3 *Poehling KA, Edwards K, Weinberg GA, et al. New Vaccine Surveillance Network. The underrecognized burden of influenza in young children.* N Engl J Med. *2006;355:31–40.*

4 *United States Centers for Disease Control and Prevention. 2009H1N1 early outbreakand disease Characteristics http:// cdc.gov/h1n1flu/surveillanceqa.htm*

5 *Chaves SS, Perez A, Farley MM et al. The burden of influenza hospitalizations in infants from 2003 to 2012, United States. Pediatr Infect Dis J 2014;33:912.*

6 *Hall CB. Clinical features and diagnosis of influenza in children. In: Basow DS (ed). UpToDate. version 18.3. Waltham, MA: UpToDate, Inc; 2011.*

7 *Unal S, Gökçe M, Aytaç-Elmas S, et al. Hematological consequences of pandemic influenza H1N1 infection: a single center experience. Turk J Pediatr 2010; 52: 570-5.*

8 *Whitley, R. J.; Hayden, F. G.; Reisinger, K. S.; Young, N.; Dutkowski, R.; Ipe, D.; Mills, R. G.; Ward, P. Oral oseltamivir treatment of influenza in children. Pediatr. Infect. Dis. J., 2001, 20(2), 127-133.*

FT35

A case report of cystic fibrosis with von Willebrand disease

Kistik fibrozis ile von Willebrand hastalığı birlikteliği olan bir olgu sunumu

Büşra ÖZYALVAÇ[1], Sevgi PEKCAN[2], HüseyinTOKGÖZ[3]

1 Necmettin Erbakan University, Meram Faculty of Medicine, Department of Pediatrics, Konya

2 Necmettin Erbakan University, Meram Faculty of Medicine, Department of Pediatrics, Division of Pediatric Pulmonology, Konya

3 Necmettin Erbakan University, Meram Faculty of Medicine, Department of Pediatrics, Division of Pediatric Hematology, Konya

Abstract: Cystic fibrosis, is a common genetic disease in the white race with autosomal recessive inheritance. It occurs as a result of a defect in the chlorine channel called CFTR (Cystic Fibrous Transmembrane Regulatory Protein) in the epithelial cell membrane. Clinical findings are heterogeneous in cystic fibrosis due to involvement of more than one system. Lung findings are the most common findings at all age groups. Hemoptysis is not an uncommon complication of lung involvement and usually occurs as a result of the destruction of the airway wall due to infections due to bronchiectasis. Here, we report a case of von willebrand's disease which was followed up for cystic fibrosis and investigated for recurrent minor hemoptysis.

Keyword: *cystic fibrosis, von willebrand disease, hemoptysis*

Özet: Kistik fibrozis, otozomal resesif kalıtılan beyaz ırkta sık görülen genetik bir hastalıktır. Epitel hücresi membranındaki KFTR (Kistik Fibröz Transmembran Regülatör Protein) adlı klor kanalının defekti sonucunda ortaya çıkar. Birden fazla sistemi tutması nedeniyle kistik fibroziste klinik bulgular heterojendir. Akciğer bulguları tüm yaş gruplarında en sık görülen bulgulardır. Hemoptizi de akciğer komplikasyonu olarak nadir görülmeyen bir komplikasyondur ve genellikle bronşektazi gelişen havayolu duvarının enfeksiyonlar nedeniyle harabiyete uğraması sonucu ortaya çıkar. Burada kistik fibrozis nedeniyle takip edilen hastanın tekrarlayan minör hemoptizleri nedeniyle araştırılırken von willebrand hastalığının birlikte saptandığı bir vaka sunulmuştur.

Anahtar kelimeler: *kistik fibrozis, von willebrand hastalığı, hemoptizi*

Introduction:

Cystic fibrosis is a disease with a autosomal recessive mode of inheritance with an incidence of 1 in 2.000-3.500 live births and a carrier rate of 1/25. (1) CF gene is located in the q22-31 region of chromosome 7. (2) The most common mutation is F508 del. (3) A protein called CFTR (Cystic fibrosis transmembrane regulator) is synthesized from the CF gene. Structural and functional impairment of CFTR protein causes disruption of ion transport in the epithelial cell plasma membrane of organs such as lung, pancreas, liver, intestine, sweat glands and epididymis. (4) Although lung is the most commonly involved organ in CF, clinical findings vary according to the age of the patient, the involved systems and the severity of the disease. (5)

Hemoptysis is a common complication of lung involvement in patients with cystic fibrosis. Bronchiectasis is usually encountered as a clinical evidence of pulmonary endobronchial hemorrhage; the cause of this hemorrhage is the destruction of the airway wall due to infections. Vitamin K deficiency and thrombocytopenia due to hypersplenism also play a role in the development of hemoptysis. (6)

Von Willebrand disease (vWd) is an autosomal inherited bleeding diathesis due to deficiency or dysfunction of von Willebrand factor (vWf). (7) It is one of the most common hereditary bleeding diathesis. Incidence rates obtained by community screening are around 1%. (8) It is typically characterized by mild to moderate skin-mucosal bleeding. (9) There are 3 types and these include Type 1, relative quantitative lack of vWF; type 2, qualitative vWF disorder; and type 3 is a complete quantitative deficiency of vWF. (10) Diagnosis is based on clinical findings and laboratory tests. Initial tests for vWd include vWF antigen (vWF: Ag), ristocetin cofactor activity (vWF: RCo) and Factor VIII activity. (11)

Case:

A 16 year-old girl with cystic fibrosis presented with recurrent minor hemoptysis. The patient who had cough and wheezing since infancy, had productive cough and was found to have less weight than her peers; she was diagnosed with cystic fibrosis based on the clinical findings of cystic fibrosis, and 110 mEq/L sweat test and delF508 homozygous genetics at 11 years of age. Polypectomy was performed three times because the patient had recurrent nasal polyps during follow-up and treatment.There was no bleeding problem after polypectomy. The patient had growth of Pseudomonas aeruginosa for the first time at 14 years of age. He received cefepime + amikacin intravenous treatment for 14 days and then chronic pseudomonas colonization developed. She is currently receiving regular inhaled tobramycin therapy and has had intermittent respiratory exacerbations while taking inhaled tobramycin. He had intermittent minor hemoptysis three times. Her platelet count was 250.000 mm3/uL in hematological examination and platelets were abundant and clustered in the peripheral smear. Among coagulation parameters; APTT was determined to be 34.6 sec (22.5-32) and factor levels were requested, because PT and PTT should be prolonged if the hemorrhage was due to vitamin K deficiency as a result of cystic fibrosis. Laboratory results were found to be as follows: Factor 8 level: 39.2% (70-150), von Willebrand factor antigen level 44% (50-160), and ristocetin cofactor level 42% (50-160). Other factor levels were also studied and were within normal range. The patient was determined to have mild type 1 vWd. Bronchoscopy performed to determine the etiology of hemoptysis showed mild bronchiectasis and no active bleeding foci were observed. On computed tomography, areas of mild bronchiectasis were observed in bilateral lower lobes. No major bleeding problems were observed in the patient who was followed up and treated for cystic fibrosis. Family screening for vWd was planned. The patient was informed about the procedures to be done before interventional procedures and in cases of bleeding. As in our case, it was explained that specific treatment is not required in patients with mild disease and those requiring a minor surgery but desmopressin treatment can be administered when needed, and VWF containing factor VIII concentrates have to be used in vWd's that do not respond to desmopressin or require major surgical intervention. It was also told that tranexamic acid can be used locally and systemically for mucosal bleeding.

Discussion:

Cystic fibrosis is an autosomal recessive inherited disease and the incidence of the disease varies between populations. (1) In countries where consanguineous marriages are common, the incidence of autosomal recessive inheritance increases. Our case is known to be a child of first cousins.

Clinical findings are heterogeneous in cystic fibrosis and vary according to the age of the patient, the systems involved and the severity of the disease. (5) DeltaF508 mutation, which is common for this disease and detected in our case, belongs to the class II mutation group, where clinical findings, especially lung findings, are never synthesized by CFTR protein. (13) Bleeding problems can also be seen in cystic fibrosis and may be in the form of anemia and bleeding diathesis due to deficiencies of fat-soluble vitamins (A, D, E, K). Focal biliary cirrhosis caused by obstruction of intrahepatic ducts may also cause portal hypertension and esophageal bleeding. (12) Hemoptysis is a common complication of lung involvement in patients with cystic fibrosis. Bronchiectasis is usually encountered as a clinical evidence of pulmonary endobronchial hemorrhage (6). In our case, she was diagnosed with von Willebrand disease while investigating for intermittent hemoptysis. Von Willebrand disease is an inherited in an autosomal manner and is a common bleeding diathesis. (7) Clinical presentation is highly variable and depends on the severity and type of vWd. Due to the extremely low FVIII level, type 3 vWd is at risk for deep tissue bleeding and hemarthrosis seen in classic hemophilia and life-threatening bleeding. Clinically, disease severity is typically mild in most type 1 vWd individuals. (14) Our case did not have evidence of serious bleeding.

This is wished to be reported because of the fact that although both diseases are inherited in an autosomal manner, the association of these two conditions is a rare situation. Due to the high frequency of consanguineous marriages in our country, the reasons for incidental other bleeding diathesis should be kept in mind and it may not be related to cystic fibrosis.

Conclusion:

Although there are bleeding problems in cystic fibrosis patients, thrombocytopenia or coagulopathy secondary to vitamin deficiency is due to liver dysfunction or local inflammatory damage. It should be remembered that hematological disorders should be investigated in patients with prolonged complaints as in our case.

References:

1 *Romeo G, Devoto M, Galietta LJV. Why is the cystic fibrosis gene so frequent? Hum Genet 1989; 84: 1-5.*

2 *Kerem B, Rommens JM, Buchanan JA, et al. Identification of the cystic fibrosis gene: genetic analysis. Science 1989; 245: 1073-80.*

3 *Bobadilla JL, Macek M, Fine JP, Farrell PM. Cystic fibrosis: a worldwide analysis of CFTR mutations--correlation with incidence data and application to screening. Hum Mutat 2002; 19: 575-606.*

4 *Gadsby DC, Vergani P, Csanády L. The ABC protein turned chloride channel whose failure causes cystic fibrosis. Nature 2006; 440: 477-83.*

5 *Yalçın E. Kistik fibroziste klinik bulgular ve tanı. In: Dağlı E, Karakoç F; eds. Çocuk Göğüs Hastalıkları. İstanbul: Nobel Matbaacılık, 2007; 225-30.*

6 *Boat TF, Acton JD. Cystic Fibrosis. In: Kliegman RM, BehrmanRE, Jenson HB, Stanton BF; eds. Nelson Textbook of Pediatrics. 18 th ed. Philadelphia: Saunders, 2007; 1813.*

7 *Rick ME: von Willebrand disease . Hematology 2003, American Society of Hematology Education Program Book. p:567-572.*

8 *RodeghieroF, Castaman G, Dini E. Epidemıological investigation of the prevalence of von Willebrand's disease. Blood 1987; 69:454.*

9 *Italian Working Group.Spectrum of von Willebrand disease Br.J.Haematol 1977;35:101.*

10 *De Meyer, S.F., H. Deckmyn, and K. Vanhoorelbeke, von Willebrand factor to the rescue. Blood, 2009. 113(21): p. 5049-57.*

11 *Nichols, W.L., et al., Clinical and laboratory diagnosis of von Willebrand disease: a synopsis of the 2008 NHLBI/NIH guidelines. Am J Hematol, 2009. 84(6): p. 366-70.*

12 *McCormick J, Green MW, Mehta G, Culross F, Mehta A. Demographics of the UK cystic fibrosis population: mplications for neonatal screening. Eur J Hum Genet 2002; 10: 583-90.*

13 *Rowntree RK, Harris A. The phenotypic consequences of CFTR mutations. Ann Hum Genet 2003; 67: 471-85.*

14 *De Meyer, S.F., H. Deckmyn, and K. Vanhoorelbeke, von Willebrand factor to the rescue. Blood, 2009. 113(21): p. 5049-57.*

FT36

Phenytoin-associated DRESS syndrome: A Case Report

Fenitoine Bağlı DRESS Sendromu: Olgu Sunumu

Mustafa GENÇELİ[1], Kezban ÖZTÜRK[2], Şule AYAS[1],

Ahmet Sami GÜVEN[2], Hüseyin ÇAKSEN[2]

[1]Necmettin Erbakan University Meram Medical Faculty, Department of Pediatrics, Konya,Turkey

[2]Necmettin Erbakan University Meram Medical Faculty, Department of Pediatrics, Division of Pediatric Neurology, Konya, Turkey

Abstract

Introduction: DRESS (Drug Reaction with Eosinophilia and Systemic Symptoms) syndrome is a rare, life-threatening, delayed type drug reaction characterized by fever, skin rash, hematologic changes (eosinophilia, atypical lymphocytes), lymphadenopathy and involvement of the internal organs (liver, kidney, heart). It was first described associated with phenytoin but aromatic anticonvulsants and sulfonamides are the most common ones. The diagnosis of DRESS syndrome is made according to the clinician's decision with the scoring systems (Bocquet, J-SCAR, RegiSCAR) consisting of certain clinical and laboratory findings. The main criterias for these scores are fever, skin rash, eosinophilia and internal organ involvement.

Case: A 7-year-old male patient with ongoing investigations in our pediatric neurology outpatient clinic due to Lennox-Gastaut syndrome, mental-motor retardation and syndromic appearance was admitted with 39°C fever and rash on his body for 2 days. Our patient diagnosed with epilepsy had received antiepileptic treatment since he was one year old and it was learned that phenytoin was added to his current treatment because he had generalized tonic-clonic seizures 11 days before the admission. In the history of our case, there was a second-degree consanguinity between the mother and father. In physical examination; body weight was 16.5kg (<3p), height was 100 cm (<3p), head circumference was 48 cm (<3p). He had a syndromic facial appearance (retro-micrognathia, flat nasal bridge), leukocoria, small hands and foots, and a simian line in the right hand. There were diffuse millimetric maculopapular rashes on the body and a left cervical lymph node (1 x 1 cm). In laboratory examinations; hemoglobin was 13.1 gr/dL, leukocyte was 9710/mm³, platelet was 266000/mm³, total eosinophil count was 880/mm³, AST was 82 IU/L, and ALT was 45 IU/L. Phenytoin of our case, who was considered to have phenytoin-induced DRESS syndrome according to the RegiSCAR diagnostic criteria, was discontinued and the rash, eosinophilia and transaminase values were decreased within 3 days after starting antihistaminic and steroid treatment.

Conclusion: DRESS syndrome is a rare but life-threatening progressive condition and early diagnosis and timely treatment are life-saving. We present our case to emphasize the importance of questioning the history of drug use in patients presenting with fever and rash, and the necessity of keeping in mind the diagnosis, triggers and treatment of DRESS syndrome.

***Key words**: Phenytoin, DRESS syndrome, child*

Özet

Giriş: DRESS (Drug Reaction with Eosinophilia and Systemic Symptoms) sendromu; ateş, cilt döküntüsü, hematolojik değişiklikler (eozinofili, atipik lenfositler), lenfadenopati ve iç organ (karaciğer, böbrek, kalp) tutulumu ile karakterize, nadir görülen, hayatı tehdit edebilen, gecikmiş tip bir ilaç reaksiyonudur. İlk olarak fenitoin ilişkili olarak tanımlanmış olmakla beraber, en çok neden olan ilaçlar aromatik antikonvülzanlar ve sülfonamidlerdir. DRESS sendromu tanısı klinisyen kararına göre belirli klinik ve laboratuvar bulgularından oluşan puanlama sistemleriyle (Bocquet, J-SCAR, RegiSCAR) konulmaktadır. Bu skorlamalarda ana kriterler; ateş, cilt döküntüsü, eozinofili ve iç organ tutulumudur.

Olgu: Lennox-Gastaut sendromu, mental-motor retardasyon ve sendromik görünüm nedeniyle çocuk nöroloji polikliniğimizde tetkikleri devam eden, 7 yaş erkek olgu; 2 gündür 39°C ateş ve tüm vücutta döküntü şikayetleri ile başvurdu. Bir yaşından beri epilepsi tanısı ile birçok antiepileptik tedavi alan olgumuzun başvurudan 11 gün önce jeneralize tonik-klonik nöbetleri olduğu için mevcut tedavisine fenitoin eklendiği öğrenildi. Olgunun soygeçmişinde anne ve baba arasında 2. dereceden akrabalık mevcuttu. Fizik muayenesinde; vücut ağırlığı; 16,5 kg (<3p), boy; 100 cm (<3p), baş çevresi; 48 cm (<3p), sendromik yüz görünümü (retro-mikrognati, burun kökü basıklığı), lökokori, sağ elde simian çizgisi, küçük el ve ayak mevcuttu. Vücutta yaygın milimetrik makülopapüler döküntüler ve sol servikalde 1x1 cm lenfadenopatisi vardı. Laboratuvar incelemelerinde; hemoglobin: 13.1 gr/dL, lökosit: 9710/mm³, trombosit: 266000/mm³, total eozinofil sayısı: 880/mm³, AST: 82 IU/L, ALT: 45 IU/L saptandı. RegiSCAR tanı kriterlerine göre feniton ilişkili DRESS sendromu düşünülen olgunun fenitoini kesildi, antihistaminik ve steroid tedavisi başlandıktan 3 gün sonra döküntüleri, eozinofili ve transaminaz değerleri geriledi.

Sonuç: DRESS sendromu nadir rastlanan ancak hayatı tehdit edebilen progresif bir durum olup erken teşhis ve zamanında tedavi hayat kurtarıcıdır. Ateş ve döküntüyle başvuran olgularda ilaç kullanım hikayesinin sorgulanmasının önemini ve DRESS sendromunun tanısı, tetikleyicileri ve tedavisinin akılda tutulmasının gerekliliğini vurgulamak amacıyla olgumuzu sunuyoruz.

***Anahtar kelimeler**: Fenitoin, DRESS sendromu, çocuk*

Introduction

DRESS (Drug Reaction with Eosinophilia and Systemic Symptoms) syndrome is a rare, life-threatening, delayed-type drug reaction characterized by fever, skin rash, hematological disturbances (eosinophilia, atypical lymphocytes), lymphadenopathy and internal organ involvement (liver, kidney, heart). Anticonvulsants and sulphonamides are the most common causative drugs.[1] In this report, a case of DRESS syndrome that developed due to phenytoin therapy for epilepsy is presented.

Case Report

A 7 year-old male case who has been followed-up in our pediatric neurology clinic due to Lennox-Gastaut syndrome, mental-motor retardation and syndromic appearance presented with a temperature of 39°C and skin rash on whole body which began before 2 days. It was learned that our patient, who has received various antiepileptic treatment for the diagnosis of epilepsy since the age of 1, had a generalized tonic-clonic seizures 11 days before his admission and that phenytoin was added to his current sodium valproate treatment. In family history of the case; his parents were second-degree relatives. On the physical examination; his weight was 16.5 kg (<3p), height was 100 cm (<3p), head circumference was 48 cm (<3p) and he had a syndromic facial appearance (retro-micrognathia, flat nasal bridge), leucocoria and simian line in the right hand, as well as small hands and feet. He had a widespread

millimetric maculopapular rash on his body and a lymphadenopathy of 1x1 cm in size in the left cervical chain (Figure 1A). Laboratory results were as follows: hemoglobin: 13.1 gr/dL, leukocyte: 9710/mm³, platelet: 266.000/mm³, total eosinophil count: 880/mm³, AST: 82 IU/L and ALT: 45 IU/L, and in peripheral blood smear; 56% PMNs, 28% lymphocytes, 7% monocytes and 9% eosinophils were observed. Of the case which was considered to have phenytoin-associated DRESS syndrome in accordance with RegiSCAR diagnostic criteria; his phenytoin treatment was discontinued; and the laboratory results following antihistamine and steroid treatments were as follows: hemoglobin: 14.2 gr/dL, leukocyte: 5990/mm³, platelet: 221.000/mm³, total eosinophil count: 90/mm³, AST: 48 IU/L and ALT: 38 IU/L, as well as the skin rashes regressed (Figure 1B).

Discussion

DRESS syndrome is a rare, acute-onset, life-threatening drug reaction characterized by fever, skin rash, internal organ involvement and hematological abnormalities. The mortality rate of DRESS syndrome is approximately 10%.[2]

DRESS syndrome was initially described as a hypersensitivity syndrome to phenytoin. However, later on it was determined that other various medications also cause it. Patrice Cacoub et al. compiled case reports reported in PubMed-MEDLINE between 1997 and 2009; they reported that there was a total of 172 cases of DRESS syndrome associated with 44 different drugs and that these cases were most commonly associated with antiepileptic drugs and allopurinol.[3] In the study by Yang et al. which included cutaneous side effects of antiepileptic drugs, they reported that 43.6% of the cases had carbamazepine and phenytoin-associated DRESS syndrome.[4] In the another study, however, Botelho et al. demonstrated that the most common drug causing DRESS syndrome was phenytoin.[5] Our case has an importance as he has been considered to have phenytoin-associated DRESS syndrome.

Diagnosis of DRESS syndrome is made via scoring systems comprised of specific clinical and laboratory findings (Bocquet, J-SCAR, RegiSCAR) according to the decision made by the clinician.[1,6] In RegiSCAR scoring, there is a scoring system according to parameters including rash, fever, lymphadenopathy, internal organ involvement, presence of atypical lymphocytes and eosinophils, absence of other causes (negative viral serology, negative blood cultures, negative anti-nuclear antibody) and clinical manifestations persisting for more than 15 days.[6] Our case had fever (0 point), lymphadenopathy (1 points), eosinophilia (1 point), skin involvement (1 point) and liver involvement (1 point). He was diagnosed with possible DRESS syndrome after receiving 4 points according to RegiSCAR scoring.

In DRESS syndrome, the most common hematological disturbance is eosinophilia, where as the most common internal organ involvement is liver involvement.[7] In our case, total eosinophil count was 880/mm³, AST 82 IU/L and ALT 45 IU/L, which supported our diagnosis.

Duration between administration of the drug and development of DRESS syndrome may vary between 2 to 6 weeks. Recovery period after discontinuation of the drug may last 6 to 9 weeks.[8] In our case, he had complaints of fever and rash 11 days after he began to use phenytoin and complete regression of the rashes took approximately 4 weeks.

The most important step in treatment of DRESS syndrome is early diagnosis and abrupt discontinuation of the drug. Topical corticosteroids may be beneficial; however, systemic steroid or immunosuppressant treatment is usually required.[2,8] The drugs used by our case were checked; phenytoin, which was determined to be one of the most common causes after the literature review, was discontinued, steroid treatment was initiated and he was then followed-up. During follow-ups, rashes were relieved by the 3rd day and completely regressed within approximately 4 weeks. Response to discontinuation of the drug and steroid treatment

also supports diagnosis of DRESS syndrome. In conclusion; DRESS syndrome is a progressive condition which is rare but can be life-threatening and early diagnosis and prompt treatment is lifesaving. We would like to express the importance of investigation of history of drug use and that diagnosis, triggers and treatment of DRESS syndrome should be kept in mind in cases presenting with fever and rash.

References

1 *Bocquet H, Boagot M, Roujeau JC. Drug-induced pseudolymphoma and drug hypersensitivity (Drug rash with eosinophilia and systemic symptoms: DRESS). SeminCutan Med Surg 1996;15(4):250–7.*

2 *Husain Z, Reddy BY, Schwartz RA. DRESS syndrome: Part I. Clinical perspectives. J Am AcadDermatol 2013;68(5):693.*

3 *Cacoub P, Musette P, Descamps V, Meyer O, Speirs C, Finzi L, et al. The DRESS syndrome: A literature review. Am J Med 2011;124:588–97.*

4 *Yang CY, Dao RL, Lee TJ et al: Severe cutaneous adverse reactions to antiepileptic drugs in Asians. Neurology 2011;77:2025-33.*

5 *Botelho LF, Higashi VS, Padilha MH, Enokihara MM, Porro AM. DRESS: clinic pathological features of 10 cases fromanUniversity Hospital in São Paulo. An Bras Dermatol 2012;87:703-7.*

6 *Kardaun SH, Sidoroff A, Valeyrie-Allanore L, et al. Variability in the clinical pattern of cutaneous side-effects of drugs with systemic symptoms: Does a DRESS syndrome really exist? Br J Dermatol 2007;156:609–11.*

7 *Cardoso CS, Vieira AM, Oliveira AP. DRESS syndrome: a case report and literature review. BMJ Case Rep. 2011 Jun 3;2011.*

8 *Criado PR, Criado RFJ, Avancini JM, Santi CG. Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS)/ Drug-Induced Hypersensitivity Syndrome (DIHS): a review of current concepts. An Bras Dermatol 2012;87:435-49.*

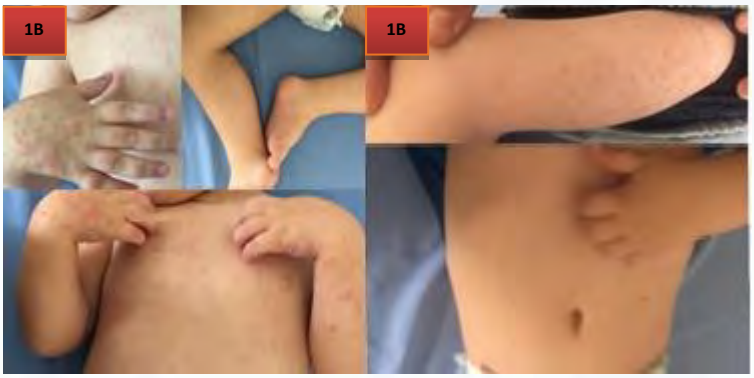


Figure 1A: A widespread milimetricmaculopapular rash on whole body, Figure 1B: Regression of rashes after treatment

FT37

Antinuclear Antibody Testing İn A Turkish Pediatrics Clinic: İs İt Always Necessary?

[1]Erhan Aygun, [2]Mehmet Fatih Kelesoglu, [2]Rukiye Eker Omeroglu

1 Department of Pediatrics, Istanbul Medical School, Istanbul University, Millet Caddesi, Fatih, Istanbul, Turkey.

2 Department of Pediatric Rheumatology, Istanbul Medical School, Istanbul University, Millet Caddesi, Fatih, Istanbul, Turkey.

ABSTRACT

Background:

The term anti-nuclear antibody (ANA) is used to define a large group of autoantibodies which specifically bind to nuclear elements. Although healthy individuals may also have ANA positivity, the measurement of ANA is generally used in the diagnosis of autoimmune disorders. However, various studies have shown that ANA testing may be overused, especially in pediatrics clinics. Our aim was to investigate the reasons for antinuclear antibody (ANA) testing in the general pediatrics and pediatric rheumatology clinics of our hospital and to determine whether ANA testing was ordered appropriately by evaluating chief complaints and the ultimate diagnoses of these cases.

Methods:

The medical records of pediatric patients in whom ANA testing was performed between January 2014 and June 2016 were retrospectively evaluated. Subjects were grouped according to the indication for ANA testing and ANA titers.

Results:

ANA tests were ordered in a total of 409 patients during the study period, with 113 positive ANA results. The ANA test was ordered mostly due to joint pain (50% of the study population). There was an increased likelihood of autoimmune rheumatic diseases (ARDs) with higher ANA titer. The positive predictive value of an ANA test was 16% for any connective tissue disease and 13% for lupus in the pediatric setting.

Conclusion:

in the current study, more than one-fourth of the subjects were found to have ANA positivity, while only 15% were ultimately diagnosed with ARDs. Our findings underline the importance of an increased awareness of correct indications for ANA testing.

Keywords: *Antinuclear Antibody; Autoimmune Rheumatologic Diseases; Systemic Lupus Erythematosus*

Introduction

The presentation of rheumatic diseases in children may be similar to the manifestations of various infections, malignancies and endocrinological disorders. Although laboratory tests have become pivotal in the differential diagnosis of rheumatic diseases, a test which can reliably confirm or exclude rheumatic diseases in children does not exist. In pediatric rheumatology, 80-85% of the data leading to a diagnosis is obtained via a comprehensive medical history. Therefore, obtaining a detailed medical history and meticulous evaluation of the data is of utmost importance in the rheumatology clinic. Medical history should be followed by an extensive physical examination and the clinician should have comprehensive knowledge about rheumatic diseases (1-4). In addition to clinical evaluation, autoantibody

measurements have become a powerful guide for diagnosis and may also provide important data in terms of prognosis, disease activity and treatment of rheumatic diseases. Autoantibody testing has been utilized for the diagnosis and treatment evaluation of autoimmune diseases for more than 50 years (5). More specifically, antinuclear antibody (ANA) testing has become instrumental in the diagnosis of certain autoimmune rheumatic diseases (ARDs). Quantification of autoantibodies may suggest the presence of an autoimmune disease or inform the clinician about the severity of the disease and/or the immune response associated with the disease (6).

Antinuclear antibodies are a group of autoantibodies which can be detected in systemic autoimmune diseases such as systemic lupus erythematosus (SLE), Sjögren syndrome, systemic sclerosis, inflammatory myositis, mixed connective tissue diseases (MCTD) and rheumatoid arthritis (RA) (7). However, in the pediatric clinical practice, ANA tests are commonly requested in patients with musculoskeletal complaints, most of which are not related to ARDs. When an ANA test is ordered without strong clinical suspicion for ARDs, there are two outcomes: the result is either negative-and rules out ARDs-or the test is positive, which leads to the requirement for detailed clinical examination and medical history of the patient (which should have been done prior to ANA testing). Ultimately, if the patient is not diagnosed with an ARD, then the test has only caused anxiety for the caretaker of the patient and has increased the number of referrals to pediatric rheumatology clinics. It is important to be aware of the fact that a negative ANA test result is more valuable than a positive one -as it rules out ARDs; however, ANA tests should only be ordered with sufficient clinical suspicion for ARDs. An incomplete understanding of when to request an ANA test and how to interpret the results may reduce patient and caretaker satisfaction and also cause a substantial burden to the healthcare system of a developing country. Thus, evaluating the indications for ANA testing and their results may prove beneficial for the pediatric rheumatology practice and the training of pediatrics residents. In this study, the ANA results of patients who were consulted to pediatric and pediatric rheumatology outpatient clinics with suspicion for autoimmune diseases were reviewed retrospectively. The relationships between chief complaints, final diagnoses and ANA test results and titers were reviewed.

Methods

In this retrospective single center study, which took place in the general pediatrics and pediatric rheumatology clinic of a university hospital, we reviewed the records of children in whom ANA testing was performed between January 2014 and June 2016. We excluded subjects in which clinical indications for ANA testing were not available. Subjects were grouped according to the indication for ANA testing and ANA titers. The age, gender, chief complaints, ANA test results and final diagnoses of patients were recorded by accessing their data from the hospital information system. The ANA tests were performed by the immunofluorescence technique in microbiology and immunology laboratories. Hep-2 cell lines were used for ANA testing.

Statistical analysis: Data analysis was performed with the IBM SPSS v21 software for Windows (IBM Corp. Armonk, NY, USA). We presented categorical data with numbers and percentages and continuous data with means and standard deviations. For the comparison of groups, we used the chi square test for categorical variables and the Student's t test for continuous variables. We considered p-values lower than 0.05 to be statistically significant.

Results

Antinuclear antibody testing was performed in a total of 409 patients during the indicated study period. The age range of the study population was 5-18 years. We listed reasons for

ANA testing requests and study outcomes in Table 1 and the association of ANA titers with ultimate diagnoses in Table 2. Overall, 113 (%27.6) patients had positive ANA test results. ANA test was positive in 15 (%13.2) SLE patients and 18 (%15.9) ARDs. The most common reason for requesting ANA testing was joint pain (50% of the study population). Most of the patients with ANA positivity and ARDs were female. Among ANA positive subjects, girls tended to have a higher rate of ARDs compared with boys, but the difference was not statistically significant (17.7% vs. 8.6%, $p > 0.05$). None of the patients with ANA titers less than 1:160 were diagnosed with ARDs, while subjects with titers > 1:160 had a similar rate of ARDs ($p = 0.2$) (Table 3). The positive predictive value of an ANA test was 16% for any connective tissue disease and 13% for SLE. Lupus patients who referred to the clinic with skin and joint symptoms were generally diagnosed as a result of further investigation. Among a total of 64 patients with mucocutaneous symptoms (signs or symptoms involving the hair, skin or oral mucosa), 28 were detected to be ANA positive and 8 of these ANA positive patients were diagnosed with Lupus. Although joint symptoms overlapped with mucocutaneous symptoms in some of the patients, they were evaluated according to their predominant symptom. Patients with joint symptoms constituted 50% of all requests for ANA testing. Although 47 of these patients were diagnosed with JIA and 6 with FMF, the remaining patients with joint symptoms did not demonstrate any specific signs for ARDs. The cause of joint symptoms were considered to be growth pain in many of the remaining subjects. In addition, it was determined that 11 of the patients with widespread pain had vitamin D deficiency.

Table 1
Chief complaints of patients in whom antinuclear antibody tests were requested

Chief Complaint	Number of Patientsn=409 (%)
Musculoskeletal disorders (especially joint pain)	207 (%50.6)
Mucocutaneous symptoms (skin, oral and hair problems)	64 (%15.7)
Hematologic disorders	19 (%4.7)
Constitutional symptoms	16 (%3.9)
Abdominal pain	10 (%2.4)
Raynaud's phenomenon	14 (%3.4)
Abnormality in urine urinalysis	8 (%1.9)
Recurrent infections	7 (%1.7)
Other	64 (15.7)

Table 2
Characteristics of patients in regard to antinuclear antibody (ANA) results

	ANA positive (n=113)	ANA negative (n=296)	P value
Age	10.5	10.1	0.8
Sex			
Female	90	157	< 0.001
Male	23	139	
ARDs	18	0	< 0.001
Female	16	0	< 0.001
Male	2	0	< 0.001
Lupus	15	0	< 0.001
Polymyositis	1	0	
Sjogren	2	0	

Table 3
Antinuclear antibody (ANA) titers

TITER	n (%)	
1/80	13 (%11.5)	
1/160	34 (%30.0)	5 LUPUS, 5 JIA, 2 ITP, 1 PM
1/320	30 (%26.5)	5 LUPUS, 1 SJOGREN, 2 ITP
1/640	19 (%16.9)	2 LUPUS, 3 JIA, 1 ITP
1/1280	16 (%14.2)	2 LUPUS, 2 JIA, 1 SJOGREN
1/2560	1 (%0.9)	1 LUPUS
TOTAL POSITIVE	113(%100)	

Among 50 JIA patients who were tested for ANA, 12 had positive results. Although ANA positivity is associated with uveitis according to the medical literature (8, 9), the evaluation of physical examination records showed that none of our patients had any significant sign of uveitis. Among 13 chronic ITP follow-up patients who had been tested, 5 patients had positive ANA results. Only one of these patients was found to have an ARD. This patient was diagnosed with Sjögren's syndrome in light of antibody test results which were requested with a preliminary diagnosis of autoimmune hepatitis due to liver enzyme elevation. Afterwards, further questioning revealed that the patient had had parotitis attacks which were not recognized by their family. A minor salivary gland biopsy was also consistent with Sjögren's syndrome. Fourteen patients were referred due to Raynaud's phenomenon and 3 were

determined to be ANA positive of which one was diagnosed with Lupus. After the capillaroscopic evaluation of the patients who had ANA positive results, various non-ARD abnormalities were determined in 3 patients. Among 8 patients with various urinary system abnormalities such as hematuria and proteinuria, 2 had positive ANA results. However, none of these patients were diagnosed with ARDs with further analysis. One of these patients had been previously diagnosed with idiopathic nephrotic syndrome, but kidney biopsy was ordered due to resistance to corticosteroid treatment and ANA positivity. The biopsy confirmed lupus (full house pattern). Seven patients with recurrent infections were tested for ANA, 2 of them had positive results. None of these patients had an ultimate diagnosis of ARD. Among the 16 patients with constitutional symptoms, only one had ANA positivity. Two of the 16 were diagnosed with FMF and 1 was diagnosed with Kawasaki Disease. Among 10 patients with recurrent abdominal pain, 3 were tested positive for ANA and none were determined to have ARDs.

Discussion

In pediatrics, unnecessary utilization of ANA testing is very common although the test's specificity and sensitivity are generally low for rheumatic and musculoskeletal system diseases. The ANA test is commonly ordered in patients with musculoskeletal symptoms which are, in most cases, not associated with ARDs. Likewise, the most common cause for requesting ANA in the current study was joint pain (50%). The likelihood of ANA positivity and ARDs tended to be higher in girls compared to boys. The rate of an ARD diagnosis after a positive ANA test was 15% in the current study, and most of these patients were diagnosed with SLE (overall rate: 13%). The overuse of ANA testing is a major problem worldwide. This is partly due to the nature of the test; with titers such as 1:160, the number of false positives are reduced to around 5%, but the possibility for false-negatives increase; the opposite is also true with titers such as 1:40, at which almost 30% of the population are assumed to have a positive result (1-3, 10-13). Some authors have suggested that positive results at 1:40 titer should be reported in order to identify as many ARD patients as possible (12). However, this approach increases the number of false-positive results; thus, the clinician should order ANA tests only when there exists a strong suspicion for ARDs and therefore, may confirm or rule-out the diagnosis. A study by Malleson *et al*. showed that, in their center, 41% of ANA tests in children without rheumatic diseases had “positive” results at a titer of 1:20 (14). This shows the importance of detailed physical examination and thorough medical history prior to ANA testing.

Antinuclear antibody testing should be used as a diagnostic test only when diagnoses of SLE, MCTD and overlap syndromes are considered. In children with signs and symptoms consistent with these ARDs, the ANA test result would almost always be positive (14). The findings of our study also suggest that, when the signs and symptoms of patients causes the clinician to consider ARDs as probable diagnosis, positive ANA test results can be used to confirm diagnosis. Various studies show ANA positivity to be relatively frequent in the healthy population (14, 15). Among children, 2-15% have positive ANA, especially with low titers (16, 17). Therefore, ANA testing should not be used as a screening tool for ARDs in the pediatric setting. However, if it is requested and there is no sign of a systemic disease and the medical history and examination of the child does not suggest ARDs, then positive ANA results in low titers should be considered irrelevant. While ANA positivity has a very high sensitivity for SLE, MCTD and overlap syndromes (as high as 98%), its positive predictive value is very low (10%) (4, 18, 19). Similar to the literature, we found the positive predictive value of ANA positivity as 13% for SLE in our study. Furthermore, none of the patients with titers lower than 1:160 had an ultimate diagnosis of ARDs. A positive ANA test may indicate the presence of an immune disfunction; however, this situation rarely causes a disease (20).

According to a study performed in a pediatric rheumatology clinic, only 55% of the subjects who had a positive ANA test had an inflammatory rheumatic disease (21). This rate was relatively lower in our study (28%). However, this may be explained by the inclusion of data from the general pediatrics clinic in addition to the pediatric rheumatology clinic. According to a study in which the clinical use of ANA was investigated, Among 110 subjects with a positive ANA test, 10 had SLE, 18 had JIA, 1 had MCTD, and another patient had Raynaud phenomenon (20). In our study, 113 patients had positive ANA test results and the distribution of diagnoses were as follows: 15 SLE, 10 JIA, 3 Raynaud phenomenon, 2 Sjogren's syndrome and 1 polymyositis.

Besides the increase in referrals and economical loss caused by the overuse of ANA testing, false-positive results often lead to further follow-up testing, patient/caretaker anxiety, and even misdiagnoses and improper treatments. Narain *et al* (22), in their study comprised of 137 patients with a positive ANA test without a systemic illness, found that 39 had been treated with prednisone at doses as high as 60 mg per day. Raynaud's phenomenon may develop secondarily to SLE, scleroderma and rheumatoid arthritis (RA) in 19% of the patients (23). This probability increases to 30% if the ANA test is positive and decreases to 7% if the test is negative (24). Among tthe 14 patients in our study who were referred to the clinic with Raynaud's phenomenon, 3 were determined to be positive for ANAs. In our study, 2 of the 8 patients with hematuria and proteinuria were tested positive for ANA. However, after further analysis, these patients were not diagnosed with any type of ARDs. One of the patients had been previously diagnosed with idiopathic nephrotic syndrome; however, after kidney biopsy- which was ordered due to resistance to corticosteroid treatment and ANA positivity- the patient turned out to have lupus (full house pattern). Another condition where a positive ANA test may be of some value in children is idiopathic thrombocytopenic purpura (ITP). In a study comprised of 87 children with ITP, 36% of those with a positive ANA (titer ≥ 1:40) were found to develop “autoimmune symptoms” (25). In the current study, 5 of the 13 chronic ITP follow-up patients tested for ANA were found to have ANA positivity.

Conclusion

More than one-fourth of the subjects included in the study were found to have ANA positivity, while only 15% were ultimately diagnosed with ARDs. We believe that ANA testing may be seen as a screening tool for ARDs by clinicans; while this approach may have merit when a patient has a medical history and examination findings consistent with SLE, MCTD and overlap syndrome, the sensitivity and specificity of the test is too low to be used as a screening test for other ARDs. In addition, false-positive results cause more harm than good for patients and clinicians. Thus, our findings underline the importance of an increased awareness of correct indications for ANA testing in pediatrics clinics.

References

1 *Agarwal M, Sawhney S. Laboratory tests in pediatric rheumatology. Indian J Pediatr. 2010;77(9):1011–6.*

2 *Mehta J. Laboratory testing in pediatric rheumatology. Pediatr Clin N Am. 2012;59(2):263–84.*

3 *Jarvis JN. Commentary-ordering lab tests for suspected rheumatic disease. Pediatr Rheumatol. 2008;6:19.*

4 *Breda L, Nozzi M, De Sanctis S, Chiarelli F. Laboratory tests in the diagnosis and follow-up of pediatric rheumatic diseases: an update. Semin Arthritis Rheum. 2010;40(1):53–72.*

5 *Fritzler MJ, Wiik A, Fritzler ML, Barr SG. The use and abuse of commercial kits used to detect autoantibodies. Arthritis Res Ther. 2003;5(4):192–204.*

6 *Leslie D, Lipsky P, Notkins AL. Autoantibodies as predictors of disease. J Clin Invest. 2001;108(10):1417–22.*

7 *Satoh M, Vázquez-Del Mercado M, Chan EK. Clinical interpretation of antinuclear antibody tests in systemic rheumatic diseases. Mod Rheumatol. 2009;19(3):219–28.*

8 *Heiligenhaus A, Niewerth M, Ganser G, Heinz C, Minden K, German Uveitis in Childhood Study Group Prevalence and complications of uveitis in juvenile idiopathic arthritis in a population-based nation-wide study in Germany: suggested modification of the current screening guidelines. Rheumatology. 2007 Jun;46(6):1015–9.*

9 *Karakeçe E, Atasoy AR, Çakmak G, Tekeoglu I, Harman H, Çiftci IH. Bir üniversite hastanesinde antinükleer antikor pozitiflikleri. Turk J Immunol. 2014;2(1):5–8.*

10 *Agmon-Levin N, Damoiseaux J, Kallenberg C, Sack U, Witte T, Herold M, et al. International recommendations for the assessment of autoantibodies to cellular antigens referred to as anti-nuclear antibodies. Ann Rheum Dis. 2014 Jan;73(1):17–23.*

11 *Alarcon-Segovia D, Fishbein E, Alcalá H, Olguín-Palacios E, Estrada-Parra S. The range and specificity of antinuclear antibodies in systematic lupus erythematosus. Clin Exp Immunol. 1970 Apr;6(4):557–571.*

12 *Mahler M, Ngo JT, Schulte-Pelkum J, Luettich T, Fritzler MJ. Limited reliability of the indirect immunofluorescence technique for the detection of anti-Rib-P antibodies. Arthritis research & therapy. 2008;10(6):R131.*

13 *Tan E, Feltkamp T, Smolen J, Butcher B, Dawkins R, Fritzler M, et al. Range of antinuclear antibodies in "healthy" individuals. Arthritis Rheum. 1997;40(9):1601–11.*

14 *Malleson PN, Mackinnon MJ, Sailer-Hoeck M, Spencer CH. Review for the generalist: the antinuclear antibody test in children-When to use it and what to do with a positive titer. Pediatr Rheumatol. 2010;8:27.*

15 *Li Q-Z, Karp DR, Quan J, Branch VK, Zhou J, Lian Y, et al. Risk factors for ANA positivity in healthy persons. Arthritis Res Ther. 2011;13(2):R38.*

16 *Arroyave CM, Giambrone MJ, Rich KC, Walaszek M. The frequency of antinuclear antibody (ANA) in children by use of mouse kidney (MK) and human epithelial cells (HEp-2) as substrates. J Allergy Clin Immunol. 1988 Nov;82(5 Pt 1):741–4.*

17 *Wananukul S, Voramethkul W, Kaewopas Y, Hanvivatvong O. Prevalence of Positive Antinuclear An-tibodies in Healthy Children. Allergy Immunol. 2005;23(2-3):153–7.*

18 *Von Mühlen CA, Tan EM. Autoantibodies in the diagnosis of systemicrheumatic diseases. Semin Arthritis Rheum. 1995;24(5):323–58.*

19 *Dayer E, Dayer J-M, Roux-Lombard P. Primer: the practical use of biological markers of rheumatic and systemic inflammatory diseases. Nat Clin Pract Rheumatol. 2007;3(9):512–20.*

20 *McGhee JL, Kickingbird LM, Jarvis JN. Clinical utility of antinuclear antibody tests in children. BMC pediatr. 2004;4:13.*

21 *Perilloux B, Shetty A, Leiva L, Gedalia A. Antinuclear antibody (ANA) and ANA profile tests in children with autoimmune disorders: a retrospective study. Clin Rheumatol. 2000;19(3):200–3.*

22 *Narain S, Richards HB, Satoh M, Sarmiento M, Davidson R, Shuster J, et al. Diagnostic accuracy for lupus and other systemic autoimmune diseases in the community setting. Arch Intern Med. 2004;164(22):2435–41.*

23. *Kavanaugh A, Tomar R, Reveille J, Solomon DH, Homburger HA. Guidelines for clinical use of the antinuclear antibody test and tests for specific autoantibodies to nuclear antigens. Arch Pathol Lab Med. 2000;124(1):71–81.*

24 *Spencer-Green G. Outcomes in primary Raynaud phenomenon: a meta-analysis of the frequency, rates and predictors of transition to secondary diseases. Arch Intern Med. 1998;158(6):595–600.*

25 *Zimmerman SA, Ware RE. Clinical significance of the antinuclear antibody test in selected children with idiopathic thrombocytopenic purpura. J Pediatr Hematol Oncol. 1997;19(4):297–303.*

FT38

Brucella Presenting With Pancytopenia

Pansitopeni ile Kendini Gösteren Brucella: Olgu Sunumu

Ümmü Seleme ÖZBEK[1], Özge Metin AKCAN[2], Abdulkerim ÇOKBİÇER[1], Merve KAPLAN[1], Hüseyin TOKGÖZ[3]

Necmettin Erbakan University, Meram Medical Faculty, Department of Child Health and Diseases, Konya, Turkey

Necmettin Erbakan University, Meram Medical Faculty, Department of Pediatric Infectious Diseases, Konya, Turkey

Necmettin Erbakan University, Meram Medical Faculty, Department of Pediatric Hematology, Konya, Turkey

Abstract:
Introduction: Brucellosis is an infectious disease that can be acquired through direct contact with infected animals, ingestion of raw milk and dairy products from infected animals and / or through the inhalation of infectious droplets. They can involve other systems, especially reticuloendothelial system, resulting in different clinical pictures. The most common complaints are fever, arthralgia and sweating. While anemia and thrombocytopenia are common in patients with brucellosis, pancytopenia is a rare complication.
Case Report: A 13-year-old girl referred to our hospital from another hospital because of fever, abdominal pain and pancytopenia in blood tests. Case history included goat, dog, cow contact and consumption of cheese from raw milk. Brucella Immuncapture (tube + commbs) was detected as 1/5120 titer. Brucellosis treatment was planned to be completed in 6 weeks.
Discussion and Conclusion: When investigating the etiology of pancytopenia in areas where brucellosis is endemic, like our country, it should be kept in mind that acute brucellosis may cause pancytopenia together with other reasons.

Key Words: *Brucellosis, Pancytopenia*

Giriş: Bruselloz enfekte hayvanlardan insanlara doğrudan temas, süt ve süt ürünlerinin taze olarak tüketilmesi ve/veya enfekte damlacıkların inhalasyonu ile bulaşabilen bir enfeksiyon hastalığıdır. Başta retiküloendotelial sistem olmak üzere diğer sistemleri de tutabilmekte ve sonuçta farklı klinik tablolar ortaya çıkmaktadır. Brusellozlu olgularda anemi ve trombositopeni yaygın olarak görülebilirken pansitopeni nadir bir komplikasyondur.
Olgu Sunumu: On üç yaşında kız olgu 5 gündür devam eden ateş, karın ağrısı ve dış merkezde bakılan kan tetkiklerinde pansitopeni olması nedeniyle hastanemize başvurdu. Olgunun özgeçmiş sorgulamasında keçi, köpek, inek teması ve çiğ sütten peynir tüketimi mevcuttu. Brucella Immuncapture (tüp+commbs) 1/5120 titre olarak sonuçlandı. Bruselloz tedavisinin 6 haftaya tamamlanması planlandı.
Sonuç ve Tartışma: Ülkemiz gibi brusellozun endemik olduğu bölgelerde pansitopeni etiyolojisi araştırılırken diğer nedenlerle birlikte akut brusellozun pansitopeni yapabileceği akılda tutulmalıdır.

Anahtar kelimeler: *Bruselloz, Pansitopeni*

Introduction:

Brucellosis is an infectious disease that can be acquired through direct contact with infected animals, ingestion of raw milk and dairy products from infected animals and / or through the inhalation of infectious droplets[1]. The agent of brucella is small, immobile, gram-negative coccobacillus[1-3]. The species that infect humans are Brucella abortus, Brucella melitensis, Brucella suis and rarely Brucella canis[4]. The incubation period varies from less than 1 week to several months and most cases become ill within 3-4 weeks after they exposed to the agent[2]. After transmission, they multiply in the regional lymph nodes and pass into the blood. They can involve other systems, especially reticuloendothelial system, resulting in different clinical pictures[1,5]. The most common complaints are fever, arthralgia and sweating[6]. While anemia and thrombocytopenia are common in patients with brucellosis, pancytopenia is a rare complication[7]. Here, we present a case of brucellosis and its management while investigating the cause of pancytopenia.

Case Report:

A 13-year-old girl referred to our hospital from another hospital because of fever, abdominal pain and pancytopenia in blood tests. Case history included goat, dog, cow contact and consumption of cheese from raw milk. She had moderate status on physical examination with pale skin and mucosa and there was 0.5 cm mobile lymphadenopathy in bilateral upper cervical region. Other system examinations were normal. In the blood tests of the case, leukocyte count was 4340/mm³, absolute neutrophil was 890/mm³, hemoglobin was 8.6 g/dL, platelet was 72000/mm³, AST was 100 U/L, ALT was 46 U/L and LDH was 726 U/L. Sedimentation was 13 mm/hour, C-reactive protein was 65 mg/L (< 5 mg/L). In peripheral blood smear; 36% lymphocyte, 48% monocyte, 12% bands and 4% segmented neutrophils were detected. Blasts cells or atypical cells were not found. Platelets were observed in 4-7 clusters. There was mild hypochrome and anisocytosis in erythrocytes. Throat, blood, urine cultures and viral serology were taken. Brucella Immuncapture (tube + commbs) was detected as 1/5120 titer then rifampicin (20 mg / kg / day) and doxycycline (4 mg / kg / day) were started. Brucella spp. was found in the blood culture which was taken during the fever period. Laboratory parameters of the case improved during follow-up. Brucellosis treatment was planned to be completed in 6 weeks.

Discussion and Conclusion:

Brucellosis is widespread issue in our country and continues to be an important public health problem. It is difficult to diagnose it due to various clinical findings at every age[3,6].

Hematological changes are also common in brucellosis, which can affect all systems[8]. Mild hypochromic and microcytic anemia may be observed in brucellosis. Anemia varies between 44-74%. Leukopenia and thrombocytopenia may be seen during the course of the disease[9]. Pancytopenia has been reported in various rates such as 3-21%[4,10]. Hemoglobin value of our case was 8,6 g/dL, absolute neutrophil value was 890/mm3 and platelet value was72000/mm3. The combination of anemia, neutropenia and thrombocytopenia in the case was evaluated as pancytopenia. In pathogenesis of pancytopenia, which is a rare complication, hypersplenism, diffuse intravascular coagulation, hemophagocytosis, bone marrow suppression, and platelet destruction are responsible[10]. It is reported that pancytopenia, which can be seen during the course of brucellosis, responds to treatment and clinical findings and laboratory findings improve[9,10]. In our case, pancytopenia improved with appropriate antimicrobial treatment.

Wright agglutination is the most commonly used serological diagnostic method in brucellosis; Titers of 1/160 and above are considered significant. Wright agglutination test was positive at 1/5120 titer in the case.

Blood culture positivity in the diagnosis of brucellosis may vary between 15-70% depending on the method used[7]. In our case, we were able to produce the causative agent in blood culture.

When investigating the etiology of pancytopenia in areas where brucellosis is endemic, like our country, it should be kept in mind that acute brucellosis may cause pancytopenia together with other reasons. Pancytopenia in brucellosis can be resolved in a short time with appropriate treatment.

Kaynaklar:

1. *Young EJ. Brucellosis. In: Feigin RD, Cherry JD (eds). Textbook of Pediatric Infectious Diseases. Fifth edition. Philedelphia: 6th ed. WB Saunders Company 2009;1678-82.*

2. *American Academy of Pediatrics. Brucellosis. In:Pickering LK, editörs. 2009 Red Book: Report of the Committee on Infectious Diseases. 28th ed. Elk Grove Village, IL: American Academy of Pediatrics 2009;237-9.*

3. *Schutze GE, Jacobs RF. Brucella. In: Behrman RE, Kliegman RM, Jenson HB, editors: Nelson Textbook of Pediatrics 18th ed. Philadelphia: W.B. Saunders Company 2007;1214-6.*

4. *Issa H, Jamal M. Brucellosis in Children in South Jordan. East Med Health J 1999;5: 895-902.*

5. *Yılmaz K, Bayraktaroğlu Z, Sivaslı E, ve ark. Bruselloz tanılı çocuk hastalarda klinik ve laboratuvar verilerinin değerlendirilmesi. Çocuk Dergisi 2004;4: 102-6.*

6. *Vardar F, Gökşen D, Kurugül Z, Özkınay F. Bruselloz Tanı ve Sağaltımı. Ege Pediatri Bülteni 2000;7: 29-32.*

7. *Young EJ. Brucella species. In: Mandell GL, Bennet JE, Dolin R, eds. Principles and Practice of Infectious Disease. 5th ed. Philadelphia: Churchill-Livingstone 2000;2389-93.*

8. *American Academy of Pediatrics. Summaries of Infectious Diseases. In: Peter G, Red Book:1997 Report of the Committee on Infectious Diseases. 24th ed. Elk Grove Village, IL: American Academy of Pediatrics 1997;157-9.*

9. *Kadanalı A ,Soypaçacı Z, Parlak M. Bruselloza Bağlı Bir Pansitopeni Olgusu. İnfeksiyon Dergisi (Turkish Journal of Infection) 2003;17:93-4.*

10. *Al-Eissa YA, Assuhaimi SA, Al-Fawaz IM, Higgy KE, Al-Nasser MN, Al-Mobaireek KF. Pancytopenia inchildren with brucellosis: Clinical manifestations and bone marrow findings. Acta Haematol 1993;89:132-6.*

FT39

Urofacial Syndrome (Ochoa Syndrome) : A Case Report

Ürofasiyal Sendrom (Ochoa Sendromu) : Olgu Sunumu

Gülüzar GÜRHAN[1], Bülent ATAŞ[2], Mesut PİŞKİN[3]

[1]Necmettin Erbakan University Meram Medical Faculty Department of Pediatrics, Konya

[2]Necmettin Erbakan University Meram Medical Faculty Department of Pediatrics, Division of Pediatric Nephrology, Konya

[3]Necmettin Erbakan University Meram Medical Faculty Department of Urology, Konya

Abstract: Urofacial syndrome (US) or Ochoa syndrome is a syndrome characterized by presence of neurogenic bladder (NB) in absence of a neurological abnormality and mechanical obstruction, as well as by a characteristic facial appearance. As the micturition/urine storage center, laughing and crying centers and origin of the facial nerve are in close proximity in the reticular formation, crying facial expression when laughing and clinical presentation of NB are observed. In this manuscript a case who presented with incontinence, was noticed to have crying facial expression when laughing and, unfortunately, developed chronic renal failure (CRF) due to NB is reported.

Keywords*: Incontinence, Urofacial syndrome, Neurogenic bladder, Renal failure*

Özet: Ürofasiyal sendrom (ÜS) veya Ochoa sendromu, nörolojik anormallik ve mekanik obstruksiyon olmadan nörojenik mesane (NM) ve karakteristik yüz görünümü olan bir sendromdur. Retiküler formasyondaki işeme ve idrar depolamayla ilgili olan merkez, gülme ve ağlama merkezleri ve fasiyal sinirin çıkış noktası birbirine yakın olduğundan gülerken ağlayan yüz ifadesi ve NM tablosu görülür. Bu yazıda inkontinans şikayeti ile gelen ve gülerken ağlayan yüz ifadesi dikkati çeken ve maalesef NM'ye bağlı kronik böbrek yetmezliği (KBY) gelişmiş olan bir olgu sunulmuştur.

Anahtar Kelimeler *: İnkontinans, Ürofasiyal sendrom, Nörojen mesane, Böbrek yetmezliği*

Introduction

Urofacial syndrome (Ochoa syndrome) was defined by Bernardo Ochoa in children with neurogenic bladder in absence of a neurological abnormality and "crying facial expression when laughing". Genetic studies have demonstrated that this syndrome is inherited in an autosomal recessive manner and the responsible gene is located on chromosome 10q23-q24 (1). Leucine-rich-repeats and immunoglobulin-likedomains 2 (LRIG2) and heparanase 2 (HPSE2) mutations have been shown to be associated with the disease (2). It increases the risk of bladder dysfunction, urinary incontinence, vesicoureteral reflux, hydroureteronephrosis, urosepsis and progressive renal insufficiency (3).

Case Report

A 9 year-old male patient presented with day-night urinary incontinence persisting for 4 years. His parents were distant relatives. He had been operated for umbilical hernia at 3 months of age and for inguinal hernia at 7 years of age. His background was nonspecific. The

patient had a crying facial expression when laughing (Figure 1B). His neurological examination was normal. His laboratory results at admission were as follows: hemoglobin:8.7 g/dl, serum creatinine: 2.4 mg/dl and urea:82 mg/dl. On renal ultrasonography; bilateral hydroureteronephrosis, thinning of renal cortex and thickening of bladder wall were present. Bilateral grade 5 vesicoureteral reflux (VUR) (Figure 2A) and increased bladder capacity (Figure 2B) were detected in voiding cystourethrography. In urodynamic examination, flask neuropathic bladder was determined. His lumbosacral magnetic resonance imaging was normal. In dynamic renal scintigraphy, functions of left kidney were decreased and the right kidney was nonfunctioning. During follow-ups, he had episodes of pyelonephritis. At 12 years of age, he underwent right nephrectomy and left ureteroneocystostomy. Episodes of pyelonepritis continued to occur despite of clean intermitten catheterization and prophylactic antibiotherapy. He was put on hemodialysis due to chronic renal failure at 15 years of age. At 16 years of age, renal transplantation was performed.

Figure 1A: Normal appearance Figure 1B: Crying facial expression when laughing

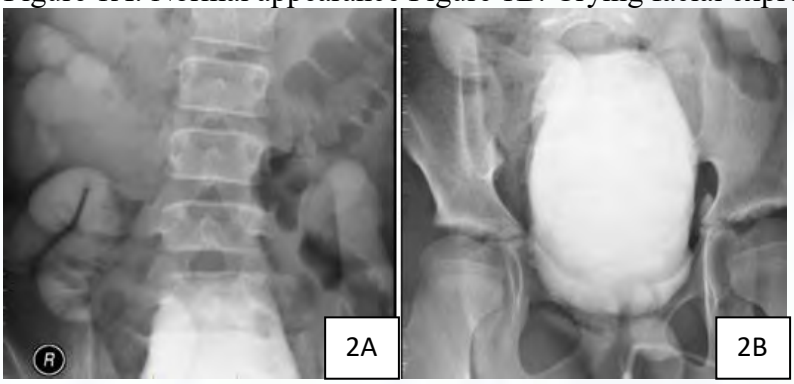


Figure 2A: Grade 5 VUR Figure 2B: Increased bladder capacity

Discussion

While lower urinary tract anomalies are common in children, urofacial syndrome is rare (4). Urofacial syndrome is composed of obstructive uropathy in absence of a neurological abnormality and mechanical obstruction, as well as a characteristic facial appearance. Laughing and crying centers, as well as origin of the facial nerve and the center responsible for micturition/urine storage are in close proximity in the brainstem (5).

Urofacial syndrome is characterized by lower urinary tract injury and a high-grade VUR causing renal failure. One third of the patients have constipation (6). Our patient had non-neurogenic neurogenic bladder, evidence indicating lower urinary tract dysfunction, abnormal smiling and renal failure. He did not have constipation. These findings were consistent with diagnosis of urofacial syndrome.

In conclusion, early diagnosis is important in urofacial syndrome, as there may be NB that leads to renal injury. It can be very important for patients with incontinence to be

comprehensively examined, including smiling, as NB may lead to CRF when its early diagnosis and treatment are delayed and it is not followed-up.

References

1. *Ochoa B (2004) Can a congenital dysfunctional bladder be diagnosed from a smile? The Ochoa syndrome updated. PediatrNephrol 19(1):6–12 2*
2. *Neil A. Roberts; Lrig2 and Hpse2, mutated in urofacial syndrome, pattern nerves in the urinary bladder, Kidney International (2019) 95, 1138–1152*
3. *Newman WG, Woolf AS, Urofacial syndrome; GeneReviews® [Internet]. Seattle (WA): University of Washington, Seattle; 1993-2019. 2013 Aug 22*
4. *Farhat W, Bagli D, Capolicchio G, et al. The dysfunctional voiding scoring system: quailtative standardization of dysfunctional voiding symptoms in children. J Urol 2000;164:1011.*
5. *Akl KF, Al Momany HM, Urofacial Syndrome; Saudi J Kidney Dis Transpl 2012;23(2):346-348*
6. *Daly SB, Urquhart JE, Hilton E, et al. Mutations in HPSE2 cause urofacial syndrome. Am J Med Genet 2010;86(6):963-9.*

FT40

Could Plateletcrıt, in The Fırst 24 Hours of Lıfe, Be an Early Indıcator of Poor Etıology and Prognosıs in Preterm Infants?

Salar Gachpaz Sarkhiz[1], M. Yasar Kilinc[2], Saime S. Uygun[2] , Murat Konak[2], Hanifi Soylu[2].

[1] Selcuk University, Faculty of Medicine, Grade III Student

[2] Selcuk University, Faculty of Medicine, Division of Neonatology.

Background: Platelet indices such as mean platelet volume (MPV) and platelet numbers (Plt) have been used as predictive indicators in many diseases of preterm infants. However, there is limited data regarding use of plateletcrit (PCT) as an indicator of many detrimental conditions (ie, gestational diabetes, hypertension and infection) and also clinical conditions such as necrotizing enterocolitis (NEC), sepsis and mortality in preterm neonates.

Objective: The aim of this retrospective study was to investigate if PCT in the first 24 hour could indicate above mentioned conditions and predict poor prognosis compared to other blood parameters such as Hemoglobin (Hgb), Mean Corpuscular Volume (MCV), Red Blood Cell Distribution Width (RDW), White Blood Cell (WBC), Plt, MPV and Platelet Distribution Width (PDW).

Design/Method: All premature babies ≤ 32 weeks and admitted to NICU of Selcuk University between January 2018 to June 2019 were investigated. Their maternal conditions for gestational hypertension (GH), diabetes and infection during pregnancy were analysed to reveal potential relation between antenatal conditions and postnatal markers. Infants were also reviewed according to their clinical prognosis and presence of intrauterine growth restriction (IUGR), sepsis, NEC and mortality. The first blood parameters (Hgb, MCV, RDW, WBC, Plt, MPV, PDW and PCT were recorded and evaluated.

Results: Of the 186 infants (GW: 29±1weeks, BW: 1300±100 gr), 92 (49.5%) were girls and 94 (50.5%) were boys. Mean maternal age was 28 ± 1years and 3.8% of these mothers had gestational diabetes, 10.2% hypertension and 9.7% infection. From baby standpoint, 20 infants (10.8%) had IUGR, 50 (26.8%) infants had sepsis, and 18 (9.6%) infants had NEC. Thirty five infants (18.8%) died during hospital course.

In term of gender, there was no difference between BW, Mother's age, although male infants were heavier than females ($p<0.05$). Hematological parameters were similar between 2 genders ($p>0.05$). WBC, Plt, RDW parameters were affected from GH. Interestingly MPV was not affected from any antenatal and postnatal conditions, but PCT levels were significantly low in IUGR, sepsis and in mortality group. Although, platelet numbers are closely related with PCT, they were also affected from IUGR. Both sepsis and mortality were found associated with GW and BW.

Conclusions: Unlike to many studies showing benefits of MPV as a marker of poor prognosis in preterm babies, our study did not show such a benefit of MPV. On the other hand we found PCT as a good marker for detection of antenatal and postnatal detrimental factors on the newborn babies. We believe that prospective studies are needed to understand value of using PCT in this tiny population.

Keywords: *Plateletcrit, preterm babies, marker, prognosis.*

Introduction

Plateletcrit is the volume occupied by platelets in the blood as a percentage and calculated according to the formula PCT = platelet count × MPV / 10,000 (1-2). Under physiological conditions, the amount of platelets in the blood is maintained in an equilibrium state by regeneration and elimination. The normal range for PCT is 0.22–0.24% (1,2,3). In healthy subjects, platelet mass is closely regulated to keep it constant, while MPV is inversely related to platelet counts (2,3,4). A simultaneous reduction of Plt and PCT indicates that platelets have been excessively consumed (5). Platelet indices have been shown to have diagnostic value in certain inflammatory diseases, such as inflammatory bowel diseases, rheumatoid arthritis, ankylosing spondylitis, ulcerative colitis, and atherosclerosis (4, 6-7). Mean platelet volume shows the activity of disease in systemic inflammation, acute pancreatitis, unstable angina, and myocardial infarction (8-9).Sepsis is one of the most common causes of death among hospitalized patients in newborn intensive care units (NICUs). Necrotizing enterocolitis (NEC) is also one of the most common and serious preterm-related complications with high surgical rate and mortality in premature infants. The morbidity of NEC can be as high as 28% in very low birthweight infants (10-14). There are many factors which can affect babies' conditions for mortality and morbidities. However, our diagnostic tools are in limited number for this purpose. Our study aimed to investigate if PCT in the first 24 hours could be helpful for grossly recognizing of many detrimental conditions (ie, gestational diabetes, hypertension and infection) and also clinical conditions such as necrotizing enterocolitis (NEC), sepsis and mortality in preterm neonates.

Materials and methods

In this study, we retrospectively checked the data of all premature infants hospitalized in the NICU department of Selcuk University between January 1, 2018 and June 30, 2019.Initial maternal and newborn history were taken from patient records and electronic databases. Infants born 32 weeks or earlier were included and their hemogram in the first 24 were reviewed. Parameters that we checked were mean platelet volume (MPV), mean corpuscular volume (MCV), platelet distribution width (PDW), plateletcrit (PCT), haemoglobin (Hgb), platelet numbers (Plt) and white blood cells (WBC). We also evaluated the mothers' history for diabetes, hypertension and infection from the records. Infants were reviewed in terms of IUGR, sepsis, NEC and mortality. Data was entered into a Microsoft Office excel 2010 database and imported into SPSS statistical software for analysis.

Statistical analysis

Prenatal factors (gestational diabetes, infection and GH) and postnatal outcomes (IUGR, Sepsis, NEC and Death) were categorized. Non-parametric numeric values of Hgb, MCV, RDW, WBC, Plt, MPV, PDW and PCT were compared for each group by using Mann-Whitney test. $p<0.05$ was considered to be statistically significant.

Results

The general characteristics of groups are shown in Table 1&2 (n=186). A total of 186 infants who met our criteria were reviewed. Ninety four (%50.5) of them were boys and 92 (%49.5) were girls (Table1). Their average GW was 29 ± 1, and the BW was 1300 ± 100 g. Maternal age was 28 ± 1 years and 3.8% of the mothers were gestational diabetes, 10.2% GH, 9.7% infection. In addition, 20 infants had IUGR when postnatal period was evaluated. 50 infants

had sepsis and 18 infants had NEC. Thirty five infants (18.8%) died during hospital course. (Table2&3)

Table 1
General characteristics of the study groups.

	N(%)	NEC	Sepsis	IUGR	Exitus
Male	94(%50.5)	8	22	7	15
Female	92(%49.5)	10	28	13	20
Total	186(%100)	18(%9.7)	50(%26.9)	20(%10.8)	35(%18.8)

Table 2

	Birth weight mean(gr)	Gestational weeks mean	Mother's age
Male	1417	29	27
Female	1226	28	29
Total Mean	1300±100	28±1	28±1

Table 3

	Gestational diabetes	Gestational hypertension	Gestational infection
N (%)	7(%3.8)	19(%10.2)	18(%9.7)

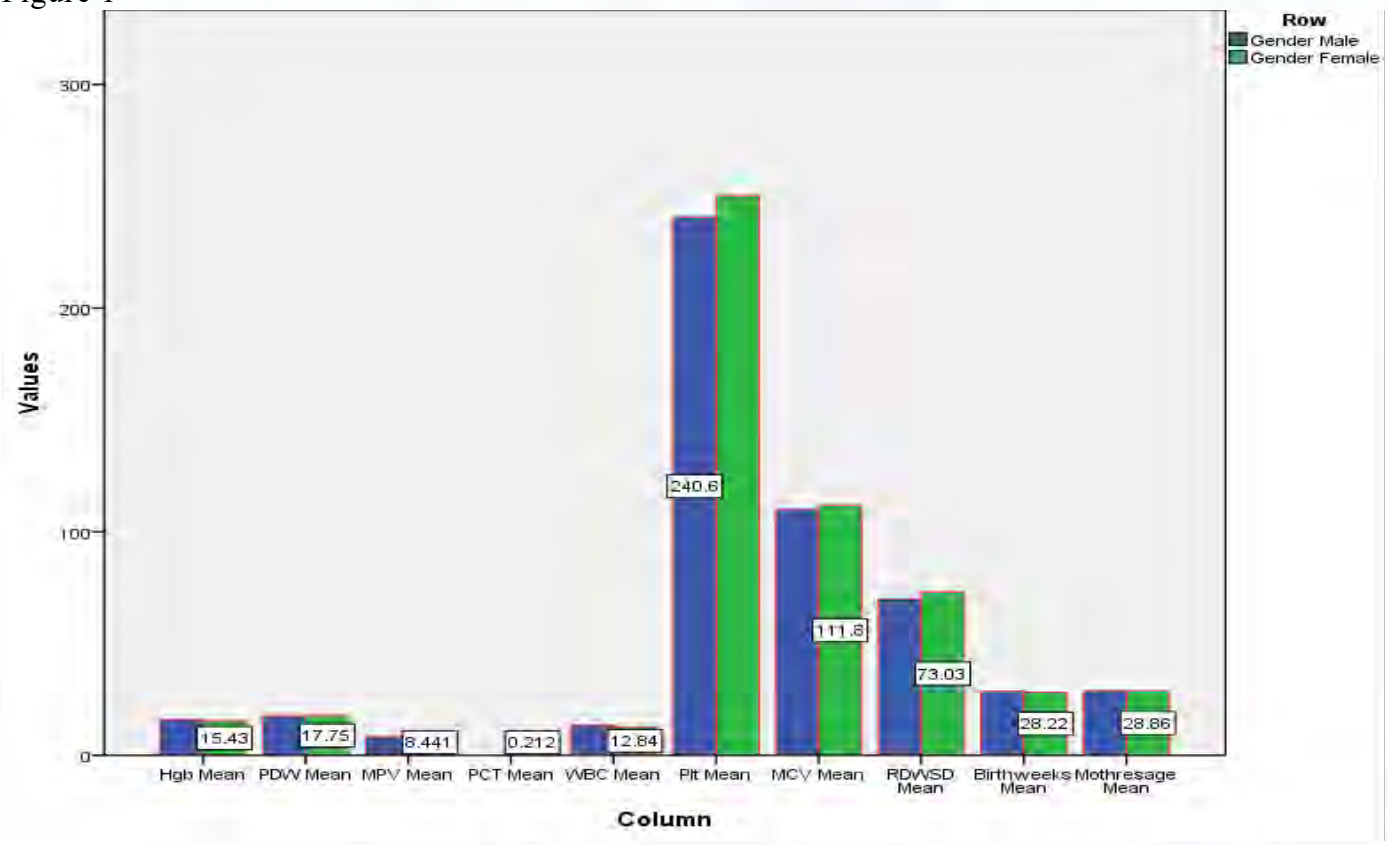
According to statistical results, babies of GH mothers had low WBC and Plt values and high RDW values ($p<0.05$) however in terms of Hgb , MCV, MPV, PDW and PCT there was no significant difference ($p>0.05$).
There was no significant difference among the other parameters ($p>0.05$) in gestational diabetes except MCV. Infants whose mothers are with gestational diabetes had low MCV ($p<0.05$).
On the other hand, IUGR infants had high RDW, MCV and WBC values while PCT and Plt values were low ($p<0.05$).
MCV, RDW and PDW values were higher in infants with sepsis and PCT and Plt values were low ($p<0.05$).
There was no significant difference between the blood parameters that we investigated between infants with and without NEC ($p>0.05$).
PCT, Plt and Hgb values were low and MCV and RDW values were high in infants who died ($p<0.05$).
There was no significant difference in Hgb, WBC and MPV between sepsis positive and negative premature babies ($p>0.05$).
There was no difference in terms of Hgb, MPV and PDW between infants with and without IUGR ($p>0.05$) Table 4.
Also the blood parameters we investigated in gestational infection were not affected among the premature($p>0.05$) Table 4.
The results were summarized on Table 4.

Table 4

Prenatal/Postnatal factors	Hgb	WBC	Plt	MCV	MPV	RDW	PDW	PCT
Gestational diabetes	N	N	N	p=0.043	N	N	N	N
Gestational infection	N	N	N	N	N	N	N	N
Gestational hypertension	N	p=0.018	p=0.044	N	N	p=0.036	N	N
IUGR	N	p=0.033	p=0.000	p=0.001	N	p=0.000	N	p=0.000
Sepsis	N	N	p=0.013	p=0.001	N	p=0.003	p=0.023	p=0.007
NEC	N	N	N	N	N	N	N	N
Mortality	p=0.000	N	p=0.000	p=0.041	N	p=0.003	N	p=0.000
Gender	N	N	N	N	N	N	N	N

Hematological parameters were similar between two gender (p>0.05) Figure 1.

Figure 1



Discussion

Despite the best current medical and surgical treatment, the overall prognosis of infants with sepsis remains poor. Therefore, it is of great importance to identify novel biomarkers for treatment. Biomarkers are biologically relevant molecules that indicate the presence, progression, or possible outcome of disease conditions. For sepsis, biomarkers have the

potential to diagnose the responsible pathogen, stage of the disease, and possible response to treatment.

Our study demonstrated that infants with sepsis had lower PCT levels compared to infants without sepsis. Furthermore, infants with intrauterine growth restriction and mortality also had lower PCT levels. But overall PCT was the best marker that shows affiliation with IUGR, sepsis and death. Although another popular and novel marker MPV was more extensively studied in many newborn studies and found to be very useful, was affected from gestational diabetes in our study. Considering high frequency of gestational diabetes in pregnant women, it makes MPV weaker than PCT because of contamination according to our results .

Over 178 protein biomarkers have been proposed for sepsis detection, including procalcitonin (15), C-reactive protein (16), interleukin(IL)-6, and soluble urokinase-type plasminogen activator receptor (suPAR). In agreement with the studies above, our study confirmed the important role of platelet indices in infants. Moreover, our study can form the basis for further mechanistic studies and ultimately aid in patient-tailored selection of therapeutic strategies. There are several limitations of this study. First, the current study was a retrospective analysis with a limited number of patients. Thus, a more thorough investigation in a larger series of patients is necessary to confirm the results. Second, the patients were composed of only Selcuk University. External validation is still needed to confirm whether our results can be generalized to a new patient population.

Conclusion

Monitoring the changes of PCT maybe contribute to early detection of sepsis in infants. In addition, IUGR and mortality in infants were related with low level of PCT. The results underlined the importance of PCT involved in infants and pointed out the need for further mechanistic research.

References

1. *Chandrashekar V. Plateletcrit as a screening tool for detection of platelet quantitative disorders. J Hematol. 2013;2:22–6. 10.4021/jh70w [CrossRef] [Google Scholar]*
2. *Adibi P, Faghih Imani E, Talaei M, Ghanei M. Population-based platelet reference values for an Iranian population. Int J Lab Hematol. 2007;29:195–9. 10.1111/j.1751-553X.2006.00843.x [PubMed] [CrossRef] [Google Scholar]*
3. *Wiwanitkit V. Plateletcrit, mean platelet volume, platelet distribution width: its expected values and correlation with parallel red blood cell parameters. Clin Appl Thromb Hemost. 2004;10:175–8. 10.1177/107602960401000208 [PubMed] [CrossRef] [Google Scholar]*
4. *Margetic S. Inflammation and haemostasis. Biochem Med (Zagreb). 2012;22:49–62. 10.11613/BM.2012.006 [PMC free article] [PubMed] [CrossRef] [Google Scholar]*
5. *Zhang S, Cui YL, Diao MY, Chen DC, Lin ZF. Use of platelet indices for determining illness severity and predicting prognosis in critically ill patients. Chin Med J (Engl). 2015;128:2012–8. 10.4103/0366-6999.161346 [PMC free article] [PubMed] [CrossRef] [Google Scholar]*
6. *Thachil J. Platelets in inflammatory disorders: a pathophysiological and clinical perspective. Semin Thromb Hemost. 2015;41:572–81. 10.1055/s-0035-1556589 [PubMed] [CrossRef] [Google Scholar]*
7. *Takeyama H, Mizushima T, Iijima H, Shinichiro S, Uemura M, Nishimura J, et al. Platelet activation markers are associated with Crohn's disease activity in patients with low C-reactive protein. Dig Dis Sci. 2015;60:3418–23. 10.1007/s10620-015-3745-2 [PubMed] [CrossRef] [Google Scholar]*
8. *Beyazit Y, Sayilir A, Torun S, Suvak B, Yesil Y, Purnak T, et al. Mean platelet volume as an indicator of disease severity in patients with acute pancreatitis. Clin Res Hepatol Gastroenterol. 2012;36:162–8. 10.1016/j.clinre.2011.10.003 [PubMed] [CrossRef] [Google Scholar]*

9. *Chu SG, Becker RC, Berger PB, Bhatt DL, Eikelboom JW, Konkle B, et al. Mean platelet volume as a predictor of cardiovascular risk: a systematic review and meta-analysis. J Thromb Haemost. 2010;8:148–56. 10.1111/j.1538-7836.2009.03584.x [PMC free article] [PubMed] [CrossRef] [Google Scholar]*
10. *Novosad SA, Sapiano MRP, Grigg C, et al. Vital signs: epidemiology of sepsis: prevalence of health care factors and opportunities for prevention. Morb Mortal Wkly Rep. 2016;65(33):864–869. doi: 10.15585/mmwr.mm6533e1. [PubMed] [CrossRef] [Google Scholar]*
11. *Vincent J-L, Rello J, Marshall J, et al. International study of the prevalence and outcomes of infection in intensive care units. JAMA. 2009;302(21):1303–1310. doi: 10.1001/jama.2009.1754. [PubMed] [CrossRef] [Google Scholar]*
12. *Mandruzzato G. Intrauterine restriction (IUGR) J Perinat Med. 2008;36:277–281. [PubMed] [Google Scholar]*
13. *Kafetzis DA, Skevaki C, Costalos C. Neonatal necrotizing enterocolitis: an overview. Curr Opin Infect Dis 2003;16:349–55.*
14. *Neu J. Necrotizing enterocolitis. World Rev Nutr Diet 2014;110:253– 63.*
15. *Assicot M, Gendrel D, Carsin H, Raymond J, Guilbaud J, Bohuon C. Lancet. 1993;341:515–518. [PubMed] [Google Scholar]*
16. *Povoa P, Coelho L, Almeida E, Fernandes A, Mealha R, Moreira P, Sabino H. Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases. 2005;11:101–108. [PubMed] [Google Scholar]*

FT41

Geç Adölesan Dönemde Görülen Malign Görünümlü Benign Nadir Bir Olgu: Pulmoner Tüberküloma

Celalettin Korkmaz[1], Adil Zamani[1]
[1]Necmettin Erbakan Üniversitesi, Meram Tıp Fakültesi, Göğüs Hastalıkları Ana Bilim Dalı

Özet

Tüberküloz hastalığı, mycobacterium tuberculosis tarafından oluşturulan en çok akciğerleri tutmakla birlikte tüm organ ve sistemleri tutabilen bir klinik durumdur. Ülkemizde 2017 yılı tüberküloz insidansı 14,6/100.000 olup % 4.6'sı çocukluk yaş grubundadır. Çocukluk çağı tüberkülozunda en sık radyolojik bulgu tek taraflı lenfadenopati ve aynı tarafta konsolidasyondur ancak bazan nodüller ve kitle lezyonu görünümleriyle de karşımıza gelebilir. Tüberküloma, primer veya post-primer tüberküloza bağlı tek veya çok sayıda oval veya küresel şekilli lezyonlar şeklinde görülmekte olup primer veya metastatik akciğer kanserine benzer özellikler gösterir. Bu sunumda 20 yaşında radyolojik bulguları nedeniyle akciğer kanseri düşünülen ve yapılan tetkikler sonucu pulmoner tüberküloma tanısı konulan vakamızı sunmayı amaçladık.

Yirmi yaşında PA akciğer grafide 3,5 cm çapında kitle görünümü saptanan hastanın anamnez, fizik muayene ve rutin laboratuar tetkiklerinde patolojik bulgu yoktu. Toraks BT'sinde 32x34 mm boyutlarında kitle imajı ve hiler 16 mm çapında LAP izlendi. Bronkoskopide endobronşial lezyon izlenmedi bronş lavajı alındı. Mikrobiyolojik ve sitolojik incelemeleri negatifti. EBUS ile transbronşial lenf bezi biyopsisi alındı, benign lenfoid doku olarak raporlandı ve ARB negatifti. PET BT'de metabolik aktivite artışı gösteren (SUV max:8.10) kitle ve sol hiler bölgede 16 mm çapında (SUV max:7.02) lenf nodu izlendi. Hastanın PPD testi 12 mm ölçüldü 1 adet BCG skarı mevcuttu. Transtorakal tru cut biyopsisi yapıldı. Patoloji sonucunun kazeifiye nekrotizan granülomatöz iltihap gelmesi üzerine dörtlü tüberküloz tedavisi başlandı. 9 aylık takip sonucu yeterli radyolojik yanıt alınamaması, malignite kuşkusunun kesin dışlanamaması üzerine cerrahi kararı alınarak wedge rezeksiyon uygulandı. Patolojik incelemesi önceki sonuçla aynıydı malignite saptanmadı.

Pulmoner tüberkülomalar pek çok hastalıkla radyolojik olarak karışabilir. Primer veya metastatik akciğer kanserinden ayırt edilmesi zordur. Şüpheli durumlarda ayırıcı tanı için mümkün olan tüm tanı yöntemleri kullanılmalıdır. Tedavisi, göğüs hastalıkları, göğüs cerrahisi, radyoloji ve nükleer tıp uzmanlarının katıldığı multidisipliner ekip tarafından yönetilmeli, gerekli durumlarda cerrahi tedavi düşünülmelidir.

Anahtar kelimeler: *Tüberküloma, pulmoner nodül, tüberküloz*

GİRİŞ

Tüberküloz hastalığı, Mycobacterium tuberculosis kompleks basilleri tarafından oluşturulan en çok akciğerleri tutmakla birlikte tüm organ ve sistemleri tutabilen bir klinik durumdur. Ülkemizde 2017 yılı tüberküloz insidansı 14,6/100.000, toplam hasta sayısı 12.046 olup %42,3'ü kadın %57,7'si erkektir. Akciğer tutulumu olanlar %66,1, sadece akciğer dışı organ tutulumu olanlar %33,9'dur(1). % 4.6'sı çocukluk yaş grubundadır. TB insidansının arttığı ülkelerde toplam hastaların %40'ı çocuk iken düşük insidanslı ülkelerde bu oran ancak %5 civarındadır(2).

Akciğer grafisinde tüberkülozun her hastalığı taklit edebilmesi ve benzer radyolojik bulgu verebilmesi nedeniyle hiçbir radyolojik bulgu tüberküloza özgü sayılamaz. En sık izlenen radyolojik görünümler kaviter, fibroprodüktif, eksüdatif, asiner, makro ve mikronodüler ve

miliyer tiptir(3). Çocukluk çağı tüberkülozunda en sık radyolojik bulgu tek taraflı lenfadenopati ve aynı tarafta konsolidasyondur(1). Ancak tüberküloz bazen atipik radyolojik görünümlerle karşımıza çıkabilir. Özellikle diyabet, silikoz ve HIV pozitifliği bulunan hastalarda ve yaşlılarda atipik radyolojik görünümler saptanırken, altta yatan hastalığı olmayanlarda da bazen atipik özellikler gözlenebilir. Tüberküloz kimi zaman nodüller ve kitle lezyonu görünümleriyle de karşımıza gelebileceğinden ayırıcı tanıda mutlaka düşünülmelidir(4).

Tüberküloma adı verilen oval veya küresel şekilli, genellikle üst loblarda, 1-5 cm boyutlarında, iyi sınırlı, düzgün konturlu, nodüler veya diffüz kalsifikasyon içerebilen, genellikle BT'de saptanabilen küçük satellit nodülerin de eşlik ettiği nodüler opasiteler şeklinde görülür. Tüberküloma, primer ve post-primer tüberküloza bağlı tek veya çok sayıda, santrali basil içeren kazeöz materyalin, inflamatuar granülomatöz dokuyla çevrilmesi ile oluşur. Tüberküloma yıllarca stabil olarak kalabilir, ancak bazı olgularda büyüyerek kaviter formasyon oluşturabilir(5-8).

Bu sunumda 20 yaşında radyolojik bulguları nedeniyle akciğer kanseri düşünülen ve yapılan tetkikler sonucu pulmoner tüberküloma tanısı konulan vakamızı sunmayı amaçladık.

OLGU

Yirmi yaşında askerlik muayenesi nedeniyle çekilen PA akciğer grafide 3,5 cm çapında kitle görünümü (resim 1) saptanması nedeniyle ileri tetkik için başvuran hastanın aktif solunumsal ve sistemik semptomu yoktu. Fizik muayenesinde patolojik bulgu saptanmadı. Hemogram, sedim, CRP ve rutin biyokimyasal tetkikleri normal sınırlardaydı. Toraks BT'sinde sol alt lob anteriorda plevra ve fissür komşuluğunda oval düzgün sınırlı kistik nekrotik komponentler içeren yaklaşık 32x34 mm boyutlarında kitle imajı (resim 2) ve sol interlober bölgede 16 mm çapında LAP izlendi. Bronkoskopide endobronşial lezyon izlenmedi sol alt lob anterior segment bronşundan lavaj alınarak tüberküloz, mantar ve bakteriel kültürleri, galaktomannan ve sitolojik inceleme istendi. Hepsinin sonucunun negatif gelmesi üzerine endobronşial ultrason (EBUS) eşliğinde sol interlober bölgedeki LAP'den (resim 3) transbronşial lenf bezi biyopsisi alındı, kitlenin periferik yerleşimli olması nedeniyle ulaşılamadı. Alınan örneklerde patolojik inceleme, ARB ve tüberküloz kültürü istendi. Patoloji sonucu benign lenfoid doku olarak raporlandı ve ARB negatifti. Bunun üzerine istenen PET BT'de sol alt lob anteriorda 32x34 mm boyutlarında metabolik aktivite artışı gösteren (SUV max:8.10) kitle ve sol hiler bölgede 16 mm çapında (SUV max:7.02) lenf nodu (resim 4) rapor edildi. Hastanın PPD testi 12 mm ölçüldü 1 adet BCG skarı mevcuttu.

Malignite kuşkusunun artması üzerine transtorakal akciğer biyopsisi planlandı. Ultrason eşliğinde 18 g tam otomatik tru cut biyopsi iğnesi ile sol akciğerde plevral tabanlı solid kitleden biyopsi materyali alındı, komplikasyon olmadı. Alınan örneğin patolojik incelemesi kazeifiye nekrotizan granülomatöz iltihap (kazeifikasyon nekrozu, langhans tipi dev hücreler ve epiteloid histiyositler) mevcut, EZN basil görülmedi olarak raporlandı. Hastaya dörtlü tüberküloz tedavisi (İNH, rifampisin, etambutol, pirazinamid) başlandı. 2 ay dörtlü tedavi 2 ay İNH ve rifampisin tedavisi ile 6 aylık tedavi tamamlandığında kontrol toraks BT'de kısmi regresyon olduğu, kitle görünümünün devam ettiği görüldü (resim 5). Tedavi 3 ay daha uzatıldı ve kesildi. Kontrol tomografisinde lezyonun stabil kaldığı görüldü. Olgu, göğüs hastalıkları, göğüs cerrahi, onkoloji ve nükleer tıp öğretim üyelerinin katılımıyla gerçekleştirilen multidisipliner vaka konseyinde görüşüldü ve rezeksiyon kararı verildi. Sol alt lob anterior segment wedge rezeksiyon uygulandı. Operasyon materyalinin patolojisi kazeifiye nekrotizan granülomatöz iltihap mevcut, EZN basil görülmedi olarak geldi. Operasyondan 2 ay sonra çekilen kontrol akciğer grafide patolojik bulgu saptanmadı (resim 6).

TARTIŞMA

Tüberkülomalar öncelikle iyileşmiş primer tüberküloz enfeksiyonunda gözlenir ancak bazen post-primer tüberkülozda da bulunabilir. Pulmoner tüberküloma, tüberküloz hastalarının yaklaşık% 7-9'unda gelişir(9). Tüberküloz basillerinin bronşiyollere ulaşması, alveoler makrofajlar tarafından düzenlenen ve granülom oluşumuna yol açan immünolojik reaksiyona neden olur. Merkezinde kazeöz nekrozu bulunan bu granülomlar, büyüklüklerini artırarak ve bağ dokusu ile kapsüllenerek tüberküloma dönüşebilir. Tüberkülomaların % 20-30'unda kalsifikasyon bulunur ve sıklıkla ana lezyonun yakın çevresinde küçük uydu lezyonlar görülür(10). Akciğer tüberkülomaları genellikle soliter pulmoner nodül (SPN) olarak bulunur. SPN'ler, akciğer parankiminde sınırları 30 mm'den küçük veya ona eşit olan tek, yuvarlak veya oval nodüller olarak tanımlanır. SPN'ler iyi huylu (pulmoner hamartom, hemanjiyom, enflamatuar psödotümör, lenf nodu hiperplazisi ve tüberküloma gibi) veya malign olabilir (skuamöz hücreli karsinom, adenokarsinom ve bronşiyoloalveoler karsinom). Nodülün boyutu büyüdükçe malignite riski de artar(11). Bizim olgumuzda da lezyonun boyutu 34 mm olup maligniteden kuşkulanılmıştı. Pulmoner tüberkülomanın primer veya metastatik akciğer kanseri ile birlikteliği, özellikle yaşlanan popülasyonda nadir değildir(12). Rizzi ve arkadaşları tüberküloz tedavisi almış hastalarda daha sonra akciğerin aynı bölgesinde skar kanseri gelişebileceğini bildirmiştir(13). Bu hastalar, yeterli tıbbi tedaviye rağmen iyileşme eksikliği gibi atipik klinik ve radyografik bulgularla başvurabilirler. Bu da genellikle cerrahi müdahale ihtiyacına yol açar(14). Tüberküloma için cerrahi tedavisi endikasyonlar; çapın 3 cm'den büyük olması, uzun süreli subfebril ateş, pozitif balgam kültürü, parankimal destrüksiyon, bir lobda çoklu tüberkülomalar ve primer veya metastatik akciğer kanseri şüphesidir(14). Bizim olgumuzda da 9 aylık tedaviye rağmen hafif bir regresyon gözlenmiş olup malignite yada malignite gelişme potansiyeli kesin olarak dışlanamadığından multidisipliner konseyde cerrahi midahale kararı alınmıştır. Aktif tüberkülomada, kitlenin santralinde kazeifikasyon nekrozu, langhans tipi dev hücreler ve epiteoloid hücreler bulunurken aktif olmayan tüberküloma esas olarak aselüler kazeöz materyal ve fibrozisden oluşur(15). Bizim olgumuzun patolojik incelemesi aktif tüberküloma ile uyumluydu. PET-BT aktif ve inaktif akciğer tüberkülomaları arasındaki farkı başarıyla ortaya koyar ancak aktif tüberkülom ile akciğer kanserini ayırt etmesi zordur(14). Pulmoner tüberküloma, anti-tüberküloz tedavisine kötü yanıt verir ve sıklıkla uzun süreli tedavi gerektirir. European Respiratory Journal'da yayınlanan 45 hastanın retrospektif olarak değerlendirildiği çalışmada; 3 aylık tedaviden sonra hastaların sadece % 40'ında tüberküloma boyutunda azalma (>% 25'lik bir azalma) görülmüş, % 55.6'sında değişmeden kalma, 2 hastada artış (ilk alana kıyasla >% 25 artış) bildirilmiştir. 12 aylık tedaviden sonra olguların % 76.2'sinde lezyonun boyutunda değişik oranlarda küçülme gözlenmiştir(16). Bizim olgumuzda da 9 aylık tedavi sonrası kısmi regresyon izlenmiş ve sonrasında cerrahi kararı alınmıştır.

Her ne kadar radyolojik parametreler SPN'nin doğasına ilişkin bazı ipuçları sunsa da, nodülün cerrahi rezeksiyonu, altın tanı standardı olmaya devam etmekte ve primer ve metastatik akciğer kanserini dışlamak için gerçekleştirilmektedir. Rezeksiyon ayrıca daha ileri tedavi stratejilerinin belirlenmesine ve anti-tüberküloz tedavisinin süresini ve dozunu azaltmaya yardımcı olmak için de değerlidir.

Aktif tüberküloma ile primer veya metastatik akciğer kanserini klinik olarak ayırmak halen oldukça zordur. Tüberküloma da dahil olmak üzere iyi huylu SPN'lerin rezeksiyonu pulmoner kama rezeksiyonu kullanılarak yapılır(17). Modern torasik cerrahi teknikleri, özellikle de VATS ile, akciğer tüberkülomalı hastaların etkin cerrahi tedavisi sağlanır. Konvansiyonel anti-tüberküloz tedaviye cevap vermeyen pulmoner tüberküloma ve komplikasyonları VATS ile tedavi edilebilir. Cerrahi müdahale sadece hastayı iyileştirmekle kalmaz, aynı zamanda

diğer insanlara tüberküloz bulaşını da önler. Tedavi kişiselleştirilmeli hastaya göre tadavi planı yapılmalıdır(14).

SONUÇ

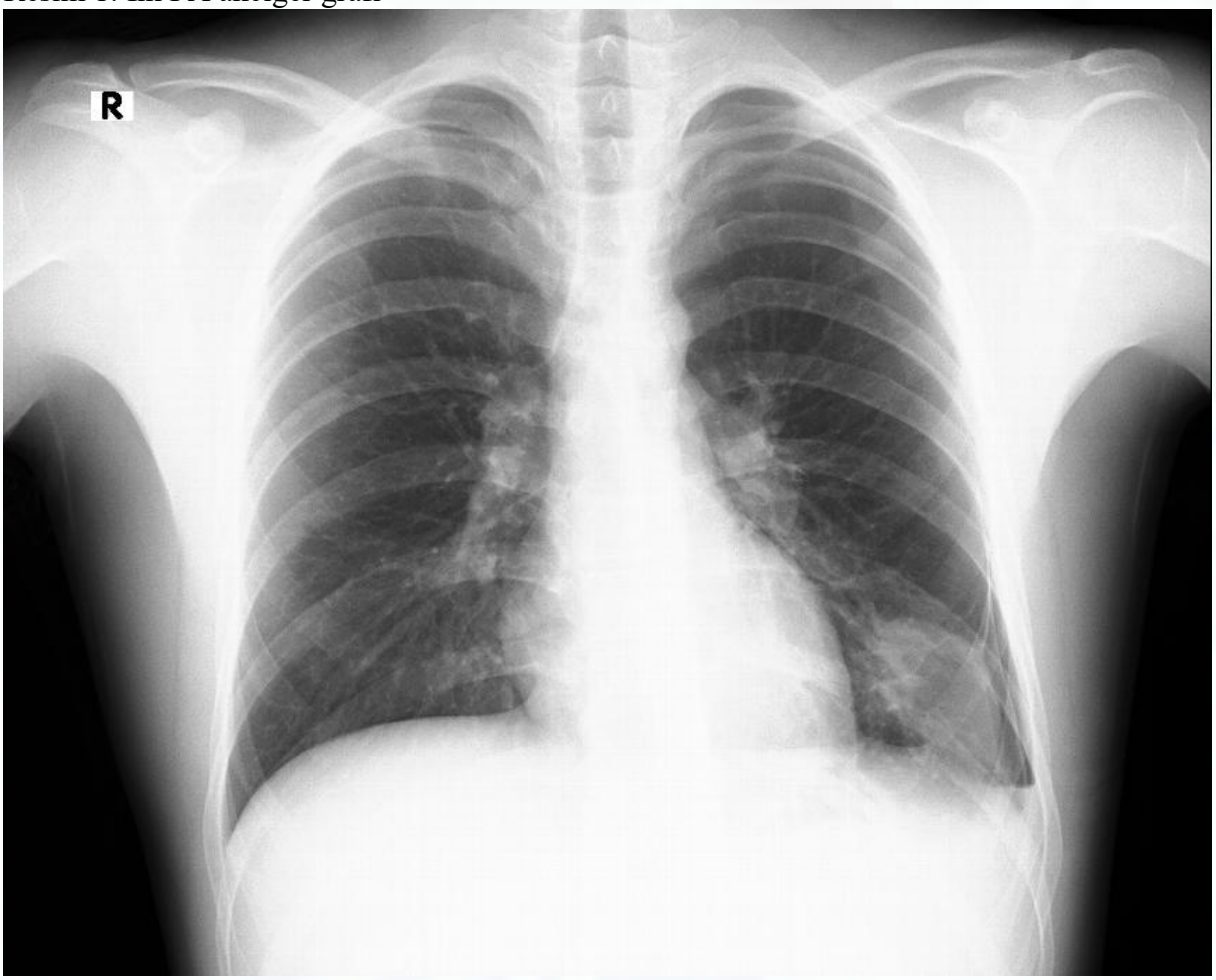
Pulmoner tüberkülomalar pek çok hastalıkla radyolojik olarak karışabilir. Tanı konamama ve yanlış tanı yaygındır. Primer veya metastatik akciğer kanserinden ayırt edilmesi zordur. Şüpheli durumlarda ayırıcı tanı için mümkün olan tüm tanı yöntemleri kullanılmalı, girişimsel işlemler yapılmalı, histopatolojik yada mikrobiyolojik tanıya gidilmelidir. Tedavisi, göğüs hastalıkları, göğüs cerrahisi, radyoloji ve nükleer tıp uzmanlarının katıldığı multidisipliner ekip tarafından yönetilmeli, gerekli durumlarda cerrahi tedavi düşünülmelidir.

Kaynaklar

1. *Bakanlığı TS. Tüberküloz tanı ve tedavi rehberi. Ankara, Artı6 Medya Tanıtım Matbaa Ltd Şti. 2019;1.*
2. *Donald PR. Childhood tuberculosis: out of control? Current opinion in pulmonary medicine. 2002;8(3):178-82.*
3. *Dalar L, Sökücü SN, Karasulu AL, Altın S. Tuberculosis Can Mimic Lung Cancer: A Case Series. Turk Toraks Dergisi/Turkish Thoracic Journal. 2013;14(1).*
4. *Schweigert M, Dubecz A, Beron M, Ofner D, Stein H. Pulmonary infections imitating lung cancer: clinical presentation and therapeutical approach. Irish journal of medical science. 2013;182(1):73-80.*
5. *Fraser RS, Paré JP. Synopsis of diseases of the chest. 2 ed: WB Saunders company; 1994. 315-32 p.*
6. *Palmer P, editor Pulmonary tuberculosis—usual and unusual radiographic presentations. Seminars in roentgenology; 1979: Elsevier.*
7. *Woodring JH, Vandiviere H, Fried A, Dillon M, Williams T, Melvin I. Update: the radiographic features of pulmonary tuberculosis. American journal of roentgenology. 1986;146(3):497-506.*
8. *Güneş A HM. Çocukluk Çağında Tüberküloz Tanı, Tedavi ve Korumada Güncel Yaklaşımlar ve Olgu Örnekleri, Toraks Kitapları. İstanbul: Nobel Tıp Kitabevleri; 2017. 51-9 p.*
9. *Andreu J, Caceres J, Pallisa E, Martinez-Rodriguez M. Radiological manifestations of pulmonary tuberculosis. European journal of radiology. 2004;51(2):139-49.*
10. *Van Dyck P, Vanhoenacker F, Van den Brande P, De Schepper A. Imaging of pulmonary tuberculosis. European radiology. 2003;13(8):1771-85.*
11. *Kikano GE, Fabien A, Schilz R. Evaluation of the solitary pulmonary nodule. Am Fam Physician. 2015;92(12):1084-91A.*
12. *Ashizawa K, Matsuyama N, Okimoto T, Hayashi H, Takahashi T, Oka T, et al. Coexistence of lung cancer and tuberculoma in the same lesion: demonstration by high resolution and contrast-enhanced dynamic CT. The British journal of radiology. 2004;77(923):959-62.*
13. *Rizzi A, Rocco G, Robustellini M, Rossi G, Della Pona C, Massera F. Results of surgical management of tuberculosis: experience in 206 patients undergoing operation. The Annals of thoracic surgery. 1995;59(4):896-900.*
14. *Xia Z, Qiao K, He J. Recent advances in the management of pulmonary tuberculoma with focus on the use of tubeless video-assisted thoracoscopic surgery. Journal of thoracic disease. 2017;9(9):3307.*
15. *Ishida T, Yokoyama H, Aneko S, Sugio K, Sugimachi K, Hara N. Pulmonary tuberculoma and indications for surgery: radiographic and clinicopathological analysis. Respiratory medicine. 1992;86(5):431-6.*
16. *Lee H, Oh J, Lee J, Yoo CG, Lee CT, Kim Y, et al. Response of pulmonary tuberculomas to anti-tuberculous treatment. European Respiratory Journal. 2004;23(3):452-5.*
17. *Jeong YJ, Yi CA, Lee KS. Solitary pulmonary nodules: detection, characterization, and guidance for further diagnostic workup and treatment. American Journal of Roentgenology. 2007;188(1):57-68.*

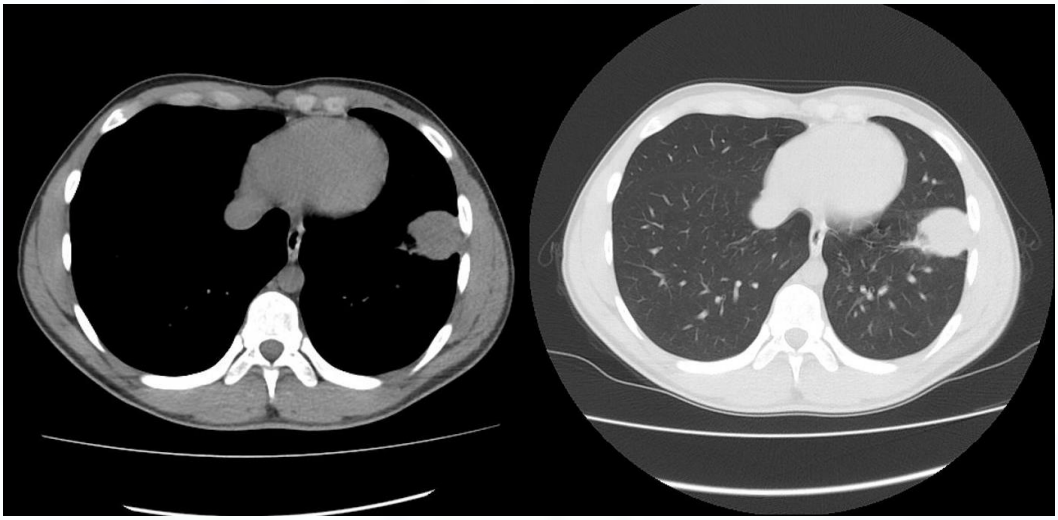
RESİMLER

Resim 1: İlk PA akciğer grafi



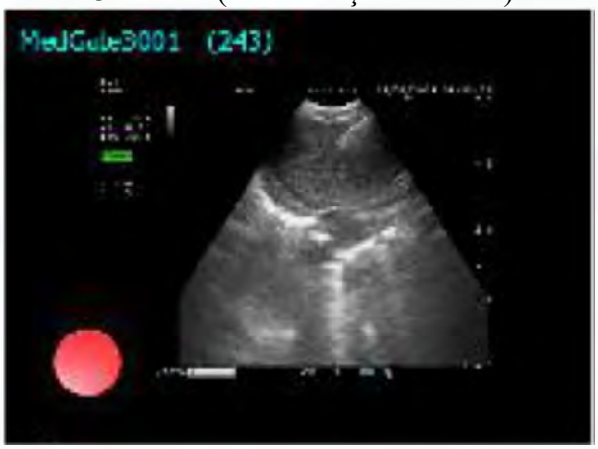
Sol alt zonda kitle lezyon

Resim 2: İlk Toraks BT



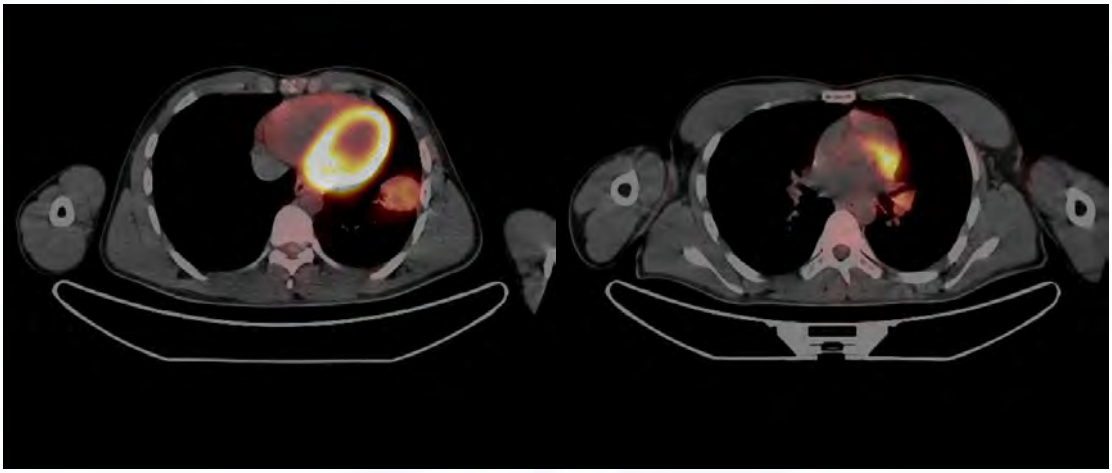
Sol alt lob anterior segmentte periferik yerleşimli kitle lezyon

Resim 3: EBUS (endobronşial ultrason)



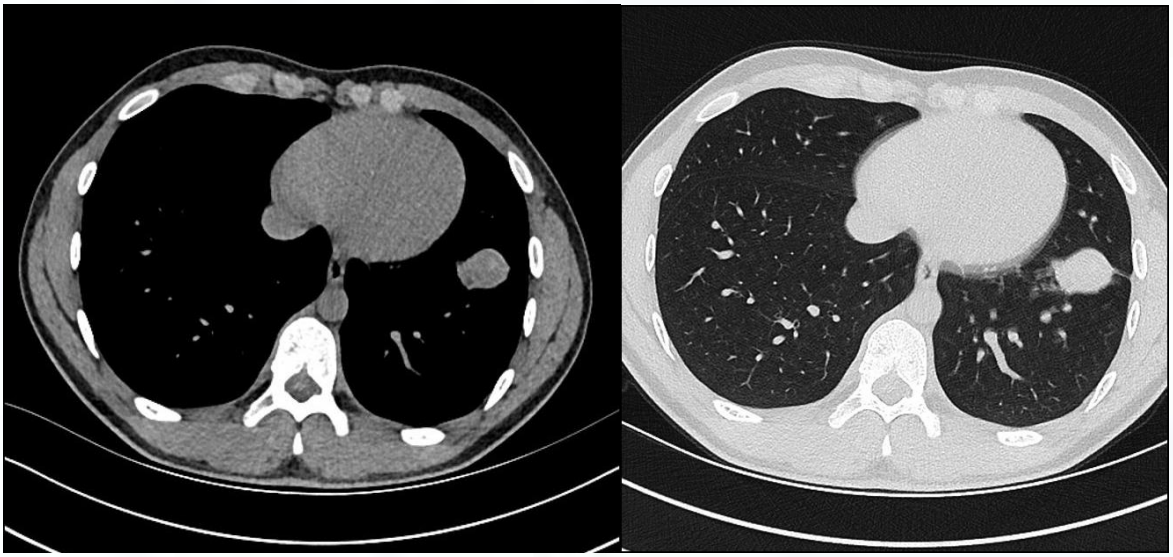
EBUS ile sol interlober bölgede 1,6 cm LAP'den biyopsi alma işlemi

Resim 4: PET BT



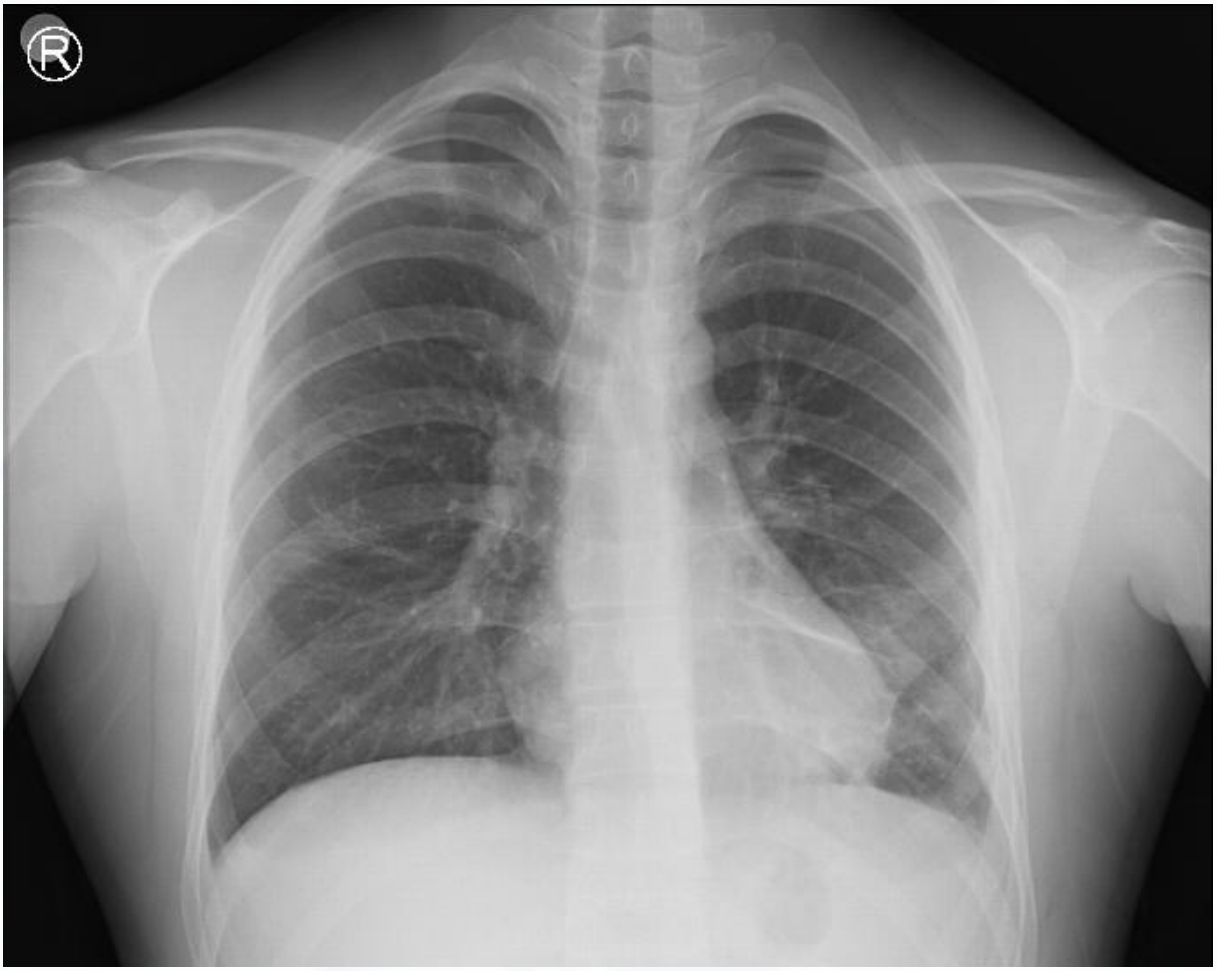
Sol alt lob anterior ve sol interlober bölgede FDG tutan kitle ve LAP

Resim 5: 6 Aylık tüberküloz tedavisi sonrası toraks BT



Sol alt lob anterior segmentteki kitle lezyonda kısmi regresyon

Resim 6: Son PA akciğer grafi



Sol alt zonda retrokardiyak lineer dansite artışı (operasyona sekonder)

FT41

A Rare Reason of Pediatric Urolithiasis: Urethral Stone

Burcu Daldaban Çiftçi[1], Halis Can Demirtürk[2], Uğur Özkan[2], İsmail Dursun[3]

Erciyes University School of Medicine, Department of Paediatrics, Kayseri,Turkey

Erciyes University School of Medicine Department of Paediatric Surgery , Department of Paediatric Urology ,Kayseri, Turkey

Erciyes University School of Medicine Department of Paediatric Nephrology , Kayseri, Turkey

Introduction

Renal stone disease is a significant health problem and can be seen among all ages with an increasing incidence. Pediatric urolithiasis (PU) is prevalent in some geographical regions popularly known as the stone belt1. Many factors are responsible for this endemic nature such as magnesium, phosphates, low protein and high-carbohydrate diet, dehydration, urinary tract infection etc2. The incidence and clinical characteristics of urinary calculi in children vary in relation to geographical location and historical periods that related to climate, genetic, socio-economical factors and dietary factors3-5. The %30-85 of PU cases are related to underlying metabolic abnormalities6.

The major clinic presentation is renal colic in adolescents as adults. However, abdominal pain is the main complaint in school children7. Gross or microscopic hematuria appears in 30% to 55% of all PU. Lower urinary tract symptoms, i.e., dysuria, urinary retention, enuresis, urinary incontinence and pollakiuria, may be associated with distal displacement of calculi. Excessive manipulation of genitalia in preschool children may be an early sign of urethral lithiasis8.

While the location of the stone is mostly in the upper urinary tract in developed countries, bladder stones causing bladder outlet obstruction is seen in developing countries9. Urethral stones are rarely detected compare to other locations10. Herein, we report a child who presented with urinary retention secondary to urethral stone.

Case

4 years old boy was admitted with a complaint of difficulty starting urine stream for 2 months. His medical history was unremarkable trauma, surgical procedure, constipation, encopresis and recurrent urinary tract infection. On admission, His height and weight percentile was in the normal range for his age. Physical examination was normal except supra-pubic tenderness and fullness suggesting a palpable distended bladder. His kidney functions tests were normal. Kidney, ureter and bladder ultrasound showed revealed glob vesicle and a 7.5 mm hyperechoic mass resembling stone in proximal urethra. The proximal urethral stone and glob vesicale were confirmed on CT scan. Because of the location of calculi, stone was pushed into the bladder using cystoscope and broken into smaller fragments, and removed from bladder.

Discussion and conclusion

Acute urinary retention is very common among the pediatric age affected by urethral calculi11. Usually urethral stones are observed in the anterior portion of the urethra and less in the posterior portion12.

Urethral calculi are divided into two types namely primary (when formed within urethra due to some anatomical defect) or secondary (when a stone from upper urinary tract or bladder gets lodged into urethra). These are called migratory stones12. Calcium oxalate stones are

commonly reported as most common type of stones in many series13-15. As we see in our case urethra stones may cause obstruction in proximal portion of urethra.
Although the management of the urethra calculi is based the location of stone, initial treatment may be suprapubic urine drainage for urgent relief in some of patients. If the stone located in the posterior portion of urethra or bulbous urethra we can push the calculi into the bladder and use the procedure named endoscopic vesicolithotomy. If the stone is located in penil urethra we can do fossa navicularis meatothomy or first we can try to milking the stone from penil shaft. Another option may be urethrolitothomy in case of failing previous procedures16.

***Key Words**: Glob vesicale; paediatric; urethral stone*

References

1 *López M, Hoppe B. History, epidemiology and regional diversities of urolithiasis. Pediatr Nephrol 2010; 25:49-59.*
2 *Kit LC, Filler G, Pike J, Leonard MP. Paediatric urolithiasis: experience at a tertiary care paediatric hospital. Can Urol Assoc J 2008; 2:381-6.*
3 *Ali SH, Rifat UN. Etiological and clinical patterns of childhoodurolithiasis in Iraq. Pediatr Nephrol 2005; 20: 1453-1457 [PMID:16010596]*
4 *Evan AP. Physiopathology and etiology of stone formation in thekidney and the urinary tract. Pediatr Nephrol 2010; 25: 831-841[PMID: 19198886 DOI: 10.1007/s00467-009-1116-y]*
5 *Sas DJ. An update on the changing epidemiology and metabolicrisk factors in pediatric kidney stone disease. Clin J Am SocNephrol 2011; 6: 2062-2068 [PMID: 21737846 DOI: 10.2215/CJN.11191210]*
6 *Penido MG, Srivastava T, Alon US. Pediatric primary urolithiasis: 12-year experience at a Midwestern Children's Hospital. J Urol 2013;189: 1493-1497 [PMID: 23201378 DOI: 10.1016/j.juro.2012.11.107]*
7 *Cameron MA, Sakhaee K, Moe OW. Nephrolithiasis in children. Pediatr Nephrol 2005; 20: 1587-1592 [PMID: 16133066]*
8 *Hoppe B, Kemper MJ. Diagnostic examination of the child with urolithiasis or nephrocalcinosis. Pediatr Nephrol 2010; 25: 403-413[PMID: 19104842]*
9 *Sharma AP, Filler G. Epidemiology of paediatric urolithiasis. Indian J Urol 2010; 26:516-22.*
10 *Verit A, Savas M, Ciftci H, Unal D, Yeni E, Kaya M. Outcomes of urethral calculi patients in an endemic region and an undiagnosed primary fossa navicularis calculus. Urol Res 2006; 34:37-40. Epub 2006 Jan 24.*
11 *Yılmaz A, Yürük Yıldırım Z. Çocuklarda üriner sistem taş hastalığına yaklaşım. 2013; 13(4): 154-159*
12 *Debenham RK. Urethral calculi. Br J Urol 1930; 2:113-21.*
13 *Jahan Y, Akhtar J, Aziz A. Chemical analysis of urinary calculi in children. J Surg Pak 2000; 5:8-9.*
14 *Rizvi SA, Sultan S, Zafar MN, Ahmed B, Faiq SM, Hossain KZ, et al. Evaluation of children with urolithiasis. Indian J Urol 2007; 23:420-7.*
15 *Alaya A, Najjar MF, Nouri A. Changes in stone composition according to age in Tunisian paediatric patients. Int Urol Nephrol2010; 42:621-8. Epub 2009 Nov 24.*
16 *Akhtar J, Ahmed S, Zamir N. Management of impacted urethral stones in children. J Coll Physicians Surg Pak. 2012 Aug;22(8):510-3. doi: 08.2012/JCPSP.510513.*

FT42

Menstruation Related Recurrent Psychosis: A Case Report

Menstrüasyon İlişkili Rekürren Psikoz: Olgu sunumu

Kezban Öztürk[1], Ahmet Sami Güven[1], Meltem Kıymaz[2], Gül Yücel[3], Hüseyin Çaksen[1]

[1]Necmettin Erbakan University, Meram Medical Faculty, Department of Pediatrics, Division of Pediatric Neurology, Konya

[2]Necmettin Erbakan University, Meram Medical Faculty, Department of Pediatrics, Konya

[3]Konya Meram Education and Research Hospital, Department of Pediatrics, Division of Pediatric Neurology, Konya

Introduction: Menstruation related recurrent psychosis (MRRP) is a rare disease. Its etiology is still unclear. The hormonal changes of the menstrual cycle may be contributing to the pathophysiology of psychiatric conditions.
Case Report: A 16-year-old female patient was referred to our pediatric neurology outpatient clinic for further examination. About 2 years ago, she suddenly complained of inability to speak, inability to stay alone, forgetfulness, refusing to eat and numbness involving her left face, and had no seizures. Her psychiatric complaints lasted for a week per month and resolved spontaneously. For the last two years, she had history of multiple admissions for brief delusional episodes to another hospital. In the period following the onset of complaints, her family noticed that the child's complaints occur during her menstrual cycle. After each menstrual period, her symptoms disappear completely and don't require treatment with anti-psychotic medication. There is no history of trauma, fever or toxic exposure. There is no family or personal history of any psychiatric or neurologic illness. She was hospitalized at another center and examined for infectious, metabolic, autoimmune and toxic causes. All test results were normal. She was diagnosed with MRRP and started on quetiapine. On the third day, she exhibited a significant improvement in symptoms, and we stopped her medication. If the patient had similar complaints in the next episode, the same treatment was planned. She has been regularly followed-up for four months and did not yet have a heavy attack requiring antipsychotics.
Conclusion: We present a patient with menstruation induced psychosis, due to its rarity. It is important to publish such cases in order to determine the actual incidence. Neurological examination of patients presenting with psychiatric symptoms is important but the relationship between the findings and menstrual cycle and history of spontaneous improvement after the period should be questioned.

Keywords: *Menstruation, recurrent, psychosis*

Giriş: Menstrüasyon İlişkili Rekürren Psikoz (MİRP) nadir görülen bir hastalıktır. Etiyolojisi hala belirsizdir. Menstrüel siklustaki hormonal değişiklikler, psikiyatrik durumların patofizyolojisine katkıda bulunabilir.
Olgu Sunumu: On altı yaşında kız olgu ileri tetkik için çocuk nörolojisi polikliniğimize sevk edildi. Yaklaşık 2 yıl önce, aniden konuşamama, yalnız kalamama, unutkanlık, yemek yemeyi reddetme ve yüzünün solunda uyuşukluk şikâyeti başlamış, hiç nöbet geçirmemişti. Psikiyatrik şikayetleri ayda bir, 1 hafta sürüp, kendiliğinden düzeliyordu. Son iki yıldır, kısa

delüzyonel epizodları için başka bir hastaneye çok defa başvuru öyküsü vardı. Şikayetleri başladıktan sonra, ailesi çocuğun şikayetlerinin menstrüasyon döneminde meydana geldiğini fark etmişti. Her menstrüasyon döneminden sonra semptomları tamamen kayboluyor ve herhangi bir anti-psikotik ilaca gerek kalmıyordu. Travma, ateş veya toksik maruziyet öyküsü yoktu. Ailesi ya da kendisinde herhangi bir psikiyatrik ya da nörolojik hastalık öyküsü yoktu. Başka bir merkezde yatırılmış ve enfeksiyöz, metabolik, otoimmün ve toksik nedenler için incelenmişti. Tüm test sonuçları normaldi. MİRP tanısı alan olgumuza ketiapin tedavisi başlandı. Üçüncü gün, semptomlarda belirgin bir iyileşme gösterdi ve ilacını stopladık. Olgunun bir sonraki dönemde benzer şikayetleri olursa, aynı tedavi planlandı. Olgu dört aydır düzenli olarak takip edilmektedir ve henüz antipsikotik gerektiren ağır bir atağı olmadı.
Sonuç: Menstrüasyona bağlı psikozu olan bir olguyu nadir olması nedeniyle sunuyoruz. Gerçek insidansının tespiti için bu tür olguların yayınlanması önemlidir. Psikiyatrik semptomlarla başvuran hastaların nörolojik muayenesi önemlidir, ancak bulgular ile menstrüel siklus arasındaki ilişki ve menstrüasyon sonrası spontan iyileşme öyküsü sorgulanmalıdır.

Anahtar Kelimeler: *Menstrüasyon, tekrarlayan, psikoz*

Introduction

Psychosis is a neurologic syndrome that may include hallucinations (auditory, visual, tactile), delusions, confusion, mutism or manic syndrome. Psychosis may be categorized as primary or secondary according to the etiology (1). Of all age groups, women between menarche and menopause are at the highest risk for affective illness. The hormonal fluctuations of the menstrual cycle may contribute to the pathophysiology of mood disorders (2).

Case Report

A 16 year-old teenage was referred to our pediatric neurology outpatient clinic for the recurrent complaints of inability to speak, fear of *being alone*, forgetfulness, refusing to eat, and a numbness involving her left face. For the last two years, she had history of multiple admissions for brief delusional episodes to the another hospital in the city. Symptoms typically appeared a few days before the menstrual bleeding and lasted for a week in some menstrual cycles and resolved spontaneously. Her developmental milestones were normal. There was no family history of any psychiatric or neurologic illness. There was no documented history of physical, emotional, or sexual abuse, trauma, fever or toxic exposure. The neurological examination excluded any neurological syndrome. She had been admitted to the another hospital in the city, and investigated for infectious, metabolic, autoimmune and toxic causes, one month ago. The consultant child and adolescent psychiatrist observed a difficult verbal contact due to the dissociation of thinking, disorientation in place, irritable mood, inappropriate affect and psychomotor agitation. Neuropsychological testing indicated a full-scale IQ within the normal range. During the hospitalization, her arterial blood pressure, heart rate, body temperature were normal. All test results (complete blood counting, thyroid function tests (fT4, fT3, TSH), antithyroid antibodies, vitamin B12 level, urine toxicology screen, tandem mass spectrometry, the level of 24-hour urinary copper and serum ceruloplasmin, anti-nuclear antibodies) were normal. Lumbar puncture had revealed no oligoclonal band and anti-NMDAR antibody, IgM and IgG anti-measles antibodies. Cerebrospinal fluid culture and polymerase chain reaction (PCR) was negative for *Borrelia burgdorferi, Mycobacteria tuberculosis*, cytomegalovirus,Epstein-Barr virüs, human immunodeficiency virüs (HIV) herpes simplex virüs *type I* and *II*. All tests against tumor markers (afp, cea, ca 125) were negative, CT of the chest and neck as well as ultrasonography

(usg) of abdomen showed no abnormalities. An electroencephalograph (EEG), and cranial magnetic resonance imaging (MRI) were normal. No treatment had been given and than she was referred to us for the etiology and treatment. The patient presented to our outpatient clinic with similar complaints in the menstrual period. Her menstrual periods were quite regular since the menarche. Serum LH (luteinizing hormone), FSH (follicle stimulating hormone), progesterone, estradiol, prolactin and testosterone levels were normal. She was diagnosed as MRRP by the typical *story* and normal *laboratory* and imaging *findings* and started on quetiapine 300 mg/day and psychological therapy. On the third day, she exhibited a significant improvement in psychomotor activity and the medication was stopped. If the patient had similar complaints in the other menstrual cycles, the same treatment was planned. She has been regularly followed-up for four months, has not yet have a heavy attack requiring antipsychotics and continues to be free of psychotic symptoms with psychological therapy.

Discussion

The most common psychiatric disorders with psychotic features are schizophrenia, bipolar disorder, major depression, schizoaffective disorder (1). Autoimmune, endocrine, neurological and nutritional disorders are secondary medical conditions that can cause psychosis (3).

Relationship between psychosis and menstruation was first described in 1896 by Kraft-Ebing (4). The first symptoms usually occur after the menarche and may persist for several years, if left untreated. Single young women, mostly under the age of 20 and around the age of 16, with recurrent psychotic symptoms at any stage of the menstrual cycle have been reported (2, 5, 6). The pathogenesis isn't known but according to some reports, high levels of prolactin and LH and high estradiol/progesterone ratio may play a role (2, 6, 7). In our case, the hormone levels and estradiol/progesterone ratio were normal.

The diagnostic criterias for MRRP are; acute onset of psychotic symptoms (with, during or in the middle of menstrual bleeding in some cases), short-lasting attacks, asymptomatic period between the attacks. Clinical manifestations usually do not fit the definitions of functional psychoses, may be nonspesific and vary at every menstrual cycle (6). In our case, psychotic complaints started a few days before each menstrual period and disappeared after the menstruation.

In the differential diagnosis of subacute onset psychosis, oncologic reasons, Huntington disease, drug toxicity (such as dopamine agonists, heavy metals, thyroid hormones), infectious diseases (HIV, herpes simplex encephalitis, Lyme disease etc.), vitamin deficiencies (Vitamin B12 deficiency), metabolic diseases (Wilson's disease etc.), inflammatory and demyelinating diseases (Anti-NMDA receptor encephalitis, multiple sclerosis) should be considered (8, 9). The history of seizures, cerebrovascular disease, headaches, recent head injury, space-occupying lesions (tumors, cysts), stroke is important to rule out neurologic etiology (8). It is important to consider anti-NMDAR encephalitis within the differential diagnosis of psychosis associated with cognitive impairment even in those with an apparent previous psychiatric history and response to antipsychotics (10). In our case, all test results were normal. In addition, tumor markers assessment and imaging were normal to rule out a paraneoplastic form of autoimmune limbic encephalitis.

Some of the recommended treatments for MRSS are; estrogen, estrogen-progesterone or clomiphene, progesterone but all are off label use. There is no clear consensus on the use and duration of antipsychotic treatments (2). We think that antipsychotic treatments during attacks and psychological support may be useful. In our case, we used quetiapine and psychological support after the diagnosis. We continued the psychological support by planning antipsychotic

drugs only during psychotic attacks. She did not yet have a heavy attack requiring antipsychotics.

Conclusion

We present a patient with menstruation induced psychosis, due to its rarity. It is important to publish such cases in order to determine the actual incidence. Neurological examination of patients presenting with psychiatric symptoms is important but the relationship between the findings and menstrual cycle and history of spontaneous improvement after the period should be questioned.

References

1 *Griswold KS, Del Regno PA, Berger RC. Recognition and Differential Diagnosis of Psychosis in Primary Care. Am Fam Physician 2015 Jun; 91(12):856-63.*

2 *Brockıngton I. Menstrual psychosis. World Psychiatry 2005 Feb; 4(1): 9–17.*

3 *Freudenreich O. Differential diagnosis of psychotic symptoms: medical "mimics". Psychiatr Times 2010; 27(12):56-61.*

4 *Krafft-Ebing R. Psychosis Menstrualis. Eine klinisch-forensische Studie. Stuttgart: Enke, 1902.*

5 *Stein D, Hanukoglu A, Blank S, Elizur A. Cyclic psychosis associated with the menstrual cycle. Br J Psychiatry 1993; 163:824-28.*

6 *Brockington IF. Menstrual psychosis: a bipolar disorder with a link to the hypothalamus. Current psychiatry reports 2011; 13:193-7.*

7 *Berlin FS, Bergey GK, Money J. Priodic psychosis of puberty: a case report. Am J Psychiatry 1982; 139:119-20.*

8 *Levenson JL. Psychosis in the medically ill. Primary Psychiatry 2005;12(8):16-18.*

9 *Corrêa BB, Xavier M, Guimarães J. Association of Huntington's disease and schizophrenia-like psychosis in a Huntington's disease pedigree. Clin Pract Epidemiol Ment Health 2006; 2:1.*

10 *Hopkins SA, Moodley KK, Chan D. Autoimmune limbic encephalitis presenting as relapsing psychosis. BMJ Case Rep 2013 Aug 30;2013.*

FT43

Foreıgn Body Aspıratıon: Report of 5 Cases

Dr. İlknur Bodur, Dr. Betül Öztürk, Dr. Nilden Tuygun

** SBU Ankara Dr. Sami Ulus Obstetrics, Pediatrics Training and Research Hospital, Department of Pediatric Emergency, Ankara*

Aim:
Although foreign body aspirations are usually seen between 6 months and 4 years of age, they can be observed in children of any age. It is a preventable event that is dominant in preschool age. Symptoms and signs mimic respiratory diseases of the same age group. Foreign bodies may contain plant, mineral and chemical compounds. In general, free fatty acids of plants lead to mucosal blockage, significantly irritating the airway.
In the upper respiratory tract, the foreign body presents with acute respiratory distress and stridor. Lower airway obstruction may present with respiratory distress, wheezing and cough symptoms. In some cases, it may be asymptomatic. In this study, we present our experience in patients admitted to our pediatric emergency department for various reasons and diagnosed as foreign body aspiration.
Cases:
Between 01.11.2017-01.09.2019, The records of five cases who presented to the pediatric emergency department of Dr.Sami Ulus Obstetrics, Children's Health and Diseases Training and Research Hospital with cough and difficulty in breathing were diagnosed retrospectively. Complaints, diagnostic methods and clinical follow-up of the patients were evaluated.
The ages of the patients were 2 months, 9 months, 15 months, 30 months and 42 months. Four of the patients were male. The presenting complaints were cough, difficulty breathing, fever and bruising. Pulmonary radiographs of all cases were taken, right paracardiac infiltration was detected in two cases and bilateral paracardiac infiltration was found in one case. White cell elevation and acute phase reactant elevation were detected in two patients. The patients were transferred to the pediatric surgery department after the diagnosis, and they were referred to another center for bronchoscopy. Bronchoscopy was performed in 2 patients, one in the left main bronchus nuts, the other in the right main bronchus carrot fragments were removed. It was learned that no intervention was performed in two patients.A patient's information could not be reached.
Discussion:
Tracheobronchial foreign body aspiration is an important cause of morbidity and mortality in children. In addition to inadequate observation, the lack of posterior teeth in children and immature respiratory protection are important factors. Early diagnosis and appropriate treatment can prevent serious complications. Since the cases may present with different clinical picture, the diagnosis can be delayed or different diagnosis can be made. Foreign body aspiration should always be considered in persistent respiratory tract infections that do not respond to treatment.

Keywords: *Pediatric Emergency, Respiratory Distress, foreign body*

Yabancı Cisim Aspirasyonu: 5 Olgu Sunumu

Amaç:
Yabancı cisim aspirasyonları genelde 6 ay-4 yaş arasında görülebilmekle beraber her yaş çocukta gözlenebilir. Okul öncesi çağda baskın olan önlenebilir bir olaydır. Belirti ve

bulgular aynı yaş grubunda görülen solunum yolu hastalıklarını taklit eder.Yabancı cisimler bitki,mineral ve kimyasal bileşikler içerebilir. Genel olarak, bitkilerin serbest yağ asitleri önemli ölçüde hava yolunda tahriş, mukozal tıkanmaya yol açar.
Üst solunum yollarında yabancı cisim akut solunum sıkıntısı ve stridorla prezente olur. Alt hava yolu tıkanıklıklarında solunum sıkıntısı,wheezing,öksürük semptomları ile başvurabilir.Olguların bir kısmında ise asemptomatik seyredebilir. Bu çalışmada çocuk acil servisimize çeşitli sebeplerle başvuran ve yabancı cisim aspirasyonu tanısı alan hastalar ile ilgili deneyimlerimizi aktardık.

Olgular:

01.11.2017-01.09.2019 arasında SBÜ Dr. Sami Ulus Kadın Doğum, Çocuk Sağlığı ve Hastalıkları Eğitim ve Araştırma Hastanesi çocuk acil servisine öksürük ve nefes almada zorluk şikayetiyle başvuran ve yabancı cisim aspirasyonu tanısı alan 5 olgunun dosya kayıtları geriye dönük olarak incelendi. Hastaların başvuru yakınmaları, tanı yöntemleri, klinik izlemleri değerlendirildi.
Hastaların başvuru yaşları 2 ay , 9 ay, 15 ay ,30 ve 42 ay idi. Hastaların 4'ü erkekti. Başvuru yakınmaları öksürük,nefes almada zorluk,ateş ve morarma idi. Tüm olguların akciğer radyografileri çekildi,iki olguda sağ parakardiak ,bir olguda bilateral parakardiak infiltrasyon saptandı.2 olguda beyaz küre yüksekliği ve akut faz reaktanı yüksekliği saptandı. Hastalar tanı konulduktan sonra pediatrik cerrahi bölümüne devredilmiştir, hastalar bronkoskopi yapılması amacıyla başka bir merkeze yönlendirildi. Hastalardan 2'sine bronkoskopi yapıldığı, birinde sol ana bronştan fındık, diğerinde sağ ana bronştan havuç parçaları çıkarıldığı ,diğer iki hastaya herhangi bir girişim yapılmadığı öğrenildi.Bir hastanın bilgilerine ulaşılamadı.

Tartışma:

Trakeobronşiyal yabancı cisim aspirasyonu, çocuklarda önemli bir morbidite ve mortalite nedenidir. Yetersiz gözleme ek olarak çocuklarda posterior dişlerin gelişmemiş olması,solunum yolu korunmasının olgunlaşmamış olması önemli faktörlerdir.Erken tanı ve uygun tedavi ile ölümle sonuçlanabilecek ciddi komplikasyonlar önlenebilir. Olgular çok farklı klinik tablo ile başvurabildiğinden tanıda gecikme ya da farklı tanılar alabilmektedir. Tedaviye yanıt vermeyen ya da persistan solunum yolu enfeksiyonlarında mutlaka yabancı cisim aspirasyonu düşünülmelidir.

***Anahtar Kelimeler**: Çocuk Acil, Solunum Sıkıntısı,yabancı cisim*

Kaynaklar

1. *Foreign Body Aspiration in Infants and Older Children: A Comparative StudyShorook Na'ara, Igor Vainer, Moran Amit, and Arie Gordin, MD Ear, Nose & Throat Journal 1–5*
2. ***Indications** for **chest X-rays** in **children** and how to **obtain** and **interpret** them.*
Morgan H, Pettet G, Reed M, Prosad Paul S.
*Nurs **Child** Young People. 2018 Nov 8;30(6):30-37.*
3. *Tracheobronchial Foreign Bodies in Children: The Role of Emergency Rigid Bronchoscopy Aram Baram, MD, MRCSEd, FACS, AFSCTS, Hewa Sherzad, MD, Sara Saeed, MD, FKBMS, Fahmi H. Kakamad, MD, and Adnan M. H. Hamawandi, MD, CABP*
Global Pediatric Health Volume 4: 1 –6
4. *Foreign body aspiration in children with negative multi-detector Computed Tomography results: Own experience during 2011–2018 Weiling Qiu, Lei Wu, Zhimin Chen*
International Journal of Pediatric Otorhinolaryngology

FT44

A 12-Month-Old İnfant With İnvoluntary Movements During Enteral Vitamin B12 Treatment: Case Report

Umit GULTEKIN[1], Aysegul ZAIMOGLU[1], Huseyin TOKGOZ[2], Umran CALISKAN[2]

[1]Necmettin Erbakan University Meram Faculty of Medicine, Pediatrics Department, Konya, Turkey

[2]Necmettin Erbakan University Meram Faculty of Medicine, Pediatrics Department, Pediatric Hematology and Oncology, Konya, Turkey

Abstract:
Vitamin B12 (cobalamine) deficiency is one of the nutritional deficiencies in children. It can also be seen in infants whose mothers have nutritional deficiency. The involuntary movements is known to be associated with vitamin B12 deficiency. But also this type of movements can be seen in the patients who are on vitamin B12 tretament. We present a patient who had involuntary movements after enteral vitamin B12 treatment, on which reported cases are rarer than parenteral administration. We want to emphasize continuation of treatment is much more important than these involuntary movements observed temporarily.

Keywords: *enteral vitamin B12, involuntary movements, infant*

Introduciton:
Vitamin B12 deficiency can be seen in infants born from vegetarian or malnourished mothers, and those who have malabsorption or pernicious anemia. This deficiency may cause weakness, growth retardation, seizures, involuntary movements, tremors, nystagmus and restlessness in infants. Sometimes tremor may occur after enteral vitamin B12 treatment. Vitamin B12 deficiency can cause irreversible cognitive impairment if left untreated. Here is a case report of involuntary movements of the hands and fasciculation of the tongue during enteral vitamin B12 treatment.

Case report:
A 12-month-old girl was admitted to the pediatric nephrology outpatient clinic with the complaint of stones in both of her kidneys. When pancytopenia was seen in the complete blood count, she was referred to our hematology clinic. Although the case was one years old, she was only breastfed and also her mother was malnourished. She had weakness and paleness, malnutriationed and dehydrated appearance. She could not hold her head upright, could not sit without support, and had no emotional reaction, she also had poor eye contact. Body weight, height and head circumference were less than three percent. Other systemic examinations were unremarkable except for mildly bigger liver size.
Complete blood count was as follows: WBC: 3530 / mm³, ANS: 733 / mm³, Hb: 7 g / dL, MCV: 99.8, Plt: 91700 / mm³. Serum Fe: 145, Iron Binding Capacity: 40, Ferritin: 426 microgram / L. Vitamin B12 was very low at 46 pg / ml. Folic acid level: 10.6 micrograms / L was normal. Urine protein was negative and antigliadin panel was negative.
Peripheral blood smear showed macrocytosis and anisocytosis in erythrocytes, and neutrophils were hypersegmented. Because of pancytopenia, bone marrow aspiration was consistent with megaloblastic anemia and there was no malignant infiltration.
Enteral vitamin B12 treatment was initiated. After the initiation of vitamin B12 treatment, the patient had involuntary movements such as tremor in her hands and fasciculation in her

tongue. Brain CT was performed to rule out differential diagnosis. Accordingly with vitamin B12 deficiency the scan showed significant increase in frontoparietal atrophy and expansion in subarachnoid space. Electroencephalography was normal.
Clonazepam treatment was initiated, involuntary movements in the arms regressed and fasciculations improved during sleep. When clonazepam was discontinued, her complaints recurred again. Her treatment was planned to continue for a few weeks. During the follow-up, the patient's complaints regressed completely.

Discussion:
Vitamin B12 deficiency usually presents with neurological symptoms such as hypotonia, lethargy, involuntary movements, tremor; These symptoms may be permanent if left untreated until 12-18 months of age (1). These symptoms due to vitamin B12 deficiency may develop after vitamin B12 treatment (2). Vitamin B12 deficiency is seen in infants born from malnutrition or vegetarian mothers (3). Hematologic findings may vary from megaloblastic anemia to pancytopenia. Central imaging is associated with frontotemporoparietal atrophy. Although tremor and myoclonus are present, EEG may be impaired or normal as in our case. Clonazepam, piracetam, biperiden are preferred in the treatment.

Conclusion:
It is known that vitamin B12 deficiency in infants can cause irreversible cognitive impairment if left untreated. It is seen that involuntary movements that develop as a result of parenteral administration of cobalamin can also develop after enteral administration. It is aimed to emphasize once again that continuation of treatment is much more important than these involuntary movements observed temporarily, as the results of vitamin B12 deficiency are more catastrophic.

References:

1 *Demir N, Koc A, Üstyol L, Peker E, Abuhandan M. Clinical and neurological findings of severe vitamin B12 deficiency in infancy and importance of early diagnosis and treatment. J Paediatr Child Health. 2013 Oct;49(10):820-4. doi: 10.1111/jpc.12292. Epub 2013 Jun 18.*

2 *Ozdemir O, Baytan B, Gunes AM, Okan M. Involuntary movements during vitamin B12 treatment. J Child Neurol. 2010 Feb;25(2):227-30. doi: 10.1177/0883073809333528. Epub 2009 Jun 12.*

3 *Aguirre JA, Donato ML, Buscio M, Ceballos V, Armeno M, Aizpurúa L, Arpí L. [Serious neurological compromise due to vitamin B12 deficiency in infants of vegan and vegetarian mothers]. Arch Argent Pediatr. 2019 Aug 1;117(4):e420-e424. doi: 10.5546/aap.2019.e420. Spanish.*

FT45

Evaluation of Child Love Status of Nursing Third Grade Students

Hemşirelik Üçüncü Sınıf Öğrencilerinin Çocuk Sevme Durumlarının Değerlendirilmesi

Mehmet Alperen TURGUT[1], Selda BEŞİRİK[2]

[1]Karamanoğlu Mehmetbey University, Health Science Institute, Department of Nursing, Pediatric Nursing Program, Graduate Student, Karaman, Turkey.

[2]Karamanoğlu Mehmetbey University, Faculty of Health Science, Pediatric Nursing Department, Karaman, Turkey.

ÖZET

Amaç: Bu çalışma hemşirelik 3. sınıf öğrencilerinin çocuk sevme durumlarının değerlendirilmesi amacıyla planlandı.

Yöntem: Tanımlayıcı tipteki bu çalışma 2019 yılında bir üniversitenin Hemşirelik bölümünde 3. sınıfta öğrenim gören toplam 78 öğrenciyle yürütüldü. Öğrencilere literatür doğrultusunda hazırlanan anket formu ve "Barnett Çocuk Sevme Ölçeği" uygulandı. Elde edilen veriler IBM SPSS Statistics 21 (IBM SPSS, Türkiye) programında uygun istatistiksel yöntemler ile değerlendirildi.

Bulgular: Araştırmaya katılan öğrencilerin yaş ortalamalarının 21,54±1,44 (min=20, maks=27) olduğu, %76,9'unun (n=60) kız, %96,2' sinin (n=75) kardeş sahibi olduğu, %71,8'inin (n=56) daha önce çocuğa bakma deneyiminin olduğu, %65,4'ünün (n=51) hemşirelik bölümüne isteyerek geldiği, %71,8'inin (n=56) okuduğu bölümden memnun olduğu, %91'inin (n=71) pediatri dersini sevdiği, %89,7'sinin (n=70) çocukları sevdiği, %56,4'ünün (n=44) mezun olduktan sonra çocuk kliniklerinde çalışmayı istemediği, %84,6'sının (n=66) çocuk sağlığı ve hastalıkları ile ilgili yeterli bilgiye sahip olmadığı belirlendi. Kızların çocuk sevme ölçeğinden aldıkları puan ortalamalarının erkeklere oranla daha yüksek olduğu ancak farkın istatistiksel olarak anlamsız olduğu belirlendi ($p>0,05$). Çocuğa bakma deneyimi olanların, çocukları sevenlerin ve mezun olduktan sonra çocuk kliniğinde çalışmayı isteyenlerin çocuk sevme ölçeğinden aldıkları puan ortalamaların diğerlerine göre daha yüksek olduğu ve farkın istatistiksel olarak anlamlı olduğu belirlendi ($p<0,05$).

Sonuç: Öğrencilerin çocuk sevme puan ortalamalarının cinsiyet, çocuğa bakma deneyimi, çocukları sevme durumu ve mezun olduktan sonra çocuk kliniklerinde çalışmayı isteme durumlarından etkilendiği sonucuna ulaşıldı.

Anahtar Kelimeler: *Çocuk, çocuk sevme, hemşirelik öğrencileri*

Abstract

Aim: The aim of this study was to evaluate the level of child liking among nursing 3rd grade students.

Methods: This descriptive study was conducted in 2019 with a total of 78 students in the third year of nursing at a university. The questionnaire form and "Barnett Liking of Children Scale" prepared in accordance with the literature were applied to the students. The resulting data IBM SPSS Statistics 21 (IBM SPSS, Turkey) program was evaluated by statistical methods.

Results: The mean age of the students was 21,54±1,44 (min=20, max=27), 76,9% (n=60) were female and 96,2% (n=75) were siblings, 71,8% (n=56) had previous experience of caring for the child, 65,4% (n=51) willingly came to the nursing department, 71,8% (n=56),

91% (n=71) liked pediatrics, 89,7% (n=70) loved children, 56,4% (n=44) did not want to work in pediatric clinics after graduation. It was determined that 84,6 (n=66) did not have sufficient information about pediatric health and diseases. It was found that the mean scores of girls from child liking scale were higher than boys but the difference was not statistically significant ($p>0.05$). It was determined that the mean scores of those who had experience of caring for children, those who loved children, and those who wanted to work in the children's clinic after graduation were higher than the others and the difference was statistically significant ($p<0.05$).

Conclusion: It was concluded that the students' mean scores of love for children were affected by gender, experience of caring for children, love of children, and willingness to work in pediatric clinics after graduation.

Key Words: *Child, child liking, nursing student.*

Introduction

The concept of love is the basic element that should be among individuals. Adult individuals can satisfy their need for love and belonging as well as being part of a group. For children, this is met with direct affection and the family is the basis of this situation. To love a child must be in its purest form. Children should be treated with great care, respect and tolerance (1-3).

"A child needs understanding and love to develop his personality" It is one of the articles of the Declaration on the Rights of the Child. In case of any deviation from health, the pediatric nurse should be able to give adequate love. One of the characteristics of pediatric nurse is to love children. The pediatric nurse should be able to feel and love the children with gestures and facial expressions, behaviors and verbal expressions. There is no need for words to show love, a smile or a warm hug is enough for love. The pediatric nurse should be able to adapt to the physical, psychological and emotional aspects of the child's developing and changing structure and help the child to support these changes (4-7).

In order to make the approach of the 3rd grade students who take Child Health and Diseases Nursing course more effective in working situations in pediatric clinics after graduation, we need to know the love of child. The importance of a loving and positive approach to patients in pediatric clinics is known. For this reason, educating the students in this context, identifying and eliminating the factors that affect negatively will have beneficial results. Knowing the approach towards children and providing the necessary training will enable the development of better quality care. For this reason, it is very important to know what future nurses think and feel about children (8).

It is seen that the studies conducted in our country are mostly aimed at teacher candidates (9). Because the studies on behalf of nurses and nursing students are new and few number; the aim of this study was to evaluate the level of child liking among nursing 3rd grade students.

Methods

This study was designed as a descriptive study in order to evaluate the liking of children of health sciences students.

Sample: The population of the study consisted of 95 students studying in the third grade of the Nursing Department of the Faculty of Health Sciences of a state university in Karaman province. The sample of the study consisted of 78 students who took Child Health and Disease Nursing course between 11-15 March 2019, which is the date of data collection.

Data collection form: Data from the literature and in line questionnaire prepared by the researchers to the Pediatric Nursing Student "Barnett Liking of Children Scale" by applying collected.
Data collection: Data were collected in the classroom environment within the scope of Child Health and Diseases Nursing between 11-15.03.2019. The average duration of the survey was 20 minutes.
Data Collection Tools
Barnett Liking of Children Scale: It was developed by Barnett and Sinsi (10) to measure people's attitudes towards children. It is scored as "1=I disagree and 7=I completely agree" to in the scale prepared according to the seven-point likert system. The scale consists of 14 items. The total score that can be obtained from the scale is 14-98. The higher the total score, the higher the liking of children. Items 3, 6, 10 and 13 of the scale are scored inversely. Turkish validity and reliability of the scale was performed by 243 university students by Duyan and Gelbal. 14-38 points of the scale were evaluated as low, 39-74 points were rated as medium and 75-98 points were rated as high. The Cronbach alpha coefficient of the Turkish scale was 0,92 and the test-retest reliability coefficient was 0,85 (11).
Questionnaire Form: Students; age, sex, having siblings (if any), having the experience of caring for a child before, coming to the nursing department willingly, being satisfied with the department, loving the pediatrics course, loving children, wanting to work in pediatric clinics after graduation and related to child health and diseases, it consists of a total of 10 questions that question the status of having sufficient information.
Data Assessment: The data obtained were evaluated by number, percentage, mean, standard deviation, t test in SPSS 21 program.
Ethical Considerations: In order to conduct the research, the approval of the Ethics Committee numbered 08-2019/42 was obtained from the Non-Interventional Clinical Research Ethics Committee of the Faculty of Health Sciences of Karamanoğlu Mehmetbey University and the institution's permission was obtained from the university.

Results

The mean age of the students participating in the study was 21,54 ± 1,44 (min=20, max=27), 76,9% (n=60) were female and 96,2% (n=75) had siblings, 71,8% (n=56) had previous experience of caring for the child, 65,4% (n=51) willingly came to the nursing department, 71,8% (n=56) were satisfied with the department , 91% (n=71) loved pediatrics, 89,7% (n=70) loved children 56,4% (n=44) did not want to work in pediatric clinics after graduation, 84,6% (n=66) did not have sufficient information about child health and diseases (Table 1).
Table 2 shows the comparison of some characteristics of the students with the mean scores obtained from Liking of Children Scale. According to this; It was found that the mean scores of girls from Liking of Children Scale were higher than boys but the difference was not statistically significant ($p>0,05$). It was found that the mean scores of the children who had the experience of caring from the Liking of Children Scale were higher than those who had no experience of caring for the child and the difference was statistically significant ($p<0,05$). It was determined that the mean scores of the children who love children from the Liking of Children Scale were higher than those who did not, and the difference was statistically significant ($p>0,05$). It was determined that those who wanted to work in pediatric clinics after graduation had higher scores than the Liking of Children Scale and the difference was statistically significant.

Discussion

In this study conducted to evaluate the nursing students' liking children; It was determined that there was no statistically significant difference between the mean scores of child liking according to gender. However, it was found that the female liking scores of female students were higher than male students (Table 2). Baran and Yilmaz (12) study with nursing students, it was found that the students' love of child status according to their gender was not affected. In the study conducted by Duyan and Gelbal (11), it was observed that gender did not affect child loving status. Akgün Kostak (9), in study, found that female students' liking levels were higher than male students.

Nursing students who wanted to work in pediatric clinics were found to have a high level of child love. When other studies are examined, there are similar results. , Akgün Kostak (9) stated that nursing and midwifery students, Bektas et al. (8) nursing students and Altay and Kılıçarslan Törüner (13) nursing students have high level of child love.

Conclusion

As a result; The students' mean scores of Liking of Children are affected by gender, experience of caring for children, love of children, and willingness to work in pediatric clinics after graduation,

It was determined that girls had higher scores than those who had experience of caring for children, those who loved children, and those who wanted to work in pediatric clinics after graduation.

Acknowledgements: All authors have read the manuscript and approved the submission. There is no financial and material support should mention for this study.

Conflict of Interest: All authors declare that there is no conflict of interest for this study.

References

1 *Çay, Y., Şanal, M., Sınıf Öğretmeni Adaylarının Ve Sınıf Öğretmenlerinin Çocuk Sevme Düzeylerinin İncelenmesi. Uluslararası Türk Eğitim Bilimleri Dergisi 2016; 4(6) 135-142.*

2 *Kuşçu, Ö., Erbay, F., Acar, Ş., Gülnar, E. Okul Öncesi Öğretmen Adaylarının Öğretmenlik Mesleğine Yönelik Tutumlarının Çocuk Sevme Durumu Açısından İncelenmesi. Uluslararası Eğitim Bilimleri Dergisi/TheJournal of International Education Science,2015;3,114-122.*

3 *Megep (Mesleki Eğitim ve Öğretim Sisteminin Güçlendirilmesi Projesi) Çocuk Gelişimi ve Eğitimi Çocuğun Gelişimi, Ankara, 2009, 72-75.*

4 *Kostak, Akgün, M., Semerci, R., Kocaaslan, E, N. Hemşirelerin Çocuk Sevme Düzeyleri ve Çocuk Yetiştirme Tutumları. Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi 2017; 6(4): 146-155.*

5 *Uğurlu, T, C., Öğretmenlerin İletişim Becerisi Ve Empatik Eğilim Davranışlarının Çocuk Sevme Düzeyleri Üzerine Etkisi. Pegem Eğitim ve Öğretim Dergisi, 3(2), 2013, 51-61*

6 *Büyük, Tural, E., Rızalar, S., Seferoğlu, Güdek, E., Oğuzhan, Hanife., Çocuk ve Erişkin Kliniklerinde Çalışan Hemşirelerin Çocuk Sevme ve Çocuk Yetiştirme Tutumlarının İncelenmesi. The Journal of Pediatric Research 2014;1(3):130-7.*

7 *Erdem, Y., Duyan, V. A determination of the factors that affect the level of pediatric nurses' liking of children. Turk J Med Sci. 2011;41(2): 295-305.*

8 *Bektaş, M., Ayar, D., Bektaş, İ., Selekoğlu, Y., Akdeniz Kudubeş, A., & Sal Altan, S. Hemşirelik Öğrencilerinin Çocuk Sevme Durumlarını Etkileyen Faktörlerin Belirlenmesi. The Journal of Pediatric Research 2015; 2(1):37-41.*

9 *Kostak, Akgün, M. Hemşirelik ve Ebelik Öğrencilerinin Çocuk Sevme Durumları, Çocuk Sağlığı ve Hastalıkları Hemşireliği Dersinin Çocuk Sevme Durumlarına Etkisi ve Etkileyen Faktörler. Cumhuriyet Hemşirelik Dergisi 2013; 2(2):50-56.*

10 *Barnett, M. A., & Sinisi, C.S. The initial validation of a Liking of Children Scale. Journal of Personality Assessment 1990; 55:161-167.*

11 *Duyan, V.,Gelbal, S., Barnett Çocuk Sevme Ölçeği'ni Türkçeye Uyarlama Çalışması. Eğitim ve Bilim 2008; 33, 148.*

12 *Baran, G., & Yılmaz, G. Çocuk Sağlığı ve Hastalıkları Hemşireliği Dersinin Uygulamasına Çıkan Hemşirelik Öğrencilerinin Çocuk Sevme Durumları ve Etkileyen Faktörlerin İncelenmesi. JAREN 2019; 5(2):91-96.*

13 *Altay, N., & Kılıçarslan Törüner, E. Öğrenci hemşirelerin klinik stres yaşama ve çocuk sevme durumlarının belirlenmesi. DEUHYO 2014; 7(3), 166-170.*

Table 1. Demographic and some characteristics of students (N = 78)

Demographic characteristics	Number (%)
Gender	
Girl	60 (76,9)
Boy	18 (23,1)
Having siblings	
Yes	75 (96,2)
No	3 (3,8)
Previous care of the child	
Yes	56 (71,8)
No	22 (28,2)
Willing to come to the nursing department	
Yes	51 (65,4)
No	27 (34,6)
Satisfaction with the department	
Yes	56 (71,8)
No	22 (28,2)
The liking of pediatrics lesson	
Yes	71 (91)
No	7 (9)
The liking of children	
Yes	70 (89,7)
No	8(10,3)
Request to work in children's clinics after graduation	
Yes	34 (43,6)
No	44 (56,4)
To have sufficient information about child health and diseases	
Yes	12 (15,4)
No	66 (84,6)

Table 2. Comparison of Some Characteristics of Students with the Mean Score of Liking of Children Scale

Characteristic	Liking of Children Scale Ort±SS	MU	p
Gender			
Girl (60)	83,80±12,82	,670	,480
Boy (18)	81,44±13,92		
Child Care Experience			
Yes (56)	84,60±13,65	1,472	,33
No (22)	79,81±10,81		
Status Love for Children			
Yes (70)	85,98±9,88	6,954	,000
No (8)	59,37±13,38		
Characteristic	Liking of Children Scale Ort±SS	t	p
The Status of Willing to Work in Pediatric Clinics After Graduation			
Yes (34)	89,68±8,35	4,222	,000
No (44)	78,30±13,88		

FT46

Bölgemizde Kolesistit Tanısı Alan Çocuklarda Retrospektif Analiz

Ayşe Nur Uğur Kılınç[1], Zeynep Bayramoğlu[2]

ÖZET:

Giriş: Safra taşları, çocuklarda erişkinlerdeki kadar sık olmasa da son yıllarda görülme oranları giderek artmaktadır. Ultrasonografinin yaygın kullanımı, çocuklarda obezitenin artması ve yenidoğan yoğun bakım koşullarındaki iyileşme sonucunda çocuklarda safra yolu taşları ile daha sık karşılaşılmaktadır. Çalışmamızda, kolesistit tanısı alan çocuk olguları literatür eşliğinde değerlendirmeyi amaçladık.

Materyal ve Method: 2010 – 2019 tarihleri arasında hastanemizde kolesistektomi yapılan 106 çocuk olguda cinsiyet, yaş, laboratuvar sonuçları, etyoloji, görüntüleme bulguları, patolojik verileri geriye dönük olarak tarandı.

Bulgular: Kolesistektomi yapılan 106 olgunun (84 K, 22 E) yaş ortalaması 16 yıl (5 yıl- 18 yıl) idi. Bütün yaş gruplarında kız hastaların belirgin daha fazla olduğu saptandı. Hastaların 100 tanesi 10 yaşın üzerinde iken sadece 6 tanesi (5 K, 1E) 10 yaşın altındadır. Olguların yaklaşık yarısında (%45) başvuru sırasında transaminaz, bilirubin, amilaz, lipaz ve GGT değerlerinde yükseklik mevcuttur. Etyoloji araştırıldığında 71 olguda altta yatan risk faktörleri mevcut iken (%67), 35 olgu idiopatik olarak adlandırıldı. Etyolojide en belirgin olarak obezite (%22 oranında) mevcut iken daha sonra sırasıyla PCOS (Polikistik over sendromu) (%10), gebelik öyküsü (%7,5), hiperkolesterelomi (%5), hematolojik nedenler (%4), gelişme geriliği -malnütrisyon (%4) ve diğer nedenler bulunmaktadır. USG'de 2 Kist Hidatik ve 2 safra kesesi polip olgusu hariç bütün olgularda milimetrik taşlar mevcuttur. Obez hastaların yaklaşık yarısında USG'de (grade 1-3) hepatosteatoz eşlik etmektedir. Patolojik incelemede kolesistit tanısına ek olarak sekiz olguda kolesterolozis, iki olguda bilier intraepitelyal neoplazi grade 1 (BIL-IN 1) , bir olguda eozinofilik kolesistit tanıları mevcuttur.

Sonuç: Safra taşları, çocukluk çağında sıklığı artan bir patolojidir. Son yıllarda etyolojide hematolojik nedenlerin yanı sıra non hematolojik nedenler daha sık görülmektedir. Çalışmamızda adolesan dönemde, PCOS, kız cinsiyet, yaş, obezite ve erken yaşta gebeliğin safra taşı için daha belirgin bir risk oluşturduğu görülmüştür.

***Anahtar kelimeler**: Kolelitiazis, Çocuk, Obezite*

GİRİŞ

Safra taşları, çocuklarda erişkinlerdeki kadar sık olmasa da son yıllarda görülme oranları giderek artmaktadır. Ultrasonografinin yaygın kullanımı, çocuklarda obezitenin artması ve yenidoğan yoğun bakım koşullarındaki iyileşme sonucunda çocuklarda safra yolu taşları ile daha sık karşılaşılmaktadır. Çalışmamızda, kolesistit tanısı alan çocuk olguların risk faktörleri ile ilişkilerini değerlendirerek literatür eşliğinde değerlendirmeyi amaçladık.

BULGULAR

Hastanemizde (2010-2019) yılları arasında 0-18 yaş arası kolesistektomi yapılan 106 olgunun (84 K, 22 E) yaş ortalaması 16 yıl (5 yıl- 18 yıl) idi. (Şekil 2) Bütün yaş gruplarında kız hastaların belirgin daha fazla olduğu saptandı. Hastaların 101 tanesi 10 yaşın üzerinde iken sadece 5 tanesi (4 K, 1E) 10 yaşın altındadır. 10 yaş altı hastalarımızda etyolojik olarak

[1] Uzman Doktor, Konya Eğitim ve Araştırma Hastanesi Patoloji Bölümü
[2] Uzman Doktor, Konya Eğitim ve Araştırma Hastanesi Patoloji Bölümü

sebepler herediter sferositoz, hepatit, gelişme geriliği malnutrisyon, geçirilmiş apendektomi öyküsü ve bir çocukta idiopatiktir. Olguların yaklaşık yarısında (%45) başvuru sırasında transaminaz, bilirubin, amilaz, lipaz ve GGT değerlerinde yükseklik mevcuttur. Etyoloji araştırıldığında 71 olguda altta yatan risk faktörleri mevcut iken (%67), 35 olgu idiopatik olarak adlandırıldı. Etyolojide en belirgin olarak obezite (%22 oranında) mevcut iken daha sonra sırasıyla PCOS (Polikistik over sendromu) (%10), gebelik öyküsü (%7,5), hiperkolesterelomi (%5), hematolojik nedenler (%4), gelişme geriliği -malnütrisyon (%4) ve diğer nedenler bulunmaktadır.(Şekil 1)

USG'de 2 Kist Hidatik ve 2 safra kesesi polip olgusu hariç bütün olgularda milimetrik taşlar mevcuttur. Obez hastaların yaklaşık yarısında USG'de (grade 1-3) hepatosteatoz eşlik etmektedir. Patolojik incelemede kolesistit tanısına ek olarak sekiz olguda kolesterolozis, iki olguda bilier intraepitelyal neoplazi grade 1 (BIL-IN 1) , bir olguda eozinofilik kolesistit tanıları mevcuttur.

TARTIŞMA

Ultrasonografinin non invaziv ve eskiye göre kolay ulaşılabilir bir işlem olması nedeniyle çocuklarda kullanımının yaygınlaşması sonucu çocuklarda safra kesesi taşları görülme insidansı gittikçe artmaktadır. (1,2)

Safra taşı gelişiminde yaş önemli bir risk etmenidir ve tüm gruplarda yaşla birlikte sıklık artmaktadır. Çocuklarda da en sık ergenlik yaş grubunda görüldüğü ve kız cinsiyetin daha üstün olduğu bildirilmektedir .(3-5)

Pubertede, özellikle kolesterol taşı sıklığında belirgin artış görülmesine neden olarak östrojen ve progesteron düzeylerindeki artış gösterilmiştir.(6)

Bu hormonlardaki artışın safra stazını arttırdığı ve aşırı kolesterol yapımına yol açarak kolesterol ilişkili safra taşı oluşmuna yol açtığı düşünülmektedir. (7-8)

Bizim çalışmamızda da hasta sayısı daha büyük yaşlarda yoğundu ve belirgin kız cinsiyet üstünlüğü vardı olgularımızın %7 si yine östrojen progesteron artışına sebep olan gebelik ile ilişkiliydi. Literatürde çocuklarda daha önce çok bildirilmeyen ancak bizim serimizde belirgin oranda izlenen gebelik sonrası safra taşları ise bölgemizde daha fazla oranda gerçekleşen erken yaşta evlilikle ilişkilendirilebilir.

Literatür, fazla kilonun, safra taşı oluşumunda, kızlarda daha belirleyici bir risk faktörü olduğuna işaret etmektedir. (9)Bizim çalışmamızda bu açıdan literatür ile uyumlu olup en yüksek oranda risk faktörü olarak saptanmıştır.(grafik 1) erkek hastaların sadece 1 tanesi obezite ile ilişkili iken kızlarda bu oran %30 olarak saptanmıştır.

Çocuklarda safra taşı gelişiminde hemolitik hastalıklar, obezite, erken doğum, sepsis, TPN, KKKH, EBH, kısa bağırsak sendromu, geçirilmiş karın cerrahisi, kistik fibrozis, IgA eksikliği, Gilbert hastalığı ve özellikle diüretik ve seftriakson gibi ilaç kullanımları risk etmenleri olarak tanımlanmıştır. Safra taşları predispozan bir risk faktörüne bağlı oluşabileceği gibi idiyopatik de olabilirler .(1-3,10-12) İtalya'da yapılan çok merkezli bir çalışmada, safra kesesi taşlı hastaların %47,5'inde risk faktörü bildirilmiştir. (13) Hastalarımızın %67'sinde bir veya birkaç risk faktörü saptanmış olup, literatüre göre idiopatik oranı daha az bulunmuştur.

Hematolojik sebepler literatürde en sık sebep olarak belirtilirken bizim serimizde de 4 hastada (3 herediter sferositoz, 1 talasemi minör) literatüre göre biraz daha seyrek olarak olarak tespit edilmiştir.(%4). (14)Literatüre göre bizim serimizde bu oranın az olmasının sebebi bizim serimizde prepubertal hastaların az saptanması olarak düşünmekteyiz.

Serimizde belirgin oranda dikkat çeken (%10) ancak literatürde pek adı geçmeyen diğer bir risk faktörü ise PCOS 'dur. PCOS'un da eşlik eden morbiditilerden bir tanesinin de safra kesesi taşları olduğu bildirilmiştir. (15) Erkek hastaların 2 tanesinde sigara kullanımı öyküsü

saptanmıştır. Yine literatürde tütün kullanımının safra kesesi taşı riskini rölatif olarak arttırdığı tespit edilmiştir.(16) 15 Yaşında 1 hastada leishmaniazis saptanmıştır. Literatürde bir olguda leishmaniazis safra kesesi taşı ile ilişkilendirilmiştir.(17)

Yine serimizde 1'i erkek 4 hastada çölyak ve malnütrisyon mevcut olup literatürde malnütrisyon ile safra taşı ilişkisine rastlanmamıştır. Bununla ilgili açıklayıcı çalışmalara ihtiyaç vardır. Literatürde sık risk faktörlerinden belirtilen seftriakson kullanımına bizim serimizde rastlanılmamıştır.(18)

SONUÇ

Sonuç olarak Safra taşları, çocukluk çağında sıklığı artan bir patolojidir. Son yıllarda etyolojide hematolojik nedenlerin yanı sıra non hematolojik nedenler daha sık görülmektedir. Çalışmamızda adolesan dönemde, obezite, PCOS, kız cinsiyet, yaş ve erken yaşta gebeliğin safra taşı için daha belirgin bir risk oluşturduğu görülmüştür.

Referanslar

1- *Yılmaz A, Akçam M, Akıncı Ö, Karagüzel G, Artan R. Çocuklarda kolelitiyazis: Antalya yöresinde yedi yıllık deneyim. Selçuk Tıp Derg 2006; 22: 17-20.*

2- *Özkan T, Kılıç Ş, Tarım A, Tanrıtanır A, Özeke T. Çocukluk çağında kolelitiazis. Bursa Devlet Has Bült 1997; 13: 121-5.*

3. *Holcomb GW. Cholelithiasis in infants, children and adolescents. Pediatr Rev 1991; 11: 268-74. (Abstract) / (PDF)*

4. *Della Corte C, Falchetti D, Nebbia G, et al. Management of cholelithiasis in Italian children: a national multicenter study World J Gastroenterol 2008; 14: 1383-8. (Abstract) / (Full Text) / (PDF*

5. *Reif S, Sloven DG, Lebenthal E. Gallstones in children. Characterization by age, etiology, and outcome. Am J Dis Child 1991; 145: 105-8. (Abstract) / (Full Text)*

6- *Von Bergmann K, Becker M, Leiss O. Biliary cholesterol saturation in nonobese women and nonobese men before and after puberty. Eur J Clin Inv 1986;16:531535.*

7. *Graf GA, Li WP, Gerard RD, et al. Coexpression of ATP-binding cassette proteins ABCG5 and ABCG8 permits their transport to the apical surface. J Clin Invest 2002; 110: 659-69. (Abstract) / (Full Text) / (PDF)*

8. *Holzbach R, Busch N. Nucleation and growth of cholesterol crystals. Gastroenterol Clin North Am 1991; 20:67-84. (Abstract)*

9. *Lai SW, Muo CH, Liao KF, et al. Risk of acute pancreatitis in type 2 diabetes and risk reduction on antidiabetic drugs: a population-based cohort study in Taiwan. Am J Gastroenterol 2011;106:1697-1704. PMID: 21577242 https://doi.org/10.1038/ajg.2011.155*

10. *Gilger MA. Diseases of the gallbladder. In: Wyllie R, Hyams JS (eds). Pediatric Gastrointestinal Disease. 2. ed. Philedelphia: W.B Sounders Company,.1999; 651-62*

11. *Wesdorp I, Bosman D, de Graaff A, Aronson D, van der Blij F, Taminiau J. Clinical presentations and predisposing factors of cholelithiasis and sludge in children. J Pediatr Gastroenterol Nutr 2000; 31: 411-7. (Abstract) / (Full Text) / (PDF)*

12. *Herzog D. Bouchard G. High rate of complicated idiyopathic gallstone disease in pediatric patients of a North American tertiary care center. World J Gastroenterol 2008; 14: 1544-8. (Abstract) / (Full Text) / (PDF)*

13- *Corte DC, Falchetti D, Nebbia G, et al. Management of cholelithiasis in Italian children: a national multicenter study. World J Gastroenterol 2008;14:1383-138*

14- *Aydın, Ç., Kırıştıoğlu, İ., & Doğruyol, H. Çocuklarda safra kesesi taşı: Klinik ve cerrahi bulguların değerlendirilmesi. Çocuk Cerrahisi Dergisi, 30(3), 119-127. https://doi.org/10.3748/wjg.14.138*

15- *Glintborg, D., & Andersen, M. (2017). Medical comorbidity in polycystic ovary syndrome with special focus on cardiometabolic, autoimmune, hepatic and cancer diseases: an updated review. Current Opinion in Obstetrics and Gynecology, 29(6), 390-396.*

16- *Aune D, Vatten LJ, Boffetta P. Tobacco smoking and the risk of gallbladder disease. Eur J Epidemiol. 2016 Jul;31(7):643-53. doi: 10.1007/s10654-016-0124-z. Epub 2016 Feb 22. PMID: 26898907; PMCID: PMC4977331.*

17- *Kafetzis, Dimitris A. "An overview of paediatric leishmaniasis." Journal of postgraduate medicine 49.1 (2003): 31.*

18- *Tuna Kırsaclıoglu C, et al. Risk factors, complications and outcome of cholelithiasis in children: A retrospective, single-centre review. Journal of paediatrics and child health, 2016, 52.10: 944-949.*

Şekil 1 Safra kesesi taşlarında risk faktörleri

Şekil 2 Kolelitiaziste cinsiyete göre yaş dağılımları

FT47

Hınman Syndrome: Insıdıous Course of Chronıc Kidney Dısease

Zehra Nihan COŞKUN[1], Bülent ATAŞ[2]

[1]Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi, Çocuk Sağlığı ve Hastalıkları Anabilim Dalı, Konya

[2]Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi, Çocuk Nefroloji Bilim Dalı, Konya

ABSTRACT

Introduction: Hinman syndrome (non-neurogenic neurogenic bladder); is a severe voiding dysfunction that significantly affects the upper urinary tract due to the discordance between detrusor contraction and sphincter relaxation without neurological dysfunction. Typically, patients have incomplete bladder emptying and chronic urinary retention, urinary incontinence, day and night urinary incontinence, fecal retention, recurrent urinary tract infections, and renal dysfunction. Typically, patients have incomplete bladder emptying and chronic urinary retention, urinary incontinence, day and night urinary incontinence, fecal retention, recurrent urinary tract infections, and renal dysfunction. In this article, two cases followed up in pediatric nephrology clinic due to chronic kidney disease caused by Hinman syndrome are discussed.

Cases: The first case; a 12-year-old female patient presented to our pediatric nephrology clinic with complaints of sudden urination and urinary incontinence for three months. At the time of admission GFR was calculated as 23.7 ml / min / 1.73m2 and bilateral hydronephrosis, bladder trabeculations and high detrusor pressure (51 cm / H2O) were determined. The second case; an 11-year-old male patient was presented to our clinic with the complaint of long-standing urinary urgency and daytime urinary incontinence. According to examinations GFR was found to be 34.5 ml / min / 1.73m2 and severe hydronephrosis on the right, diverticula in the bladder and high detrusor pressure (49 cm / H2O) were detected. Spinal magnetic resonance imaging was found to be normal in both cases and the cases were evaluated as chronic kidney disease developing because of Hinman syndrome.

Conclusion: Bladder-sphincter coordination disorder can cause damage to the bladder and upper urinary tract, leading to the development of neurogenic bladder and chronic kidney disease when early diagnosis and effective treatment is not applied. Families and clinicians should be aware that urinary urgency and day and night urinary incontinence are not benign in every child, and they should be aware that it can have very serious consequences. Clinicians should keep this syndrome in mind in order to recognize the preventable cause of chronic kidney disease such as Hinman syndrome early.

Keywords: *Hinman syndrome, nonneurogenic neurogenic bladder, incontinence, chronic kidney disease*

ÖZET

Giriş: Hinman sendromu (nonnörojenik nörojenik mesane); nörolojik işlev bozukluğu olmaksızın detrüsör kasılması ve sfinkter gevşemesi arasındaki uyumsuzluk nedeniyle gelişen, üst üriner sistemi önemli derecede etkileyen ciddi işeme disfonksiyonudur. Tipik olarak hastalarda mesanenin tam boşalamaması ve kronik idrar retansiyonu, sıkışma bulguları,

gece ve gündüz üriner inkontinans, fekal retansiyon, tekrarlayan idrar yolu enfeksiyonları ve böbrek fonksiyon bozuklukları görülür. Semptomlar ve radyolojik bulgular nörojenik mesanesi olan çocuklarla benzer olmasına rağmen Hinman sendromlu hastalarda, spinal nörolojik muayene ve manyetik rezonans görüntülemeleri normaldir. Bu yazıda Hinman sendromu sonucu gelişen kronik böbrek hastalığı nedeni ile çocuk nefroloji kliniğinde izlenen iki olgudan bahsedilmiştir.

Olgular: Birinci olgu; on iki yaşında kız hasta, üç aydır ani idrara sıkışma ve gece idrar kaçırma şikayeti ile çocuk nefroloji kliniğimize başvurdu. Yapılan incelemelerde başvuru anında GFR 23,7 ml/dk/1,73m^2 olarak hesaplandı, bilateral hidronefroz, mesanede trabekülasyonlar ve yüksek detrüsör basıncı (51 cm/H_2O) tespit edildi. İkinci olgu; on bir yaşında erkek hasta, uzun süredir devam eden ani idrara sıkışma ve gündüz idrar kaçırma şikayeti ile kliniğimize başvurdu. Tetkikler sonucu GFR 34,5 ml/dk/1,73m^2 bulundu, sağda ağır hidronefroz, mesanede divertiküller ve yüksek detrüsör basıncı (49 cm/H_2O) tespit edildi. Her iki olgunun da spinal manyetik rezonans görüntülemeleri normal bulundu ve olgular Hinman sendromu sonucu gelişen kronik böbrek hastalığı olarak değerlendirildi.

Sonuç: Mesane-sfinkter koordinasyon bozukluğuna, erken tanı konulup etkin tedavi uygulanmadığında; mesane ve üst üriner sistemde hasara neden olarak nörojenik mesane ve kronik böbrek hastalığı gelişimine yol açabilir. Aileler ve klinisyenler; sıkışma ve gece-gündüz idrar kaçırmanın her çocukta iyi huylu bir durum olmadığının bilincinde olmalıdırlar ve çok ciddi sonuçlara yol açabileceğinin farkında olmalıdırlar. Hinman sendromu gibi kronik böbrek hastalığının önlenebilir sebebini erken tanıyabilmek için klinisyenler bu sendromu akılda tutmalıdırlar.

Anahtar sözcükler: *Hinman sendromu, nonnörojenik nörojenik mesane, inkontinans, kronik böbrek hastalığı*

INTRODUCTION

In 1971 Frank Hinman and Franz Baumann; described Hinman syndrome (HS) as a condition that is not associated with any neurological lesion and that the bladder does not fully discharge as a result of narrowing of the external urethral sphincter due to coordination disorder between sympathetic and parasympathetic activity (1,2). Initially, these patients were evaluated as neurogenic bladder dysfunction because of having unilateral or bilateral hydronephrosis, vesicoureteral reflux and irregularly shaped trabeculated bladder, but imaging of the central nervous system and spinal cord was normal. when these patients voluntarily urinate, their failure to relax the sphincter muscles causes changes in bladder wall thickness, vesicoureteral reflux, and progressive hydroureteronephrosis (3). As a result of detrusor decompensation, patients may have signs of urgency, day and / or night incontinence, chronic urinary retention, recurrent urinary tract infection, renal scarring and early age chronic kidney disease. It has been shown that especially children who have incontinence during daytime and who exert external urethral sphincter muscle to prevent this leakage have excessive detrusor activity (4).

The aim of treatment in Hinman syndrome (HS) is the protection of the upper urinary tract and the prevention of renal damage. Early diagnosis and prevention methods are the basis of success in treatment. In the early stages of the disease; bladder education, psychological support and clean intermittent catheterization are recommended as conservative treatment methods. Today, anticholinergic drugs ocnstipation is not recommended because of increasing intestinal constipation, increasing residual urine volume and causing urinary tract infections except for children who miss urine during daytime as a result of bladder

overactivity. Invasive procedures such as botox injection into the external urethral sphincter have been described in the literature. If kidney damage has developed; instead of conservative methods, patients should be managed with surgical methods that protect kidney function and prevent the progression of damage (5).

CASE 1

A 12-year-old female patient presented to our clinic with complaints of sudden urination and urinary incontinence. There was no consanguinity between the parents and no genetic disease in the family.

The patient, who had no known disease before, started to have urinary incontinence three months ago. There was no urinary incontinence or stool incontinence during the day, but she had had urinary urgency since the beginnig of her childhood. He completed toilet training at the age of three. On physical examination, the patient was pale and her body weight was 3 percentile below the normal value. Blood pressure was measured as 120/75 mmHg. Other system examinations were normal. Anemia (Hb: 8.5 g / dL), metabolic acidosis (pH: 7.30 and bicarbonate: 19 mmol / L) were observed. GFR was found to be 23.7 ml / min / 1.73m2 and chronic kidney disease was detected. Bilateral renal enlargement and hydroureteronephrosis and trabeculation in the bladder are observed in Abdominal ultrasonography. Increased bilateral renal size, more severe on the left, and bilateral severe hydroureteronephrosis are detected in MR pyelography (figure 1). Voiding cystoureterography showed mild irregularities in the bladder contours and diverticulas was partly observed. The capacity was normal (figure 2). Vertebras and spinal cord were normal in magnetic resonance imaging.After high detrusor pressure (51 cm / H2O) and dissynergy between detrusor and external urethral sphincter were detected in urodynamic study, the patient was diagnosed as Hinman Syndrome. He had no complaints related to gastrointestinal retention. Phenotype was normal and the family did not have any genetic kidney disease. Family education, voiding recommendations, clean intermittent catheterization, pediatric urology follow-up and antibiotic prophylaxis for the prevention of renal damage in the long term were started. The patient is being followed up in our clinic because of chronic kidney disease as a result of Hinman syndrome.

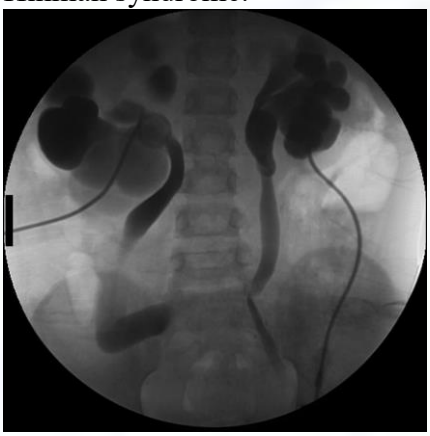


Figure 1. MR pyelography: Bilateral increase in renal size and hydroureteronephrosis

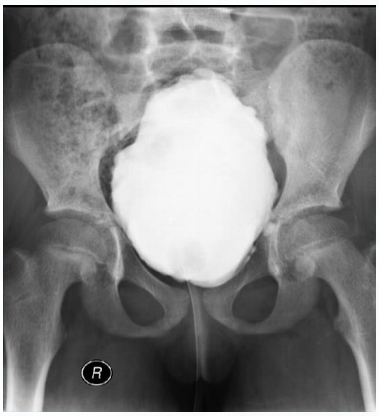


Figure 2. Voiding cystoureterography: Irregularity and diverticulas in some parts in bladder contours Voiding cystoureterography

CASE 2

An eleven-year-old mentally retarded male patient presented to our clinic with complaints of daytime incontinence, urgency symptoms and intermittent urination since his childhood. There was no urinary incontinenceor no constipation. Toilet training could not be completed. She had febrile convulsions in the newborn period. There was no consanguinity between the parents and no genetic disease in the family. When the patient was four years old, she had undergone three surgical operations through the urinary system due to recurrent urinary tract infection, right vesicoureteral reflux, and left ureterovesical stenosis. He was still having urinary incontinence during daytime. On physical examination, the patient was mentally retarded and her body weight was 3 percentile below normal value. Blood pressure was measured as 120/80 mmHg. Other system examinations were normal. GFR was found to be 34.5 ml / min / 1.73m2 and chronic kidney disease was detected. Abdominal ultrasonography showed severe hydroureteronephrosis in the right kidney; atrophy was seen in the left kidney. The bladder wall was thick and trabecular in appearance. Voiding cystoureterography showed right grade 5 VUR, mild irregularity in the bladder, and diveticules (figure 3). Vertebras and spinal cord were normal in magnetic resonance imaging. In urodynamic study, high detrusor pressure (49 cm / H2O) and dissynergy between detrusor and external urethral sphincter were detected and the patient was diagnosed as Hinman Syndrome. He had no complaints related to gastrointestinal retention. Phenotype was normal and the family did not have any genetic kidney disease. Family education, voiding recommendations, clean intermittent catheterization, pediatric urology follow-up and antibiotic prophylaxis for the prevention of renal damage in the long term were started. The patient is being followed up in our clinic because of chronic kidney disease as a result of Hinman syndrome.

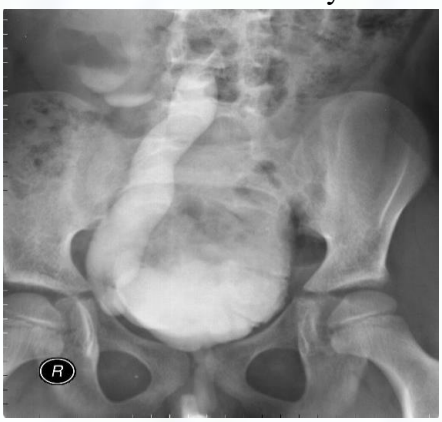


Figure 3. Voiding cystoureterography showed mild irregularity in the bladder, right grade 5 VUR

ARGUMENT

HS is a severe voiding dysfunction that affects the upper urinary tract with bladder dysfunction in the absence of a neurological abnormality (6). Hinman syndrome is a functional bladder outlet obstruction due to detrusor-sphincter dyssynergia, and these children typically experience intermittent voiding, day and night incontenence, recurrent urinary tract infections, constipation and encopresis.The patients often have vesicoureteral reflux, trabecular bladder, and decreased urinary flow rate. In severe cases, hydronephrosis, renal damage and end-stage renal disease may occur. Urodynamic studies and MRI of the spine are required to exclude neurological causes of bladder dysfunction (7). The main objective is to protect the upper urinary tract and prevent progressive renal damage. Bladder training, transient suprapubic catheters, clean intermittent catheterization, drug therapy, and psychotherapy can prevent serious kidney damage and stabilize renal function. Urinary retention, urinary incontinence dysfunction, high detrusor pressure, bladder diverticulum, vesicoureteral reflux, renal damage and chronic kidney disease developed in both cases without any neurological disorder. During our follow-up, antibiotic prophylaxis was given and clean intermittent catheterization was performed to prevent recurrent urinary tract infections and to reduce renal damage and to postpone the progress of chronic kidney disease.

CONCLUSION

Hinman syndrome is a rare but more serious condition among voiding disorders. This detrusor-sphincter mismatch causes upper urinary tract damage and, therefore, chronic kidney disease if not diagnosed and treated early. Clinicians should be able to recognize the preventable cause of chronic kidney disease such as Hinman syndrome early; they should be aware that incontinence is not always innocent, and this syndrome should be kept in mind when evaluating patients. In this article, it is aimed to emphasize the importance of careful examination and follow-up of patients presenting with urinary incontinence.

References

1. *Hinman F, Bauman FW (1973) Vesical and ureteral damage from voiding dysfunction in boys without neurologic or obstructive disease. J Urol 109:727–732*
2. *Rashid S,Waqar M, Khawaja AA, Arshad MS, SarwarMK (2011) Efficacy of transcutaneous nerve stimulation (TENS) therapy in overactive non-neurogenic neurogenic bladder (Hinman's syndrome). Pak J Med Sci 27:528–532*
3. *Allen TD: The non-neurogenic neurogenic bladder. J Urol 1977; 117: 232.*
4. *McGuire EJ, Savastano JA (1984) Urodynamic studies in enuresis and the nonneurogenic neurogenic bladder. J Urol 132:299–302*
5. *Yılmaz AÇ, Buyukkaragoz B, Kivilcim S, Tayfur AC, Gunbey S. An adolescent boy progressing insidiously to end-stage renal disease: Answers. Pediatr Nephrol.2018 Mar;33(3):429-431. Epub 2017 Jun 19. PubMed PMID: 28631041.*
6. *Van Gool J, Tanagho EA. External sphincter activity and recurrent urinary tract infection in girls. Urology. 1977;10:348–53.*
7. *Robert M. Kliegman, Bonita F. Stanton, Nina F. Schor, Joseph W. St Geme Nelson Textbook of Pediatrics, 20th Edition Elsevier Inc, 1600 John F. Kennedy Blvd. Ste. 1800 Philadelphia, PA 19103-2899, p2583, 2016*

FT48

The Effects of Mothers' Anxiety and Depression on Sleep Habits of 0-3 Month's Old Infants

(0-3 Aylık Bebeklerde Uyku Alışkanlığı Ile Anne Anksiyete Ve Depresyonunun Bebeğin Uykusuna Etkisi)

*Meliha Sevim[*1],Ufuk Beyazova[*2], Enes Ahmet Güven[*3], Aysu Duyan Çamurdan[*4]*

*Ankara Eğitim Araştırma Hastanesi[*1],*

*Gazi Üniversitesi Hastanesi[*2],*

Aim: This study aimed to explain infants' sleep habits and investigate the factors that may affect their sleep in the first three months after they were born.
Methods: Infants that were born between 29/10/2014-30/11/2014 dates at Department of Gynecology and Obstetrics were recruited for this study. The mothers of the infants were interviewed face to face within the three days after birth. "Baby sleep evaluation questionnaire" was filled and Edinburgh Postnatal Depression and Beck Anxiety Scale were filled out by the mothers. "Baby sleep evaluation questionnaires" and scales were applied monthly.
Results: The study included 70 infants. Average sleep duration of one month old infants was found to be 14±2.3 hours while daily average sleep duration of three month old infants was 13.7 ±2 hours. Total sleep duration of infants was in a decreasing trend from birth till the end of the 3rd month.
A significant relation was found between the mothers' anxiety and the infants' sleep quality in the second month, but not in the first or the third month ($p<.05$). Factors such as using a pacifier, nasal obstruction, sleep position, nurse availability or sex had no effect on mother's opinion about the baby's sleep, sleep duration, waking frequency and night time falling asleep duration.
Conclusion: Poor sleep quality reported by mothers decreases towards the third month. There is a significant relation between the mothers' anxiety and the infants' sleep quality in the second month in contrast to the first and the third month ($p<.05$).

Özet
Amaç: Çalışmamızda yaşamın ilk üç ayındaki uyku alışkanlıklarını açıklamak ve bu uyku alışkanlıklarını etkileyebilecek faktörleri araştırmak amaçlanmıştır.
Metot: Çalışmamızda 29/10/2014-30/11/2014 tarihleri arasında Kadın Doğum Servisi'nde doğan bebeklerin uyku alışkanlıkları değerlendirilmiştir. Bebeklerin uyku durumlarının değerlendirilmesi için doğumdan sonraki ilk 3 gün içinde taburcu olmadan hemen önce annelerle yüz yüze görüşülerek "bebek uyku değerlendirme anketi" doldurulmuş ve Edinburgh Postnatal Depresyon Ölçeği ile Beck Anksiyete Ölçeği yapılmıştır. "Bebek uyku değerlendirme anketi" ve ölçekler 3 ay boyunca aylık tekrarlanmıştır.
Bulgular: Çalışma 70 hasta ile yapılmıştır. Çalışmada yer alan bebeklerin günlük uyku süresi 1. ayda ortalama 14±2.3 saat iken 3. ayda 13.7 ±2 saate gerilemiştir. Bebeklerin günlük toplam uyku süresi doğumdan 3. ayın sonuna kadar azalma eğilimindedir. Annelerin anksiyeteleri ile ikinci aydaki bebeklerin uyku kalitesi arasında anlamlı bir ilişki bulunmuştur ($p<.05$), ancak aynı ilişki birinci veya üçüncü ayda bulunamamıştır.
Bebeklerin gece, gündüz ve toplam uyku süreleri ve gece uykuya dalma süreleri bebeğin cinsiyetine, bebeğin bakımına yardım eden kişinin varlığına, emzik kullanma durumuna, burun tıkanıklığına, bebeğin yatış pozisyonuna göre farklılık göstermemiştir.

Sonuç: Anneler tarafından bildirilen düşük uyku kalitesi üçüncü aya doğru düşmektedir. Annelerin anksiyetesi ile bebeklerin uyku kalitesi arasında ikinci ayda birinci ve üçüncü ayın aksine anlamlı bir ilişki vardır (p <.05).
Key words: *infant, sleep habits, 0-3 months old, anxiety, maternal depression*

Anahtar kelimeler: *bebek, uyku alışkanlığı, 0-3 aylık bebek, anksiyete, anne depresyonu*

Introduction

Sleep and related issues are crucially important for subject's quality of life (1). Irregular sleep habits and short sleep duration during infancy affect infant's physical, mental and social integrity negatively (2). The aim of this study was to evaluate sleep habits in the first three months of life and to examine affecting factors and identify affecting factors related to the mother or the environment before the sleep problem occurs. Whether post-partum depression and anxiety have an impact on sleep habits of the infants was also examined.

Methods

The present study evaluated the sleep habits of the infants that were born in the Obstetrics and Gynecology Department during a month's period. The study was started with 102 mother-infant pairs. Two infants who were hospitalized during the study period were excluded. 4 mother-infant pairs who participated in the study were excluded due to mothers' inability to collect data. 26 mothers were excluded from the study because they could not be contacted again and the study was completed with a total of 70 mother-infant pairs.

Survey

In order to examine the infants' sleep, the mothers were interviewed face to face to fill up the "infant sleep evaluation questionnaire" during the first three days after birth. The questionnaire includes questions about infants' sleep and mothers' opinions on the infant's sleep. A "sleep diary" was given to the mothers to keep a log during a day period in every week of each month. At the end of each month, the mothers were interviewed to fill up "infant sleep evaluation questionnaire", Edinburgh Depression Scale and Beck Anxiety Inventory. The data were gathered until the end of three months.

Statistical Analysis

All statistical data were analyzed using the Statistical Package for the Social Sciences Program, SPSS 15.00. Descriptive statistics were given as mean numeric values (±) standard deviations, median (min; max), frequency distribution and percentages (%). For statistical analysis, Pearson's Chi Square Test and Yates' Correction Chi Square Test were utilized for categorical variables. In the analysis in which the variables were used as dependent variables, Mann-Whitney U test or Student-T test were used according to the data distribution's correspondence to normal distribution. As the data on sleep duration and waking up numbers were calculated for three times, Analysis of Variance was used in repeated measures. Statistical significance was determined as $p<0.05$.

Results

This study included 70 infants, 37 (53%) boys and 33 (47%) girls. 45.7% of infants had no other siblings, 38.6% had one sibling, and 15.7% had two or more siblings. (see Table 1).

Table 1 here

While the daily sleep duration of the infants in the study group was 14 ± 2.4 hours during the first and second months, it dropped to 13.7 ± 2.0 hours in the third month. While daytime

sleep duration was 6.8 ± 1.3 hours in the first month and it dropped to 6.0 ± 1.5 hours in the third month (p=0.047). Night time sleep duration increased from 7.3 ± 1.4 hours in the first month to 8.0 ± 1.3 hours in the third month (p=0.040) (see Table 2).
Table 2 here
On the average nighttime waking frequency (20:00-08:00) was 3.5 times during the first three months, while daytime waking frequency was 4.5 times and total waking frequency was 8 times daily.
Most of the three-day old infants (70%) fell asleep in not more than 15 minutes, this duration increased in one-month old infants (58%) and it decreased again in the following months. While the decrease in the falling asleep duration in the second or third months was found to be statistically significant (p=.007, p= .002, respectively), the increase in the first month was found to be insignificant.
The number of depressed or anxious mothers was found to decrease towards the 3rd month (see Table 3).
Table 3 here
Day time sleep duration of the infants born to depressive mothers was shorter in the first month (p=.02). For the other months, depression was found to have no effects on infants' day time sleep duration (p>.05) (see Table 4) In addition, night waking frequency was higher in infants whose mothers were in depression in the second month (p=.008). Same relation was not found in the other months. There was no association between mother's depression and the infants' night time falling asleep duration (p>.05).
Table 4 here
Although there was a significant relationship between the mothers' anxiety and the mothers' comments on the infants' sleep quality in the second month (p=.01), no significant relationship was found on the third day and in the first and third months (p>.05) (see table 5). No significant relationship was found between mother's anxiety and infants' total night time and day time sleep duration (p>.05).
Table 5 here

Discussion

In the present study, sleep habits during the first three months of life of 70 infants were examined. Mothers' reports of poor sleep quality in infants' decreases towards the third month. There is a significant relation between the mothers' anxiety and the infants' sleep quality in the second month in contrast to the first and the third month (p<.05).
Anxiety and depression are frequent among pregnant and postpartum women (3,4). A meta-analysis that includes 59 studies and 12000 women reported the rate of postpartum depression during the first two months after birth as 13% (5). In Turkey, the rate of postpartum depression varies between 9% and 30% according to various studies (6,7,8,9,10). In our study, while the rate of depression was found as 25.7% on the first days after birth, this rate decreased to 8.6% in the following months. The rate of anxiety was found 11.1% in a study conducted by Reck et al. with 1024 women in Germany during the first three months in postpartum period (11). In our study, the rate of anxiety was found to be 25.7% in the first three postpartum months. The high rate of anxiety on the first days decreased when the mothers got used to the presence and demands of baby.
In general, it is accepted that there is a relationship between postnatal depression of the mother and infant's sleep problem. It may be speculated that the mothers of the infants who have sleep problems may have depression or anxiety or the mothers who have anxiety may characterize infants' sleep as more problematic. Some studies have shown that the frequency

of depression or anxiety decreased by increasing sleep duration of the infants thanks to the parent-based sleep education (12,13,14).

Although infants' total sleep duration tended to decrease with age in the first three months, it was 14 hours on the average and night time sleep was longer than day time sleep in general. This finding is consistent with the results of other studies. In a meta-analysis of the studies that were conducted in various countries, Galland et al. reported it as 14.6 and 13.6 hours in 2 months old and 3 months old infants, respectively (15). Sadeh et al. conducted an interview with 5006 parents in Canada and reported that the total daily sleep duration decreased with age and night time sleep got longer (16).

Waking frequencies of the infants were 8 times a day- 3.5 times at night and 4.5 times during day time on average. Mickelson et al. reported that the rate of 6 hours long night wakeless sleep was 35% in the infants younger than 3 months of age and it increased with age (17). Sette et al. reported that 56.4% of 3 month old infants wake up two or three times, and 8.8% of infants wake up three or more times at night, also 34.8% of infant don't wake up at night (18). The study conducted by Sadeh et al. showed that average night time waking frequency was 1.89 in 0-2 month-old infants (16).

In our study, waking frequency of the infants was rather high. A study that compared different societies asserted that wakeless sleep was less common when the infants sleep in their parents' room compared to sleeping in separate rooms (19). Araz et al. conducted a study in the southeastern Turkey and showed that 56% of the 0-6 month old infants sleep in the same room with their parents and 68.6% of them wake up frequently at night (20). The rate of mothers who perceived a sleep problem in their infants dropped from 40% in the first month to 17% in the third month. The numbers of bad nights decreased gradually. This progress in sleep may be attributed to the mothers' gaining experience and the infants' growing up.

Conclusion

In the present study, infant sleep was examined during the first three months of life. The sample size was relatively small. For these reasons, some tendencies about infants' sleep are striking, but their statistical significance do not exist. Further studies are needed including a large sample size and a longer follow up in Turkey.

References

1. *Özgen F, Uyku ve uyku bozuklukları. Psikiyatri Dünyası 2001; 5: 41-48.*
2. *Köroğlu E, Psikonozoloji-Tanımlayıcı Klinik Psikiyatri. Ankara: HYB Yayıncılık, 2004; 19: 42-43.*
3. *Ross LE, Mclean LM, Anxiety disorders during pregnancy and the postpartum period: a systematic review. J Clin Psychiatry 2006; 67: 1285-1298.*
4. *Vesga-Lopez O, Blanco C, Keyes K, Olfson M, Grant BF, Hasin DS, Psychiatric disorders in pregnant and postpartum women in the United States. Arch Gen Psychiatry 2008; 65: 805-815.*
5. *Ohara MW, Sain AM, Rates and risk of postpartum depression- a meta-analysis. Int Rev Psychiatry 1996; 8: 37-54.*
6. *Efe SY, Taskin L, Eroglu K, Postnatal depression in Turkey and its correlates. J Turk Ger Gynecol Assoc 2009; 10: 14-20.*
7. *Ege E, Timur S, Zincir H, Geçkil E, Reeder BS, Social support and symptoms of postpartum depression among new mothers in Eastern Turkey. J Obstet Gynaecol Res 2008; 34: 585-593.*
8. *Kirpinar I, Gözüm S, Pasinlioğlu T, Prospective study of postpartum depression in Eastern Turkey prevalance, socio-demographic and obstetric correlates, prenatal anxiety and early awareness. J Clin Nurs 2010; 19: 422-431.*

9. *Poçan AG, Aki OE, Parlakgümüs AH, Gereklioglu C, Dolgun AB, The incidence of and risk factors for postpartum depression at an urban maternity clinic in Turkey. Int J Psychiatry Med 2013; 46: 179-194.*
10. *Serhan N, Ege E, Ayrancı U, Kosgeroglu N, Prevalence of postpartum depression in mothers and fathers and its correlates. J Clin Nurs 2012; 22: 279-284.*
11. *Reck C, Struben K, Backenstrass M, et al. Prevalence, onset and comorbidity of postpartum anxiety and depressive disorders. Acta Psychiatr Scand 2008; 118: 459-68.*
12. *Symon B, Bammann M, Crichton G, et al. Reducing postnatal depression, anxiety and stress using an infant sleep intervention. BMJ Open. 2012; 2: e001662. doi: 10.1136/bmjopen-2012-001662.*
13. *Cook F, Bayer J, Le H, Mensah F, Cann W, Hiscock H, Baby business: a randomised controlled trial of a universal parenting program that aims to prevent early ınfant sleep and cry problems and associated parental depression. BMC Pediatr 2012; 12: 13.*
14. *Hiscock H, Cook F, Bayer J, et al. Preventing early infant sleep and crying problems and postnatal depression: a randomized trial. Pediatrics 2014; 133: e346-e54*
15. *Galland BC, Taylor BJ, Elder DE, Herbison P, Normal sleep patterns in infants and children: a systematic review of observational studies. Sleep Med Rev 2012; 16: 213-222.*
16. *Sadeh A, Mindell JA, Luedtke K, Wiegand B, Sleep and sleep ecology in the first 3 years: a web-based study. European Sleep Research Society, J Sleep Res 2008; 18: 60-73.*
17. *Michelson K, Rinne A, Paajanen S, Crying, feeding and sleeping patterns in 1 to 12-month-old infants. Child Care Health Dev 1990; 16: 99-111.*
18. *Sette S, Baumgartner E, Ferri R, Bruni O, Predictors of sleep disturbances in the first year of life: a longitudinal study. Sleep Med Rev 2017; 36: 78-85.*
19. *Mindell JA, Sadeh A, Kohyama J, How TH, Parental behaviors and sleep outcomes in infants and toddlers: A cross- cultural comparison. Sleep Med Rev 2010; 11: 393-9. doi: 10.1016/j.sleep.2009.11.011.*
20. *Araz NÇ, Yılmaz K, Gökçay G, Sleep habits and factors associated with sleep problems among children in Southeastern Turkey. Türkiye Klinikleri J Med Sci 2013; 33: 685-691.*

Tables

Tablo 1. Demographics Features of the Subjects.

	n	%
Gender		
Boys	37	52.9
Girls	33	47.1
Number of siblings		
None	32	45.7
1	27	38.6
2 and above	11	15.7
Delivery type		
Cesarean section	50	71.4
Spontaneous vaginal route	20	28.6
Maternal age (years)		
20-30	33	47.1
31 and over	37	52.9
Maternal education status		
Primary school	12	17.1
High school	30	42.9
University	28	40.0
Mothers' profession		
Available	32	45.7
Unavailable	38	54.3

Fathers' age (years)		
24-30	19	27.1
31-40	38	54.3
41 and over	13	18.6
Fathers' education status		
Primary school	7	10.0
High school	25	35.7
University	38	54.3

Table 2. Sleep Duration of the Infants During the First Three Months of Life.

Infant age	Total sleep duration Mean (SD) hours/day	Day-time sleep duration Mean (SD) hours/day	Night time sleep duration Mean (SD) hours/day
1st. month	14.0 (2.4)	6.8 (1.3)	7.3 (1.4)
2nd. month	14.0 (2.4)	6.3 (1.3)	7.9 (1.4)
3rd. month	13.7 (2.0)	6.0 (1.5)	8.0 (1.3)
p value	.905	.047	.040

Table 3. Anxiety and Depression in Mothers of the Infants in the First Three Months of Life.

	Depression (+) (≥12 points)		Depression (-) (<12 points)	
Age	n	%	n	%
3rd. day	18	25.7	52	74.3
1st. month	9	12.9	61	87.1
2nd. month	6	8.6	64	91.4
3rd. month	6	8.6	64	91.4
	Anxiety (+) (≥8 points)		Anxiety (-) (<8 points)	
3rd. day	34	48.6	36	51.4
1st. month	17	24.3	53	75.7
2nd. month	12	17.1	58	82.9
3rd. month	9	12.9	61	87.1

Table 4. Sleep Duration of Infants in Relation to Depression and Anxiety of Mothers.

Age	Depression (+)			Depression (-)		
	Total sleep	Day-time	Night-time	Total sleep	Day-time	Night-time
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
1st. month	13.6 (2.2)	6.0 (1.3)	7.0 (1.9)	14.3 (2.0)	7.0 (1.2)	7.2 (1.2)
2nd. month	14.3 (2.6)	6.7 (2.0)	7.6 (1.2)	14.0 (2.0)	6.2 (1.4)	6.2 (1.4)
3rd. month	13.9 (1.8)	6.5 (1.2)	7.3 (1.6)	13.7 (2.0)	5.9 (1.5)	5.9 (1.5)
	Anxiety (+)			Anxiety (-)		
1st. month	13.7 (2.1)	6.7 (1.2)	7.0 (1.3)	14.4 (2.0)	6.8 (1.3)	7.3 (1.5)
2nd. month	14.3 (2.2)	6.3 (1.7)	8.0 (1.7)	14.0 (2.0)	6.2 (1.4)	7.7 (1.9)
3rd. month	13.8 (2.1)	6.2 (1.2)	7.6 (1.0)	13.7 (2.0)	5.9 (1.2)	7.8 (1.4)

Table 5. The Mother's Subjective Evaluation of Infants' Sleep Quality in Relation with Presence of Anxiety.

	Good sleep quality		Poor sleep quality		Statistics
Anxiety	n	%	n	%	p value
First day					
Present	20	55.6	16	44.4	.110
Absent	26	76.5	8	23.5	
Total	46	65.7	24	34.3	
First month					
Present	28	52.8	25	47.2	.570
Absent	7	41.2	10	58.8	
Total	35	50.0	35	50.0	
Second month					
Present	35	60.3	23	39.7	.010
Absent	2	16.7	10	83.3	
Total	37	52.9	33	47.1	
Third month					
Present	36	59.0	25	41	.500
Absent	4	44.4	5	55.6	
Total	40	57.1	30	42.9	

FT49

Pediatrik Yaş Grubu Hastaların Mide Biyopsilerinde Histopatolojik Özellikler Ve Helicobacter Pylori Sıklığı

Zeynep Bayramoğlu[1] Ayşe Nur Uğur Kılınç[1] Ethem Ömeroğlu[1] Yaşar Ünlü[1]

[1]Konya Eğitim ve Araştırma Hastanesi Patoloji Bölümü

AMAÇ

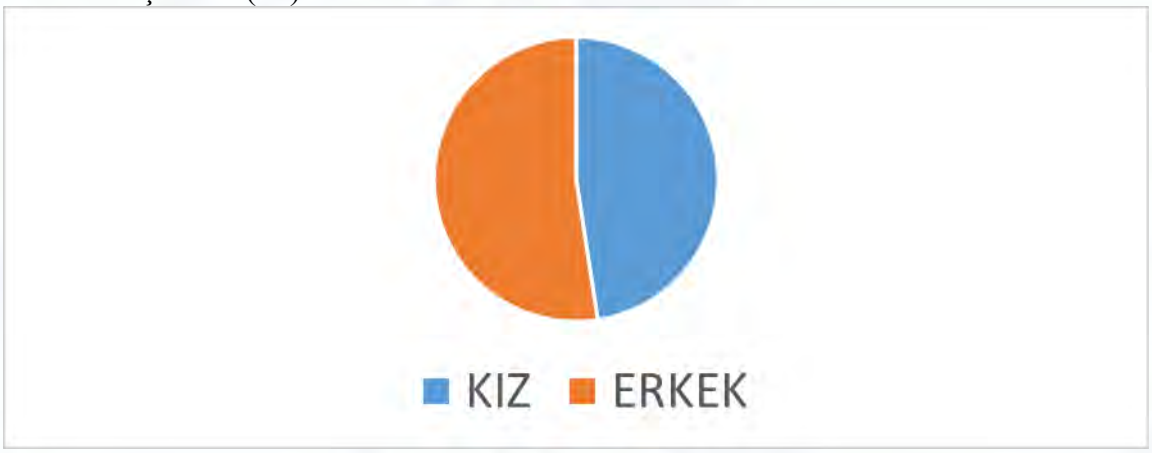
Çalışmamızın amacı üst gastrointestinal sistem (GİS) endoskopisi yapılmış pediatrik yaş grubu (0-18) hastaların histopatolojik özelliklerini, Helicobacter pilori (HP) insidansını, intestinal metaplazi insidansını ve demografik özelliklerini tartışmak ve sunmaktır.

GEREÇ VE YÖNTEM

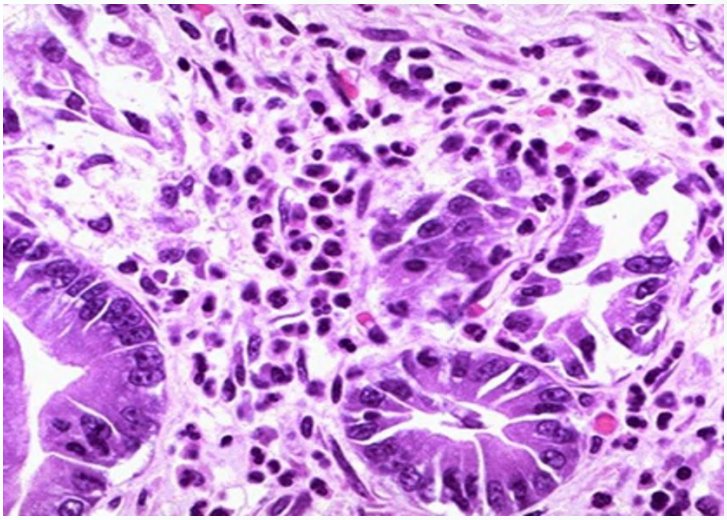
Konya Eğitim ve Araştırma Hastanesi Patoloji bölümünde 2010-2018 yılları arasında üst GİS endoskopisi yapılmış ve mide biyopsisi alınmış 1612 hasta çalışmaya dahil edilmiştir. Biyopsiler Hemotoksilen&Eozin, modifiye Giemsa ve Periyodik asit schiff -Alcian Blue yöntemi ile boyanarak ışık mikroskobunda değerlendirildi. HP varlığı, eozinofil infiltrasyonu, Mononükleer hücre infiltrasyonu, nötrofil infiltrasyonu, atrofi, intestinal metaplazi, HP varlığı incelendi ve Sydney Sistemine göre negatif (0), hafif (+1), orta (+2), şiddetli (+3) olarak sınıflandırıldı. Lenfoid agregat/folikül varlığı, yok/var olarak skorlandı.

BULGULAR

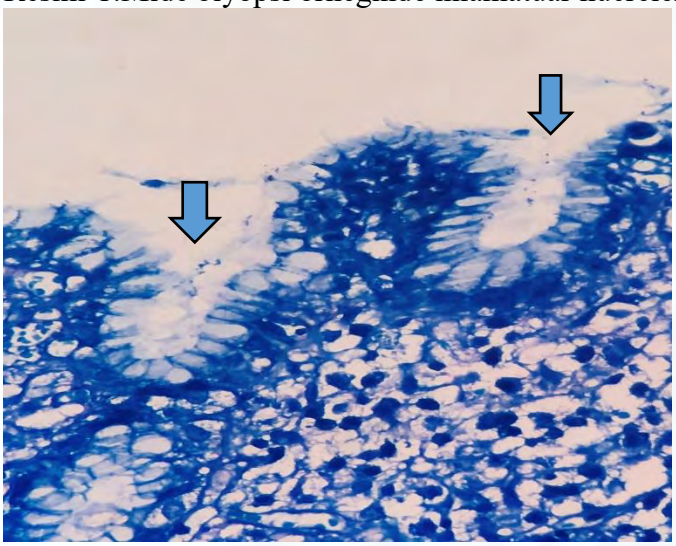
Çalışmaya alınan olguların 767 (%47,5)'i kız, 845 (%52,5)'i erkek olup, yaş ortalamaları 10.56 ± 5,56 idi(Tablo-1). Hastalarımızın en sık şikayeti erken yaş döneminde kusma ve ishalken, yaş grubu arttıkça bulantı, karın ağrısı, epigastrik yanma gibi şikayetler daha sık görülmekteydi. 1289 hastada (%79,9) mononükleer hücre infiltrasyonu, 810 hastada (%50,2) nötrofil infiltrasyonu, 22 hastamızda intestinal metaplazi, 402 hastada (%24,9) lenfoid agregat/folikül izlendi. Hastalarımızın hiçbirinde atrofi görülmedi. HP, 403 hastamızda (%25) tespit edildi. Cinsiyet bakımından HP oranları erkek çocuklarda % 32, kız çocuklarda % 26 oranında tespit edildi. Hastalarımızın yaşlarını 3 gruba ayırdığımızda HP sıklığı 1-5 yaş grubu arasında %20, 6-10 yaş grubu arasında %31, 11-17 yaş grubu arasında %38 olarak saptanmıştır. HP tespit edilen hastalarımızın %46'sında hafif (+1), %15'inde orta (+2), %39'unda şiddetli (+3) oranda HP izlendi.



Tablo-1: Çalışmaya alınan hastalarımızın cinsiyet oranları.



Resim-1:Mide biyopsi örneğinde inlamatuar hücreler (H&E 400X).



Resim-2: Helikobakter pylori (Modifiye Giemsa 400X)

SONUÇ

HP, Gram negatif sarmal şekilli bir bakteridir. HP; kronik gastrit, peptik ülser ve intestinal metaplazi etyolojisinde rol oynamaktadır. HP enfeksiyonu, özellikle kötü hyjen koşulları vedüşük sosyoekonımik düzey ile ilişkili olarak Dünya çapında çok sıklıkla görülmektedir. HP, özellikle gelişmekte olan 3. Dünya ülkelerinde çocukluk çağında da yüksek oranda görülmektedir. HP'nin tedavi edilmesi çocukların semptomlardan kurtulmasının yanısıra olabilecek geç komplikasyonların önlenmesi açısından önemlidir (1-3). HP tanısı non-invaziv(serolojik testler) ve invaziv(endoskopi ve biyopsi) yöntemler ile koyulabilmektedir. Çok farklı tanısal yöntemler olmakla birlikte histopatolojik incelemed HP varlığı yanısıra atrofi, inflamasyon derecesi, intestinal metaplazi gibi patolojiler hakkında daha ayrıntılı bilgi verilebilmektedir(4-7).

Çalışmamızda endoskopik biyopsilerde pediatrik yaş grubunda mononükleer hücre infiltrasyonu sıklığı %79,9, nötrofil infiltrasyon sıklığı % 50,2, HP sıklığı %25'dir. İntestinal metaplazi erişkin yaş grubu hastalarına oranla çok daha az görülmektedir. HP varlığının ve şiddetinin yaşa bağlı arttığı görülmüştür. HP sıklığı, daha önce gelişmekte olan ülkelerde ve ülkemizde yapılmış çalışmalara göre daha düşük bulunmuştur.

Anahtar Kelimeler: *Gastrit, Helicobakter Pilori, Pediatrik*

Referanslar

1. *Drumm B, Koletzko S, Oderda G, European Paediatric Task Force on Helicobacter pylori. Helicobacter pylori infection in children: a consensus statement. Journal of pediatric gastroenterology and nutrition. 2000; 30(2), 207-213.*
2. *Honar N, Minazadeh A, Shakibazad N, Haghighat M, Saki F, Javaherizadeh H. Diagnostic accuracy of urea breath test for Helicobacter pylori infection in children with dyspepsia in comparison to histopathology. Arq Gastroenterol 2016; 53(2): 108-112.*
3. *Tringali A, Thomson M, Dumonceau JM, Tavares M, Tabbers MM, Furlano R, et al. Pediatric gastrointestinal endoscopy: European Society of Gastrointestinal Endoscopy (ESGE) and European Society for Paediatric Gastroenterology Hepatology and Nutrition (ESPGHAN) Guideline Executive summary. Endoscopy 2017; 49(1): 83-91.*
4. *Koletzko S(1), Jones NL, Goodman KJ, Gold B, Rowland M, Cadranel S, et al. H pylori Working Groups of ESPGHAN and NASPGHAN. Evidencebased guidelines from ESPGHAN and NASPGHAN for Helicobacter pylori infection in children. J Pediatr Gastroenterol Nutr 2011; 53(2): 230-243.*
5. *Gisbert JP, de la Morena F, Abraira V. Accuracy of monoclonal stool antigen test for the diagnosis of H. Pylori infection: a systematic review and meta-analysis. Am J Gastroenterol 2006; 101(8): 1921-1930.*
6. *Silva JM, Villares CA, Monteiro Mdo S, Colaúto C, dos Santos AF, Mattar R. Validation of a rapid stool antigen test for diagnosis of Helicobacter pylori infection. Rev Inst Med Trop Sao Paulo 2010; 52(3): 125-128.*
7. *Ceken N, Yurtsever SG, Baran N, Alper E, Buyrac Z, Unsal B. Comparison of Helicobacter pylori antibody detection in stool with other diagnostic tests for infection. Asian Pac J Cancer Prev 2011; 12: 1077- 1081.*

FT50

Pediatrik Yaş Grubu Hastalarında 9 Yıllık Perkutan Karaciğer Biyopsi Deneyimimiz

Zeynep Bayramoğlu[1] Ayşe Nur Uğur Kılınç[1]

[1] Konya Eğitim ve Araştırma Hastanesi Patoloji Bölümü

AMAÇ

Çalışmamızın amacı perkutan karaciğer biyopsisi yapılmış pediatrik yaş grubu (0-18) hastaların histopatolojik tanılarının, klinik bulgularını, komplikasyonları ve demografik özelliklerini tartışmak ve sunmaktır.

GEREÇ VE YÖNTEM

Konya Eğitim ve Araştırma Hastanesi Patoloji bölümünde 2010-2019 yılları arasında peruktan karaciğer biyopsi yapılmış 72 hasta çalışmaya dahil edilmiştir. Biyopsiler Hemotoksilen&Eozin, Periyodik asit schiff(PAS), d-PAS, Retikülin, Masson-Trikrom yöntemleri ile boyanarak ışık mikroskobunda değerlendirildi.

BULGULAR

Çalışmaya alınan olguların 34 (%47,3)'i kız, 38 (%52,7)'i erkek olup, yaş ortalamaları 10.6'idi. Hastalarımızın en sık şikayeti erken yaş döneminde emmeme ve sarılık, yaş grubu arttıkça karın ağrısı ve sarılık gibi şikayetler daha sık görülmekteydi. 72 hastamızın 35'inde(%48,6) kronik viral hepatit, 7(%9,7) hastamızda ekstrahepatik biliyer atrezi, 7(%9,7) hastamızda metabolik karaciğer hastalığı, 7 (%9,7) hastamızda otoimmün hepatit, 2(%2,7) hastamızda steatohepatit, 2(%2,7) hastamızda hematokromatozis, 2(%2,7) hastamızda ilaca bağlı toksik hepatit, 2 (%2,7) hastamızda primer sklerozan kolanjit, 1 (%1,3) hastamızda toxoplazma enfeksiyonu, 1 (%1,3) hastamızda CMV enfeksiyonu, 1 (%1,3) hastamızda fokal nodüler hiperplazi, 1(%1,3) hastamızda reye sendromu, 1(%1,3) hastamızda Alagille sendromu, 1(%1,3) hastamızda konjenital hepatik fibrozis, 1(%1,3) hastamızda infantil hemangioblastom ve 1(%1,3) hastamızda B hücreli lenfoma tutulumu görülmüştür. Yaş dağılımına göre baktığımızda yeni doğan ve erken çocukluk döneminde daha çok metabolik karaciğer hastalıkları ve doğumsal safra yolu hastalıkları görülmekteyken yaş ilerledikçe kronik viral hepatitler ve otoimmün hepatitler daha sık görülmekteydi.

SONUÇ

Biyokimyasal yöntemlerin, virolojik incelemelerin ve radyolojik tekniklerindeki ilerlemesine rağmen karaciğer biyopsinin histopatolojik incelenmesi karaciğer hastalıklarının aydınlatılması için en önemli yöntemdir (1-4). Çocukluk çağında karaciğer hastalığı nedenleri yaş gruplarına göre değişkenlik göstermektedir (Tablo-1). Örnek olarak biliyer atrezi ve neonatal hepatit yalnızca doğum ve doğumdan kısa bir süre sonra gözlenirken, Wilson hastalığı daha büyük çocukların hastalığıdır. Bunula birlikte pediartik yaş grubu karaciğer hastalıklarının listesi çok uzundur (5-8). Karaciğer biyopsisi sayesinde, hastalıklara tanı konulması, metabolik ve genetik hastalıklar için enzimatik çalışmaların yapılmasına ve kronik viral hepatitli hastaların skorlanmasına olanak sağlar (7,8). Literatüre bakıldığında gelişmekte olan ülkelerde yapılan çalışmalar ile bizim karaciğer biyopsi sonuçlarımız benzer çıkmıştır. Sonuç olarak perkutan karaciğer biyopsisi, her yaşta uygulanbilir olup karaciğer hastalıklarının tanısı için, etkin, hızlı ve güvenilir bir yöntemdir.

Anahtar Kelimeler: *Karaciğer biyopsisi, Metabolik karaciğer hastalıkları, Kronik viral hepatit, Pediatrik*

Yenidoğan ve bebeklik çağı	Biliyer atrezi Alfa-1-antitripsin eksikliği Alagille sendromu Kolelitiyazis Hipotroidi Peroksisomal hastalıklar Kistik fibrosis Byler hastalığı Toksik - farmakolojik nedenler Galaktozemi Fruktozemi Glikojen depo hastılığı Safra asit metabolizma bozuklukları Caroli sendromu Tirosinemi Koyulaşmış safra sendromu Neonatal demir depo hastalığı TORCH grubu enfeksiyonlar
Büyük çocuk ve adolesanlar	Viral hepatitler Otoimmün hepatit Toksik- farmakolojik hepatitler Sklerozan kolanjit Steatohepatit Budd-Chiari sendromu Wilson hastalığı Hipotansiyon Malignite

Tablo-1: Karaciğer hastalıklarının yaş grubuna göre dağılımı.

Referanslar

1. *Bugeac N, Pacht A, Mandel H, Iancu T, Tamir A, Srugo I, et al. The significance of isolated elevation of serum aminotransferases in infants and young children. Arch Dis Child 2007; 92(12):1109-12.*
2. *Ishak K, Baptista A, Bianchi L, Callea F, De Groote J, Gudat F, et al. Histological grading and staging of chronic hepatitis. J Hepatol 1995;22(6):696-9.*
3. *Bravo AA, Sheth SG, Chopra S. Liver biopsy. N Engl J Med 2001;344(7):495-500.*
4. *Tannapfel A, Dienes HP, Lohse AW. The indications for liver biopsy. Dtsch Arztebl Int 2012;109(27-28):477-83.*
5. *Nightingale S, Ng VL. Neonatal hepatitis. In: Wyllie R, Hyams JS, Kay M, eds. Pediatric Gastrointestinal and Liver Disease. 4th ed. Philadelphia: Saunders; 2011. p. 728-40.*
6. *Huang JF, Hsieh MY, Dai CY, Hou NJ, Lee LP, Lin ZY, et al. The incidence and risks of liver biopsy in non-cirrhotic patients: An evaluation of 3806 biopsies. Gut 2007;56(5):736.*
7. *Ovchinsky N, Moreira RK, Lefkowitch JH, Lavine JE. Liver biopsy in modern clinical practice: a pediatric point-of-view. Adv Anat Pathol 2012;19(4):250-62.*
8. *Farrell RJ, Smiddy PF, Pilkington RM, Tobin AA, Mooney EE, Temperley IJ, et al. Guided versus blind liver biopsy for chronic hepatitis C: clinical benefits and costs. J Hepatol 1999; 30(4):580-7.*

FT51

Factors Affecting Chronicity in Childhood Immune Thrombocytopenia

Emine ÇAMTOSUN[1], Mualla ÇETİN[2]

[1]İnönü University, School of Medicine, Department of Pediatrics, Malatya, Turkey

[2]Hacettepe University, School of Medicine, Pediatric Hematology, Ankara, Turkey

OBJECTİVES: Immune thrombocytopenic purpura (ITP) is the most common cause of childhood acquired thrombocytopenia. Spontaneous recovery within one year is common in acute cases. Whereas intravenous immunoglobulin (IVIG), corticosteroids or anti Rh immunoglobulin (Anti-D) treatments are used to increase the platelet count rapidly in cases with high risk of bleeding or those with hemorrhage. We aimed to evaluate initial responses to various treatments in childhood ITP and factors affecting chronicity in a single center cohort of pediatric and adolescent ITP patients.

MATERIALS AND METHOD:
The study included 143 patients under the age of 18 who were followed-up with the diagnosis of ITP and who presented within initial 12 months of the disease within 18 years of duration. The initial treatment responses of acute ITP and the factors influencing chronicity were evaluated.

FINDINGS:
Of the 143 patients nine were lost the follow up, 81 patients (60,4%) exhibited resolution of thrombocytopenia within 12 months. The sex and mean age were not different between acute(aITP) and chronic(cITP) patients (p>0,05). But aITP was more frequent below two years old (p=0,027). Patients who had insidious onset, who didn't have antecedent history of infection had higher chronicity rates. Platelet count at diagnosis was higher in cITP group (p=0,037). The median platelet count in the patients with cITP was 13,000(1000-122,000), which was significantly higher than in acute cases 8000(1000-62000)/mm^3(p=0.037). Observation only, methylprednisolone(MP) and IVIG applied to aITP patients as initial therapies, and they had similar initial resolution/response rates (89,5%, 82,5%, 87,1% respectively)(p=0,811). Steroid and IVIG therapies provided response faster than observation only (p<0,05).

CONCLUSION:
There is higher risk of progression to chronicity from acute disease in patients with an insidious disease onset, not having history of previous infection, and higher platelet counts at diagnosis. Although the initial response rates to different treatment options in aITP were similar, responses to MP and IVIG were faster.

Key Words: *Itp, Childhood, Treatment, Chronicity*

INTRODUCTION
Immune thrombocytopenic purpura (ITP); which is characterized by low platelet count, spontaneous petechiae, purpura, ecchymosis and mucosal hemorrhage is the most common cause of childhood acquired thrombocytopenia[1]. Increased destruction of platelets through

various immune mechanisms and decreased production in the chronic process are reported to play role in the pathogenesis of ITP [2]. It is most common between the ages of 2-4 [3]. The anually incidence is 2-5 / 100.000[4, 5]. The most serious complication is intracranial hemorrhage(ICH), which is less than 1%. There is often a history of infection or vaccination within 1-4 weeks. Approximately 70-80% of the cases recover within 12 months after admission and are diagnosed as acute ITP (aITP). In the remaining 20-30% of cases, thrombocytopenia lasts more than 12 months and they are diagnosed as chronic ITP (cITP)[6]. Of the cases 2-10% are followed as severe ITP refractory to standart treatments [7, 8]. Although spontaneous recovery may be seen in acute cases, intravenous immunoglobulin (IVIG), corticosteroids or anti Rh immunoglobulin (Anti-D) treatments are used to increase the platelet count rapidly in cases who has high risk of fatal bleeding.
In this study we aimed to evaluate initial responses to various treatments in childhood ITP and factors affecting chronicity in a single center cohort of pediatric and adolescent ITP patients.

MATERIAL AND METHODS:
For the retrospective study, approval was obtained from Hacettepe University Faculty of Medicine Local Ethics Committee of Medical Research (HEK 08/109-12). The study included 143 patients under the age of 18 who were followed-up with the diagnosis of ITP and who presented within initial 12 months of the disease between January 1990 and March 2008 (18 years) in the Pediatric Hematology Unit of Hacettepe University Faculty of Medicine. The diagnosis of ITP was made after distinguishing other etiologies by history, physical examination, complete blood count and peripheral blood smear. The diagnosis was confirmed by bone marrow aspiration examination in appropriate patients.
The date of birth, gender, date of diagnosis and also presenting symptoms, physical examination findings, past infection and vaccine history (1-4 weeks ago) in the first application were recorded. If symptoms started within the last two weeks, it was defined as sudden onset; if started more than two weeks before it was defined an incidious onset [9]. Major hemorrhages (ICH, intranasal bleeding, macroscopic hematuria, diffuse mucosal hemorrhage in multiple sites, bleeding causing anemia) were recorded [10]. Results of tests performed during admission [platelet count, serum levels of anti-nuclear antibody (ANA), anti-deoksiribonucleic acid (anti-DNA)] were recorded.
The initial treatment responses of acute ITP and the factors influencing chronicity were evaluated. If patient didn't have any therapy this was named observation only. Methylprednisolone (MP) therapy was given as mega dose methylprednisolone (MDMP) 30 mg/kg/day 3 days + 20 mg/kg/day 4 days oral single dose or [11] standard dose (SDMP) 1-2 mg/kg/day. IVIG therapy was given as 1g/kg/day for 2 days in 17 patients, 1g /kg/day for 1 day in 5 patients, 400 mg /kg/day for 5 days in 5 patients and 800 mg /kg/day for 1-2 days in 5 patients by IV slow infusion. After initial treatment in acute phase, increase of platelet count ≥ 100.000/mm3 was recorded as complete initial response. If platelet count remained below 30.000/mm3 it was named unresponsive. Patients had remission within the first 12 months were referred to as aITP, and those who had thrombocytopenia for longer than 12 months were referred to as cITP [6]. The patients with acute and chronic course were compared in terms of age, gender, onset of complaints (sudden / insidious), history of infection, history of vaccination, referral platelet count and seropositivity of ANA.
Statistical analysis: The normality of the data was evaluated by the Shapiro–Wilk test and Kolmogorov-Simirnov test due to sample size. Mean, standard deviation, median, minimum and maximum values were used as descriptive statistics for quantitative data. For group comparisons Mann Whitney U test, Kruskal-Wallis (K-W) test and after K-W test Conover pairwise comparison method were used. Qualitative data were summarized by count and

percentage, Pearson chi-square, continuity corrected chi-square and Fisher's exact tests were used for comparisons. ROC analysis was performed to determine the best cut-off value and the AUC. In all analyses, significance level was considered to be 0.05. SPSS 22.0 (SPSS Inc., Chicago, IL, USA) was used for analysis.

RESULTS:

Treatment Response

For the patients who presented in the acute period (n=143), observation only (n = 21, 16.7%), steroid (MP) (n = 61, 48.4%), IVIG (n = 33, 26.2 %) or steroid + IVIG (n = 11, 8.7%) therapies were preferred as the first treatment approach (Table 1).

When the patients were evaluated in terms of their response to the initial treatment options as observation only, steroid (MP), IVIG or steroid+IVIG, achieved initial complete response rates were; 89.5%; 82.5%; 87.1%; 77,8% respectively (Table 1). When the observation only, steroid and IVIG groups were compared, the initial complete response rates were not different (p = 0.811). Steroid+IVIG group was not included in the statistical analysis because the number of patients were insufficient for the analyse. The median time to initial complete response was 43 (4-339) days with observation only, 7 (3-250) days with steroid, 6 (2-184) days with IVIG, 26 (2-195) days with IVIG plus steroid. Steroid and IVIG therapies provided response faster than observation only (p<0,05) (Figure 1).

Table 1: Distribution of initial treatments given to ITP patients presenting in acute period

Treatment	Frequency	Complete initial response	Response time (days) median (range)
Observation only	21 (16.7%)	17 (89.5%)	43 (4-339)
Steroid (MP)	61 (48.4%)	47 (82.5%)	7 (3-250)
İVİG	33 (26.2%)	27 (87.1%)	6 (2-184)
İVİG+steroid	11 (8.7%)	7 (77.8%)	26 (2-195)
		P=0.811	P< 0.05

Complete initial response: platelet count ≥100.000 after treatment; Response time: time to platelet count ≥100.000 after treatment.

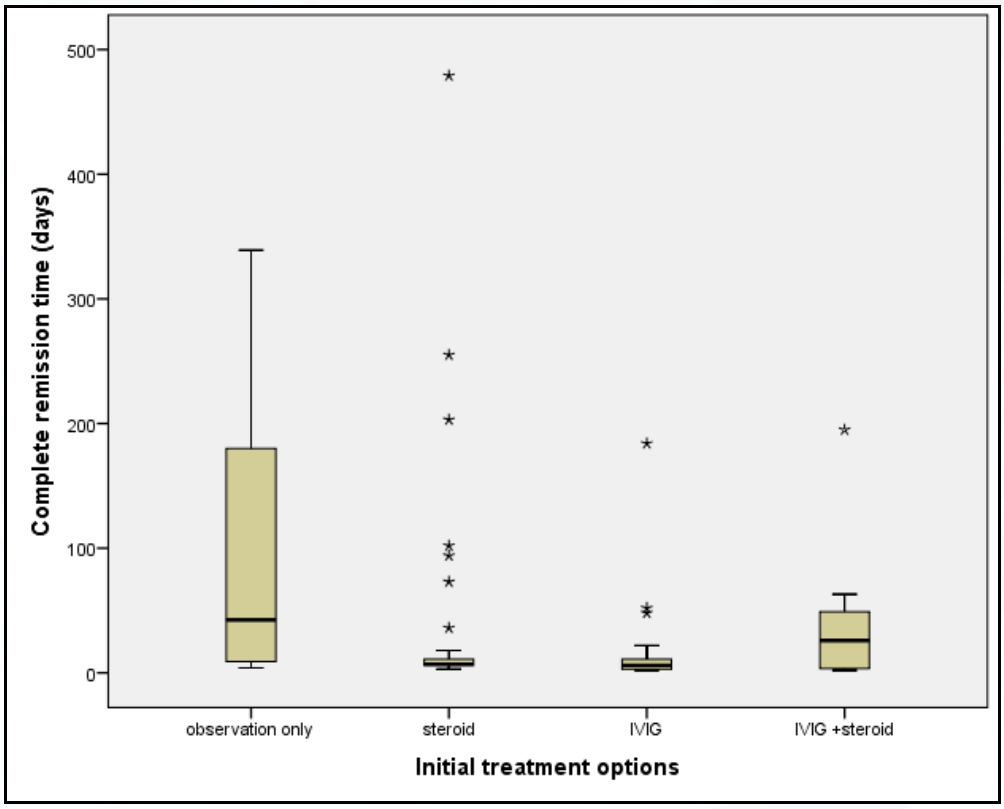


Figure 1: Complete initial response time after initial therapies.

Comparison of acute and chronic ITP cases

Of the patients (n=143), nine were lost the follow up, 81 (60,4%) had attained complete remission within the first 12 months and diagnosed as aITP, and 53 (39,5%) were diagnosed as cITP because their thrombocytopenia continued longer than 12 months. The mean age of aITP and cITP cases on first admission were 6.16 ± 4.0 (0,13-14,78) and 7.15 ± 3.63 (0,57-15,89) years, respectively (Table 2). The mean age of cITP patients was not significantly different than aITP patients (p>0,05). When the patients were grouped as under 2 years, 2-10 years and above 10 years of age, it was seen that the rate of acute cases was higher in the group under two years old than the other groups (p = 0,027) (Figure 2). There was no difference between the sexes in terms of chronicity (p = 0.87). Chronicity was significantly lower in patients with sudden initial complaints and those with a history of previous infection (p=0.00, p=0.004). There was no statistically significant difference between the patients with and without vaccine history (p = 0.527). The median platelet count in the patients with aITP was 8000 (1000-62000)/mm^3, which was significantly lower than in chronic cases 13,000 (1000-122,000) (p = 0.037) (Figure 2). When the patients were grouped as ≤ 20.000 / mm^3 and > 20.000 / mm^3 according to the platelet counts, chronicity was not different between groups (p = 0.148). Chronicity was not different between groups when the patients were divided according to platelet counts on first admission as <10.000/mm^3 and >10.000/mm^3 (p = 0.114). The cut-off point was 12.500 / mm^3 between the groups for the platelet count at diagnosis by ROC analysis (sensitivity 70.4%, selectivity 52%, AUC 0.609 ± 0.051). Acute ITP was more frequent in patients who has platelets below 12.500 /mm^3 at diagnosis(p=0,037). Of the patients who had positive ANA test, 8 (%66,7) had acute and 4 (33,3%) had chronic course and no statistically significant difference was found (p = 0.554).

Table 2. Comparison of clinical and laboratory features of patients with acute and chronic ITP

Features	Acute ITP (N = 81)	Chronic ITP (N = 53)	P
Age at diagnosis (years) Mean ± SD (Range)	6.16± 4.0 (0.13-14.78)	7.15±3.63 (0.57-15.89)	0.108
Age distribution (%)			
≤2 years	13 (92.9%)	1(7.1%)	
2-10 years	52 (55.3%)	42 (44.7%)	0.027
> 10 years	16 (61.5%)	10 (38.5%)	
Gender n (%)			1.0
Female	46 (60.5%)	30 (39.5%)	
Male	35 (60.3%)	23 (39.7%)	
Initiation of complaints n (%)			
Sudden	75 (71.4%)	30 (28.6%)	0.00
Insidious	6 (20.7%)	23 (79.3%)	
History of previous infection n (%)			
Yes	56 (71.8%)	22 (28.2%)	0.004
No	25 (45.5%)	30 (54.5%)	
Vaccination history n (%)			
Yes	8 (72.7%)	3 (27.3%)	0.527
No	73 (59.8%)	49 (40.2%)	
Platelet count on referral / mm^3			
median (range)	8000 (1000-62.000)	13.000 (1000-122.000)	0.037
≤20.000 / mm^3	64 (66.0%)	33 (34.0%)	0.148
> 20.000 / mm^3	17 (50%)	17 (50%)	
≤10.000 / mm^3	50 (68.5%)	23 (31.5%)	0.114
> 10.000 / mm^3	31 (53.4%)	27 (46.6%)	
≤12.500 / mm^3	57 (70.4%)	24 (29.6%)	0.018
> 12.500 / mm^3	24 (48.0%)	26 (52.0%)	
ANA positive n (%)			
Yes	8 (66.7%)	4 (33.3%)	0.554
No	53 (53%)	47 (47%)	

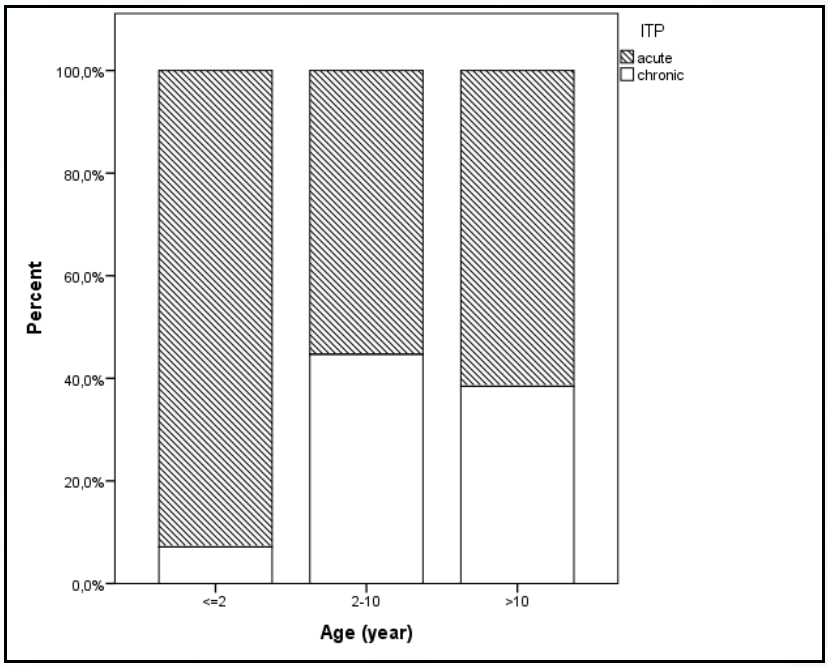


Figure 2: Distribution of childhood ITP according to age groups

Prognosis

Eighty-one (60,4%) of the cases underwent complete remission within the first 12 months. In a mean follow-up of 2.4 ± 2.9 (0.08-15.9) years, 102 (76,1%) patients (five after splenectomy) had complete remission, 19 patients' thrombocyte counts were stabilized above 30.000/mm^3, 13 (9,7%) had refractory thrombocytopenia. The most delayed remission occurred in the 177th month.

DISCUSSION:

The current approach in the follow-up and treatment of childhood ITP is the individual planning of the treatment according to the platelet count as well as the severity of the patient's bleeding, activity profile and compliance of the family with psychosocial issues [12]. In general, there is a consensus on shortening the risky period by giving medical treatment in cases who have life-threatening bleeding or significant mucosal bleeding. Treatment is still controversial in patients with mild symptoms like only cutaneous signs. Because the rate of remission without treatment is high, it is thought that mild symptoms can be observed without treatment by informing the family, but patients with a platelet count <10.000/mm3, head trauma, concomitant drug use that adversely affect platelet function are relieved of the risk of intracranial hemorrhage. IVIG is more preferred in the younger age group although there is no clear criteria for choice of corticosteroid or IVIG as the first choice when medical treatment is decided. Short-term MDMP treatment was widely accepted in our country because of its low cost, rare side effects and easy applicability. In addition, similar remission rates were observed MDMP versus IVIG treatments in several studies performed in our country. Özsoylu and colleagues randomized 20 patients to receive MDMP or IVIG, they found complete remission rates 60% in both groups on the third day of treatment and 80%, 90% on the seventh day of treatment. They indicated that the efficacy was similar in both groups [13]. Duru et al. suggested that MDMP and IVIG increased the platelet count more rapidly compared to non-treated monitoring, but they were not superior to the untreated monitoring in terms of remission rate [14]. In a current literature, 75 µg/kg anti-D has been reported to be effective in the treatment of aITP [15]. Although anti-D treatment is frequently used in cITP attacks, it can be used in aITP. In our study, there was no statistically significant difference in

the rate of acute response between untreated observation, MP and IVIG groups. It was observed that MP and IVIG treatments had an earlier response than observation only.
Treatment-related side effects were generally mild and transient. Aseptic meningitis occurred in three patients with IVIG as severe side effects and anaphylaxis in one patient.
Higher age at diagnosis (> 10 years), insidious onset, higher referral platelet count (> 10,000-20.000 / mm^3), no mucosal bleeding and no history of infection have been reported as risk factors for chronicity in childhood ITP in various publications [16-18]. It was reported that history of vaccination and treatment choice did not have an effect on chronicity and although the ratio of F/M was higher in cITP than in aITP the difference was not statistically significant [4]. In our study, the F/M ratio and mean age (years) at diagnosis were not different between groups. But in patients aged ≤ 2 years, aITP was more frequent. Chronicity rate was found to be higher in patients presenting with incidious complaints and patients without history of infection in our study. There was no statistically significant difference in the rate of chronicity among those who had a vaccination history or not. In our study, the median platelet count on referral was significantly higher in the chronic group ($p = 0.037$), and 12.500 / mm^3 is the cut off point, consistent with the literature.
Prognosis of childhood ITP is good and the remission rate is over 75%, almost 10% patients have refracter severe thrombocytopenia. When our patients were followed up for a mean of 2.4 years, the remission rate reached 76,1% in our study and the refractory ITP ratio was found to be 9,7%.

Conclusion

Although ITP, which is the most common acquired thrombocytopenia cause in childhood, is a benign disease, in our study 60,4% of the patients had remission in the first year and 9,8% of the cases had refractory ITP in the long-term follow-up. In the treatment of aITP, although similar initial response rates were obtained with observation only, MP or IVIG use; response to MP and IVIG was earlier. The age at diagnosis was not different between aITP and cITP. Presenting with incidious complaints, no history of previous infection, and higher platelet counts in first admission (above 12.500/mm3) were determined as risk factors for chronicity. Gender and vaccination history did not have any effect on chronicity. Because of cITP is more difficult to manage, clarifying the pathophysiological mechanisms for chronicity is needed and preventive treatment options should be developed.

References

1. *Devecioğlu, Ö., Kanama ve pıhtılaşma bozuklukları. Trombositopenik purpuralar. ,In: O. Neyzi, Editor. Pediatri., Nobel Tıp Kitabevleri, İstanbul; 2002. p. 1078-1084. .*
2. *Ghanima, W., P. Holme, and G. Tjønnfjord, Immune thrombocytopenia--pathophysiology and treatment. Tidsskrift for den Norske laegeforening: tidsskrift for praktisk medicin, ny raekke, 2010. 130(21): p. 2120-2123.*
3. *DB, W., Acquired Platelet Defects in Immun thrombocytopenic purpura., In: O.S. Nathan DG, Gingsburg D, Look TA, , Editor. Nathan and Oski's Hematology of Infancy and Childhood, , W.B Saunders Company: Philadelphia. 2009; p. 1557-1590.*
4. *Zeller, B., et al., Childhood idiopathic thrombocytopenic purpura in the Nordic countries: epidemiology and predictors of chronic disease. Acta paediatrica, 2005; 94(2):178-184.*
5. *Sutor, A.H., A. Harms, and K. Kaufmehl. Acute immune thrombocytopenia (ITP) in childhood: retrospective and prospective survey in Germany. in Seminars in thrombosis and hemostasis.. Copyright© 2001 by Thieme Medical Publishers, Inc., 333 Seventh Avenue, New York, NY 10001, 2001, USA.*
6. *Rodeghiero, F., et al., Standardization of terminology, definitions and outcome criteria in immune thrombocytopenic purpura of adults and children: report from an international working group. Blood 2009;113(11):2386-2393.*

7. *Vranou, M., et al., Recurrent idiopathic thrombocytopenic purpura in childhood. Pediatric blood & cancer 2008;51(2):261-264.*
8. *Kalpatthi, R. and J.B. Bussel, Diagnosis, pathophysiology and management of children with refractory immune thrombocytopenic purpura. Current opinion in pediatrics 2008;20(1):8-16.*
9. *Edslev, P.W., et al., A clinical score predicting a brief and uneventful course of newly diagnosed idiopathic trombocytopenic purpura in children. British journal of haematology 2007;138(4):513-516.*
10. *Medeiros, D. and G.R. Buchanan, Major hemorrhage in children with idiopathic thrombocytopenic purpura: immediate response to therapy and long-term outcome. The Journal of pediatrics. 1998;133(3):334-339.*
11. *Ozsoylu, S. and G. Erturk, Oral megadose methylprednisolone for childhood acute idiopathic thrombocytopenic purpura. Blood 1991;77(8):1856-1857.*
12. *Provan, D., et al., International consensus report on the investigation and management of primary immune thrombocytopenia. Blood 2010;115(2):168-186.*
13. *Özsoylu, S., T.R. Sayli, and G. Öztürk, Oral megadose methylprednisolone versus intravenous immunoglobulin for acute childhood idiopathic thrombocytopenic purpura. Pediatric hematology and oncology 1993;10(4):317-321.*
14. *Duru, F., et al., Clinical course of children with immune thrombocytopenic purpura treated with intravenous immunoglobulin G or megadose methylprednisolone or observed without therapy. Pediatric hematology and oncology 2002;19(4):219-225.*
15. *Tarantino, M.D., et al., Single dose of anti-D immune globulin at 75μg/kg is as effective as intravenous immune globulin at rapidly raising the platelet count in newly diagnosed immune thrombocytopenic purpura in children. The Journal of pediatrics 2006;148(4):489-494.*
16. *Koçak, Ü., et al., Evaluation of clinical characteristics, diagnosis and management in childhood immune thrombocytopenic purpura: a single center's experience. Turkish journal of pediatrics 2007;49(3):250.*
17. *Kühne, T., et al., A prospective comparative study of 2540 infants and children with newly diagnosed idiopathic thrombocytopenic purpura (ITP) from the intercontinental childhood ITP study group∗. The Journal of pediatrics 2003;143(5):605-608.*
18. *Kühne, T., et al., Newly diagnosed idiopathic thrombocytopenic purpura in childhood: an observational study. The lancet 2001;358(9299):2122-2125.*

FT52

Geç Preterm İnfantların Düzeltilmiş Yaş 12. Ayda Nörogelişimsel Sonuçları: Prospektif Çalışma

Necmi Kılınç, Nuriye Tarakçı, Hüseyin Altunhan

Amaç:
Bu çalışmada düzeltilmiş yaş 12 aylık geç preterm bebeklerin nörogelişimsel sonuçlarını değerlendirmek ve nörogelişimsel sonuçları etkileyebilecek faktörlerin araştırılması amaçlanmıştır.

Hastalar ve Yöntem:
Geç preterm ve term bebeklerin 12 aylık düzeltilmiş yaştaki nörogelişimsel sonuçları, dil, kaba motor, ince motor ve sosyal beceriler de dahil olmak üzere Ankara Gelişim Tarama Envanteri (AGTE) testi ile değerlendirildi.

Bulgular:
Çalışmada 42 erken preterm ve 58 term bebek vardı. Geç preterm ve term bebekler arasında genel gelişim, dil, kaba motor, ince motor ve sosyal etkileşim puanlarında anlamlı bir fark bulunmadı ($p > 0.05$). Kaba motor skoru geç preterm kızlarda daha düşüktü ($p < 0.05$).

Sonuç:
Bu çalışmadan belki şu çıkarılabilir: Geç preterm bebekler terme yakın olsa da yine de preterm bebeklerin bazı sorunlarını yaşarlar. Geç preterm kız bebeklerde gross motor puanının daha düşük olması böyle bir kuşkuyu akılda tutmamıza yol açmalıdır. Her ne kadar bu çalışmadaki örnek sayısı az ve böyle bir kanaate varılması için yetersiz olsa da; örnek sayısı çok daha fazla olan daha geniş ve randomize kontrollü çalışmalar yapılmasını ve bu sonuçlar alınıncaya kadar geç preterm bebeklerin nörolojik takiplerinin düzenli yapılmasını öneriyoruz. Ayrıca aynı bebeklerin daha ileri yaşlardaki nörolojik gelişmelerinin takip edilmesi ile daha ayrıntılı bilgiler elde edilebileceğini düşünüyoruz.

Anahtar kelimeler: *Geç preterm, erken nörogelişimsel sonuçlar*

Neurodevelopmental outcomes of late preterm infants at 12 months corrected age: A prospective study

Purpose:
This study aimed to evaluate the neurodevelopmental outcomes of late preterm infants at 12 months corrected age and to investigate the factors that may affect the neurodevelopmental outcomes.

Patients and Methods:
The neurodevelopmental results of late preterm and term infants at 12 months corrected age were assessed by the ADSI test including language, gross motor, fine motor, and social skills.

Results:
There were 42 late preterm and 58 term infants in the study. There were no significant differences in the general development, language, gross motor, fine motor and social interaction scores between late preterm and term infants ($p>0.05$). The gross motor score was lower in late preterm girls ($p<0.05$). Maternal hypothyroidism caused lower general and language scores in infants ($p<0.05$, $p<0.05$).

Conclusion:
The following conclusions can be obtained from this study: Although late preterm infants are close to term infants, they still experience some problems of preterm infants. The lower gross motor score in late preterm girls should lead us to keep such a suspicion in mind. Although the number of patients in this study is very few and inadequate to reach such a conclusion, we suggest that large randomized controlled trials are performed and that neurological follow-up of late preterm infants is made regularly until obtaining these results. Furthermore, we think that more detailed information can be obtained by following the same infants' neurological developments at older ages.

Key words: *late preterm, early neurodevelopmental outcomes*

Introduction:
Late preterm infants constitute approximately 75% of all preterm births. Late preterm infants are more retarded than term infants in terms of physiological and metabolic development (1). Preterm infants have a higher risk of neonatal morbidity and mortality (2). Although it has been reported in the literature that late preterm infants have neurological problems, learning difficulties, low school success, and behavior problems, their prevalence rates are not exactly known (3). However, there are few studies evaluating the neurodevelopmental outcomes of late preterm infants (3). The number of studies on this subject in Turkey is very few.
Some tests are used to evaluate the neurodevelopmental outcomes of infants and children, to determine their prognosis and to start treatment early. One of these tests is the Ankara Developmental Screening Inventory (ADSI). It is a screening inventory which has been developed to determine the development and skills of infants and pre-school children, has been organized according to various age groups, and has been internationally validated (4).
In this study, we aimed to compare the neurodevelopmental outcomes of late preterm and term infants at 12 months corrected age and to investigate the factors that may affect the neurodevelopmental outcomes.

Method
The ADSI was conducted on 42 late preterm and 58 term infants of twelve mounths, corrected age, who were referred to the XXXXXX/XXXXXXX to determine their neurological developmental status. The ADSI is beneficial in the early detection of infants and children suspected of carrying a risk of developmental retardation and disorders. ADSI is a scale extensively used in Turkey for the evaluation of language–cognitive, fine motor, gross motor, social interaction skill and self-care ability levels of children between 0 and 6 years of age. Complete or partial improvements in the neurological findings are evaluated according to ADSI and the findings on the neurological examinations (8).
Multiple pregnancies were also included in the present cross-sectional study. Exclusion criteria were major anomalies, prenatal infection history, and teratogenic drug and alcohol exposure during the intrauterine period of the fetus. The present study was initiated subsequent to the permission from the XXXX Ethics Committee of XXXXXX. Consent forms were obtained after the participating families were completely informed about the aims of the present study. Necessary information about the participants as well as their medical records were written on the registration form.

Statistical Analysis
The SPSS package program 20.0 was used to analyze the data obtained. The categorical variables were presented as the frequency and percentage rate, and the numerical data were presented in the form of numerical variables as mean ± sd. The Kolmogorov–Smirnov and

Shapiro–Wilk tests were performed on the rational variables to determine their normal distribution. Student's *t*-test was used for the group comparison of variables with a normal distribution between two groups and ANOVA for multiple groups. The Mann–Whitney*U*test was employed for two independent groups as a non-parametric method and the Kruskal–Wallis test for multiple groups. Binary comparisons were made during multiple group comparisons. To determine the relations among the categorical variables, thechi-square test with a Monte Carlo simulation was applied. In the study, the type I error level was determined as 5%, and the outcomes were considered statistically significant when the probability was $p < 0.05$.

Results

100 patients were included in the study (42 late preterm, 58 term). When the demographic characteristics of the patients were examined, multiple pregnancy ($p<0.05$), cesarean section ($p<0.05$) and assisted reproductive technique ($p<0.05$) were found significantly higher in late preterm infants compared to term infants. Birth weight was found significantly higher in term infants compared to late preterm infants ($p<0.05$) There was no significant difference between the two groups in terms of maternal age and gender ($p>.05$, $p>0.05$) (Table 1).

Maternal preeclampsia/eclampsia and amniotic fluid volume changes were higher in late preterm infants compared to term infants ($p<0.05$) (Table 1).

The mean ADSI scores of late preterm and term infants are shown in Table 2. There were no significant differences in the general development, language, gross motor, fine motor and social interaction scores between late preterm and term infants ($p>0.05$).

The mean ADSI scores of late preterm and term infants were compared according to their demographic characteristics (Table 3). When late preterm infants were compared in terms of gender, the gross motor score was lower in late preterm girls ($p<0.05$).

The effects of maternal and neonatal factors on the neurodevelopmental outcomes are shown in Table 4. The presence of maternal hypothyroidism had a significant effect on the general and language scores. The infants of the mothers with a history of hypothyroidism had lower general and language scores ($p<0.05$, $p<0.05$).

Discussion

This is the first study to evaluate the early neurodevelopmental results in late preterm and term infants by the ADSI test. Prenatal, natal and postnatal factors may cause poor neurological outcomes in preterm infants (6). Moreover, brain development occurs especially in the last six weeks of pregnancy (7). Preterm birth affects brain development and neurobiological processes (8).

Late preterm infants have been shown to have twice the risk of neurodevelopmental disability compared to term infants. The spectrum of neurodevelopmental disabilities such as sensory and cognitive impairment, attention deficit, hyperactivity, emotional symptoms, communication, and learning difficulties are quite extensive in preterm infants (3). It was reported that neurodevelopmental impairment was most commonly found in cognitive (9) and motor (10) functions in late preterm infants and that the mean cognitive and language scores were lower in late preterm infants than in term infants (9). Similarly, cognitive deficits were also reported in school-age children born late preterm (11). In one study, it was found that there was a 24% difference in learning scores between late preterm and term infants in the first period of education (12). In our study, there was no significant difference between late preterm and term infants in terms of general development, language-cognitive, gross motor, fine motor and social development in the early period.

There are studies in the literature showing that gender has different effects on the neurodevelopmental outcomes. In one study, male gender was reported to be more risky in terms of cognitive functions (9). Similarly, Cserjesi R et al. (11) showed that late preterm boys caught up to their peers, whereas late preterm girls lagged behind their peers during the school-age years. Romeo et al. (13) reported that the mental developmental index was lower in late preterm boys at 12 and 18 months uncorrected age, but it showed similar results between the genders when corrected age was used. In our study, there was no significant difference between the genders in terms of cognitive functions. Cognitive scores were not found to be low in some studies where corrected age was used (13,14,15). These studies support our results. In addition, we observed that the ADSI-gross motor functions of late preterm boys were better than those of late preterm girls. The difference in the social development score was not significant, but it was slightly higher in late preterm girls.

There are few studies investigating the predictors of adverse outcomes of late preterm infants. In studies conducted, it was found that preeclampsia was associated with long-term cognitive (16,17) and behavioral (18) sequelaes. In our study, preeclampsia was not found as a risk factor for neurodevelopmental disorders.

The association between raised maternal TSH levels and neurodevelopmental compromise is not clear. Williams F et al. (19) found that the general cognitive index and verbal and perceptual performance subscale scores were significantly lower in infants who were born before 34 weeks of pregnancy and had higher maternal TSH levels at birth. It has been shown that untreated maternal hypothyroidism in pregnancy is associated with poor neurophysiological outcome (20). In our study, we observed that the ADSI-general and language scores were lower in infants having maternal hypothyroidism.

The underlying mechanisms of the relationship between breastfeeding and neurological development are uncertain. Infants who received breast milk in the neonatal intensive care unit had less autism symptoms (21). Johnson S et al. (9) have indicated that early cessation of breastfeeding at hospital discharge is associated with moderate/severe cognitive deficits in infants. In our study, we found that the general and language scores were higher in late preterm infants who received breast milk for longer than 6 months.

Conclusion, prematurity continues to be one of the major causes of infant mortality and life-long morbidity. Although late preterm infants are close to term infants, they still experience some problems of preterm infants. The lower gross motor score in late preterm girls should lead us to keep such a suspicion in mind. Although the number of patients in this study is very few and inadequate to reach such a conclusion, we suggest that large randomized controlled trials are performed and that neurological follow-up of late preterm infants is made regularly until obtaining these results. Furthermore, we think that more detailed information can be obtained by following the same infants' neurological developments at older ages.

Author contribution

H.A., N.T. and N.K.. designed the study; N.K. performed experiments; H.A.,N.T. and N.K.collected and analysed data, wrote the manuscript; N.T and N.K. All authors read and approved the final manuscript.

References

1 *Engle WA, Tomashek KM, Wallman C. 'Late-preterm' infants: a population at risk. Pediatrics 2007; 120: 1390-1401*

2 *Escobar GJ, Greene JD, Hulac P, et al. Rehospitalization after birth hospitalization: patterns among infants of all gestations. Arch Dis Child 2005; 90: 125–31.*

3 *Arpino C, Compagnone E, Montanaro ML, et al. Preterm birth and neurodevelopmental outcome: a review. Childs Nerv Syst 2010; 26: 1139–49.*

4 *Savaşır, I, Sezgin, N, Erol N, (2005). Ankara Gelişim Tarama Envanteri El Kitabı (3. b.s.). Ankara: Türk Psikologlar Derneği*

5 *Demir N, Koc A, Üstyol L, Peker E, Abuhandan M. Clinical and neurological findings of severe vitamin B12 deficiency in infancy and importance of early diagnosis and treatment. J Paediatr Child Health. 2013; 49(10): 820-4.*

6 *Arpino C, D'Argenzio L, Ticconi C, et al. Brain damage in preterm infants: etiological pathways. Ann Ist Super Sanita 2005; 41: 229–37.*

7 *Shapiro-Mendoza CK, Tomashek KM, Kotelchuck M,et al. Effect of late-preterm birth and maternal medical conditions on newborn morbidity risk. Pediatrics 2008; 121: 223-32.*

8 *Volpe JJ. Brain injury in premature infants: a complex amalgam of destructiveand developmental disturbances. Lancet Neurol 2009; 8: 110–24.*

9 *Johnson S, Evans TA, Draper ES, et al. Neurodevelopmental outcomes following late and moderate prematurity: a population-based cohort study. Arch Dis Child Fetal Neonatal Ed. 2015; 100(4): F301-8.*

10 *Bland RD. The Newborn Infant. In: Rudolph CD, Rudolph AM, editors. Rudolph's Pediatrics. 21th edition. U.S.A: McGraw-Hill Companies; 2003: 55-222.*

11 *Cserjesi R, Van Braeckel KN, Butcher PR, et al. Functioning of 7-year-old children born at 32 to 35 weeks' gestational age. Pediatrics 2012; 130: e838–46.*

12 *Chyi LJ, Lee HC, Hintz SR, Gould JB, Sutcliffe TL. School outcomes of late preterm infants: special needs and challenges for infants born at 32 to 36 weeks gestation. J Pediatr 2008; 153 (1) : 25–31.*

13 *Romeo DM, Di Stefano A, Conversano M, et al. Neurodevelopmental outcome at 12 and 18 months in late preterm infants. Eur J Paediatr Neurol 2010; 14(6): 503-7.*

14 *Hillemeier MM, Farkas G, Morgan PL, et al. Disparities in the prevalence of cognitive delay: how early do they appear? Paediatr Perinat Epidemiol 2009; 23: 186–98.*

15 *Morag I, Bart O, Raz R, et al. Developmental characteristics of late preterm infants at six and twelve months: a prospective study. Infant Behav Dev 2013; 36: 451–6.*

16 *Whitehouse AJ, Robinson M, Newnham JP, et al. Do hypertensive diseases of pregnancy disrupt neurocognitive development in offspring? Paediatr Perinat Epidemiol 2012; 26: 101–8.*

17 *Robinson M, Mattes E, Oddy WH, et al. Hypertensive diseases of pregnancy and the development of behavioral problems in childhood and adolescence: the Western Australian Pregnancy Cohort Study. J Pediatr 2009; 154: 218–24.*

18 *Talge NM, Holzman C, Van Egeren LA, et al. Late-preterm birth by delivery circumstance and its association with parent-reported attention problems in childhood. J Dev Behav Pediatr 2012; 33: 405–15.*

19 *Williams F, Watson J, Ogston S, Hume R, Willatts P, Visser T; Scottish Preterm Thyroid Group. Mild maternal thyroid dysfunction at delivery of infants born ≤34 weeks and neurodevelopmental outcome at 5.5 years. J Clin Endocrinol Metab. 2012; 97(6):1977-85.*

20 *Haddow JE, Palomaki GE, Allan WC,et al. Maternal thyroid deficiency during pregnancy and subsequent neuropsychological development of the child. N Engl J Med 1999 341: 549–555*

21 *Johnson S, Hollis C, Kochhar P, et al. Autism spectrum disorders in extremely preterm children. J Pediatr 2010; 156: 525–31.*

Table 1. Characteristics of study population, n (%)

	Late Preterm n(%)	Term n(%)	*p*
Maternal & Neonatal characteristics			
Maternal Age (<35 age)	36(85,7)	43 (74,2)	*0,230*
Multiple Pregnancy	7 (16,7)	2 (3.4)	*0,023*
C/S	40 (95,2)	36 (62.1)	*<0,001*
Assisted Reproductive Techniques (yes)	3(7,1)	0(0)	*0,04*
Male	21 (50)	29 (50)	*1,000*
Birth Weight (gr)	2,55±0.49	3,20±0,44	*<0,001*
Neonatal Morbidity Factors			
Congenital pneumonia	2 (4,8)	0 (0)	*0,095*
Pulmonary cystic malformation	1 (2,4)	0 (0)	*0,240*
Respiratory distress syndrome	2 (4,8)	0 (0)	*0,095*
Early neonatal sepsis	3 (7,1)	0 (0)	*0,040*
Jaundice	32 (76,2)	29 (50)	*0,008*
Phototherapy	16 (38,1)	11 (19)	*0,034*
NICU hospitalization period (day)	3,64±5,28	0,79±2,49	*<0,001*
Maternal morbidity			
Diabetes mellitus	6 (14,3)	3 (5,2)	*0,118*
Preeclampsia/eclampsia	11 (26,2)	0 (0)	*<0,001*
An/poly/oligohydramnios	6 (14,3)	1 (1,7)	*0,016*
Hypothyroidism	4 (9,5)	5 (8,6)	*0,877*
Early membrane rupture	2 (4,8)	2 (3,4)	*0,742*
Urinary Tract Infection	21 (50)	19 (32,8)	*0,084*

Table 2. ADSI Scores of Late Preterm and Term Babies

ADSI Subtests	Late Preterm n=42	Term n=58	
	Mean±ss	Mean±ss	*p*
ADSI General	73,90±10,45	73,51±10,56	*0,856*
ADSI Language	23,33±3,96	23,12±3,87	*0,789*
ADSI Fine motor	14,52±1,25	14,48±1,50	*0,885*
ADSI Gross motor	15,29±3,32	15,03±3,57	*0,722*
ADSI Socialization	21,12±2,73	21,02±3,25	*0,869*

Table 3. Comparison of ADSI Scores and Demographic Characteristics of Late Preterm and Term Babies

									ADSI
	General			Language			Fine motor		
	Late preterm	Term	*p*	Late preterm	Term	*p*	Late preterm	Term	*p*
Delivery									
CS	74,1±10,7	74,1±7,8		23,4±3,9	23,3±3,3		14,5±1,3	14,4±1,3	
Vaginal birth	71,0±4,2	72,5±14,6		22,5±4,9	22,8±4,4		14,5±0,7	14,5±1,9	
p	*0,595*	*0,962*		*0,753*	*0,910*		*1,000*	*0,491*	
Gender									
Female	73,04±8,45	74,06±10,2		23,2±3,6	23,4±3,5		14,71±1,1	14,7±1,4	
Male	74,16±12,3	72,96±11,1		23,5±4,4	22,9±4,2		14,33±1,4	14,3±1,6	
p	*0,588*	*0,889*		*0,920*	*0,833*		*0,293*	*0,550*	
Jaundice(n)	74,2±10,8	73,9±8,2	*0,718*	23,7±3,9	23,4±3,4	*0,761*	14,5±1,3	14,4±1,2	*0*
Breastfeeding									
no	70± …	72,83±6,3		22± …	22,8±2,2		13± …	14,3±1,0	
1-6 month	73,67±13,51	73,6±10,9		23,33±5,13	23,2±4,0		14,4±1,2	14,5±1,6	
6-12 month	74,19±8,74	73,5±10,6		23,4±3,3	23,1±3,9		14,7±1,3	14,5±1,5	
p	*0,924*	*0,869*		*0,946*	*0,850*		*0,396*	*0,799*	

FT53

Takipsiz Bir Fankoni Aplastik Anemili Hasta Vaka Takdimi

Ahmet Osman Kılıç, Kadir Yılmaz, Esra Türe, Fatih Akın, Abdullah Yazar
NEÜ Meram Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları AD

GİRİŞ

Fankoni Aplastik Anemisi, çoğunlukla otozomal çekinik geçişli, nadiren X'e bağlı çekinik kalıtılan, konjenital malformasyonların eşlik ettiği (değişik tarzlarda başparmak anomalisi, mikrosefali, mikroftalmi, ciltte pigmentasyon değişiklikleri, kalp ve böbrek anomalileri) ve malignitelere eğilimli bir kemik iliği yetmezliği sendromudur. Burada, 1.5 yaşında tanı almış sonrasında aile tarafından takibi yaptırılmayan bir vaka takdim edilmektedir.

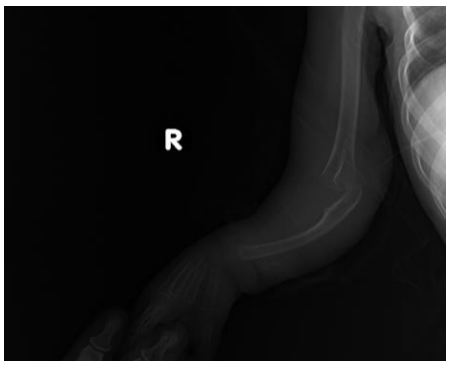
OLGU

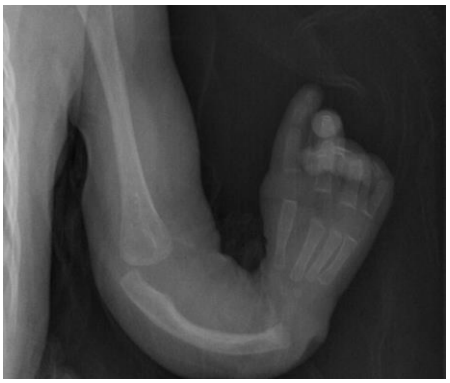
4,5 yaşında, fankoni aplastik anemisi tanılı kız hasta kahverengi kusma şikayeti ile 112 ile Meram Eğitim Araştırma Hastanesine götürülmüş. Hasta orada imza karşılığında reddedilip 112 ile tarafımıza 20:50'de getirildi. Hastanın nakli sırasında damaryolu açılmamış ve tansiyonu alınamamış. Hikayesinden, bugün başlayan kahverengi kusma sonrasında hızlı soluması olduğu öğrenildi. Genel durumu kötü olan hastaya ivedilikle damaryolu açılıp 100 cc serum fizyolojik 5 dakikada yüklendi. Nazogastrik sonra takıldı. Gelenleri de hematemez şeklinde devam etti. Hastanın geliş fizik muayenesinde genel durumu kötü, cilt rengi soluk, ekstremiteleri mor(evre 3 şok) ,dismorfik yüz görünümü mevcut, sağ dış kulak yolu atrezik, vücut sıcaklığı: 35,2°C, nabız: 90/dk, TA: alınamadı, solunum sesleri kaba,derin inspiryum yapıyor, solunum sayısı:30, Spo2: ölçülemedi. Batında organomegali yok. Her iki el başparmağı yok, bilateral el bilekleri radial deviasyonda ve sağ ve sol önkol kısmı kısaydı. Solunumu yüzeyel olan hasta entübe edildi. Kalp tepe atımı alınamayan hastaya kardiyopulmoner resusitasyon başlandı(21:15). Üç dakikada bir adrenalin yapıldı. Müdahale öncesinde alınan kan gazı ph:6,762 pCO2:25,8 pO2:55,3 HCO3:3,9 olarak sonuçlandı. Tam kan sayımı için laboratuvarla telefonla görüşüldü. Hemoglobin ve trombosit değerlerinin çok düşük olmasından dolayı cihazın çalışamadığı öğrenildi. Bikarbonat desteği verildi. Nabız kontrolü yapılsa da ritim asistoli olarak görüldü. 45 dakika kardiyopulmoner resusitasyona devam edildi. 22:00 da kalp tepe atımı kontrol edildi. Ekg çekildi. Asistoli görülen, kalp tepe atımı olmayan hasta exitus kabul edildi.

TARTIŞMA

Fankoni Aplastik Anemisi, sıkı takip gerektiren hematolojik hastalıklardan birisidir. Rutin takiplerin yanında araya giren enfeksiyonlar, trombosit değerindeki düşüklüklere bağlı kanamalar, eşlik eden kardiyak veya böbrek anomalileri de hastalığın seyrini önemli ölçüde etkilemektedir. Hastalığın ilerleyen dönemlerinde miyelodisplazi veya lösemi gelişimi açısından dikkatli olunmalıdır. Yılda bir veya özel klonal veya morfolojik anormalliklerin gelişmesi durumunda daha sık olarak kemik iliği aspirasyonu ile sitoloji, sitogenetik ve lösemi için prediktif olabilecek sitogenetik anomaliler (3p26q29 amplifikasyonu ve 7q delesyonu) için FISH analizi için yapılması gerekmektedir. Sellülartite için kemik iliği biyopsisi yapılmalıdır. Hastanın tam kan sayımları izlenmelidir. Sitopeniler hafif-orta aralıktaysa ve sitogenetik anomali yoksa tam kan sayımı her 3-4 ayda bir yapılıp yılda bir de kemik iliği aspirasyonu yapılmalıdır. Sitopeni ile birlikte sitogenetik anomali varsa veya açık MDS gelişimi olmadan belirgin displazi varsa tam kan sayımı 1-2 ayda bir, kemik iliği aspirasyonu da 1-6 ayda bir yapılmalıdır. Ayrıca tekrar çocuk sahibi olma isteği taşıyan ve ilgilenen hastaların ailesine prenatal tanı ve preimplantasyon genetik tanı hakkında bilgi verilmelidir.

Olgumuz ise ilk olarak, 2017 yılında dış merkezden Fankoni Aplastik Anemisi ön tanısıyla tarafımıza başvurdu. Yatış sırasında kemik iliği aspirasyonu ve kemik iliği biyopsisi yapıldı. Sol renal agenezisi de olan hasta çocuk nefroloji takibine alındı. Taburcu edildikten sonra hasta düzenli kontrole getirilmedi. 2017 yılında tekrar servis yatışı olan hasta daha sonra tarafımıza başvuru yapmadı. Acil kliniğe başvurduğunda genel durum kötü, solunumu yüzeyel, ekstremiteleri soğuk ve soluk görünümdeydi. Sitopenisi ağır düzeydeydi. Fankoni Aplastik Anemisi bu açıdan düzenli takip gerektiren ve erken tedavi planlanması gereken bir hastalıktır. Mortalite açısından klinik takip oldukça önemlidir.





FT55

A Follow-up Case Study on Transition to Parenting on Meleis' Trail

Figen Türk Düdükcü[1] Fatma Taş Arslan[2]

[1]Department of Nursing, College of Health Science, KTO Karatay University, Konya.

[2]Department of Nursing, Faculty of Nursing, Selçuk University, Konya.

Abstract

Transition is a role change from a known state to another unknown state. Personal, social and community perceptions can facilitate or prevent the transition and transition. Nurses are at the center of these changes and transition. Transition Theory guides nurses to understand transition to parenting, a developmental type of transition. The transition to motherhood can reflect both the strongest and most vulnerable situation of a woman. By using Transition Theory, nurses understand the level of awareness of the individual, the responsibilities that she / she needs to take, the change to be experienced, the beginning and expected end time of the transition, the critical turning points, the important points, the impact of change on daily life, the stages of the individual and the reactions of the different stages of this process. In this study, the nursing approaches of the 18-year-old mother, RC, are discussed according to the Transition Theory. The transition from adolescence to adulthood, from celibacy to marriage and parenting was facilitated by appropriate nursing interventions and follow-up to a woman experiencing transition, and preventive factors were controlled by mobilizing support systems.

Keywords: *Transition Theory, motherhood, nursing*

Introduction

Transition refers to the role transition from a known state to another unknown state (Meleis 2010). Being a parent, adolescence, marrying all these life events may look different from each other, but the question a healthcare professional should ask is; what could all of these things have in common? All are the changes that initiate a transition. During transitions, individuals, families and communities experience unfamiliar environments, emotions, and then face different uncertainties about what might happen next. They may have expectations, be knowledgeable or uninformed, encounter disruptions in their daily lives and routines, all of which affect their health and well-being (Meleis 2019). Meleis defined the transitions available to nurses in 4 categories. These; developmental, situational, health-illness, institutional transitions (Meleis 2010).

Developmental transitions are related to periods of growth and development in the normal course of life. There are many different transitions, such as transition to adolescence and transition to parenting. The state of these transitions may be related to physiological and mental health problems (Meleis 2010). Being a parent is a transformative experience with personal changes, social roles and changes in daily routines. Although the birth of a baby is usually cheerful, there may be time for increased psychosocial stress and health behavioral changes in the postnatal period, including sleep disturbances and reduced physical activity (Saxbe 2018). The transition to parenting, where the majority of individuals live, is one of the most striking and intense transitions in the family life cycle (Martins 2018).

By using Transition Theory, nurses understand the level of awareness of the individual, the responsibilities that he / she needs to take, the change to be experienced, the beginning and expected end time of the transition, the critical turning points, the important points, the impact of change on daily life, the stages of the individual and the reactions of the different stages of this process. In this study, RC, who has been an 18-year-old mother, is handled according to Transition Theory and nursing approaches are stated.

CASE REPORT

Descriptive Features and Story

Ms. RC is 18 years old, high school graduate, married and pregnant. She got married at the age of 17 and soon became pregnant. When we met at 36 weeks of gestation, she stated that she was very anxious and afraid of giving birth. "*Im My friends haven't even married yet, and I became a mother, it seemed like a game to me, but real life was very different from what I thought*" she regretted. Ms. RC lives with her husband's family. The woman who lives with her husband's family in the tradition of her environment is responsible for the daily routine of the house. Ms. RC stated that since she didn't have to take on such responsibilities before her marriage, her new responsibilities made her quite a challenge.

Conceptual Framework of Transition Theory and Case

Transition Theory guides nurses to understand transition to parenting, a developmental type of transition (Barimani ve ark 2017). In the conceptual framework of Transition Theory, the transition experienced by Ms. RC is examined; In the last few years, it has started to experience the process from adolescence to adulthood, from celibacy to marriage, to parenting. The transition from adulthood to adulthood and parenting is a developmental transition and marrying is a situational transition. Ms. RC's transition to adulthood is still an ongoing process, so it was seen that she was experiencing multiple transitions. According to the nature of transition theory, the transitions of RC to marriage and parenting are consecutive and related transitions. Ms. RC's transition to adulthood is still an ongoing process, so it was seen that she was experiencing multiple transitions. According to the nature of transition theory, the transitions of RC to marriage and parenting are consecutive and related transitions. *Awareness:* Meleis states that awareness is not a necessary condition for the transition experience. Awareness is one of the basic concepts for achieving positive results at the end of the transition (Meleis 2010). According to her, Ms. RC was not aware of the transitions she had experienced before. She feels responsible for not realizing the situations in which she may live. *Taking Responsibility (Participation):* The level of responsibility taken is another feature of the transition. Responsibility is the degree to which one participates in the transition (Meleis 2010). Ms. RC's responsibility for the transition to marriage is higher than usual because she lives with her parents. It was seen that the level of knowledge about the responsibility to be taken during the transition to parenting was very low. She does not know what to take care of, care for, breastfeed, to breastfeed, to store, to support the baby's development and to ensure the safety of a baby. In a study, it was determined that women who are mothers for the first time (such as newborn bath, umbilical cord care, breastfeeding and colic) need information on many subjects (Silva ve Carneiro 2018). Trainings given to mothers on newborn care improve mother and infant health, increase mother's knowledge about newborn care and reduce anxiety in primiparous mothers (Shrestha ve ark 2016). Appropriate nursing interventions increase parents' compliance in safe sleep practices (Moon et al. 2017). Breastfeeding counseling given to mothers positively affects women's breastfeeding self-efficacy (Gölbaşı ve ark 2019) and breastfeeding rates positively (Gölbaşı ve ark 2019, Yılmaz ve Aykut 2019). It was found that the education provided by nurses working in primary care had positive effects on mothers' knowledge about infant health and

infant feeding practices (Horwood ve ark 2017). *Change and Diversity*: One of the important features of transition. Although they may seem similar meanings, they are not synonymous. These features should not be used interchangeably. All transitions have changes, but not all changes may be related to the transition. The transition to adulthood and parenting are long-term processes, and adaptation to new roles and situations requires change (Meleis 2010). Nurses are at the center of these changes and transition. It always supports individuals who are prepared and facing change. Difference requires individuality. Transitions provide a guide and tool for understanding, communicating, and interpreting theory when faced with changes that affect individual comfort. It provides a framework for assessing discontinuities and changes in valuable relationships in daily living routines. It also helps to learn the deficiencies and opportunities in knowledge, skills, support and resources. It also allows the assessment of ways in which change has changed a person's life in a positive way (Meleis 2019). *Time Flow:* Transitions are chronologically in motion and flow. In time, the transition is the beginning and the end. Transitions can be single, multiple, sequential, simultaneous, related and unrelated (Meleis 2010). While Ms. RC's transition to marriage and parenting is consecutive, multiple, related, her transition to adulthood is synchronized with other transitions. The limits of the transition experience over time may not always be clear. The transition experience of each individual is personal, private and does not end at the same time. It was considered that there were ongoing processes in assessing Ms. RC's transition experiences. The transition to motherhood begins with learning the pregnancy and continues until the baby is four months old (Barimani 2017). *Important Milestones and Events:* Critical or milestones need to be identified to identify appropriate interventions. Critical points can be different for everyone, reflecting the different nature and characteristics of change (Meleis 2019, Meleis 2010). Ms. RC stated that being the mother was the most important life event. However, according to our evaluations during the interviews, the problems experienced during the transition to marriage had the potential to be a preventive factor for the transition to parenting.

Health professionals should make the experience of motherhood different for each woman into a positive experience. Differences in the process of motherhood of women should be considered and individualized initiatives should be planned. Thus, the process of adaptation to the role of motherhood should be supported (Deliktaş ve ark 2015). By using Transition Theory, nurses understand the level of awareness of the individual, the responsibilities that she / she has to take, the change that will be experienced as a result, the beginning and expected end time of the transition, the critical turning points, the important points, the impact of the change on daily life, the stages of the patient and the reactions of the different stages of this process. With the attention of nurses, individuals can overcome important milestones and uncertainties in transitions (Barimani et al 2017).

Factors that Facilitate and Prevent Transition

Personal, social and community situations can facilitate or prevent the transition process and its consequences (Meleis 2010). Barimani et al. (2017) stated that transition to parenting may have positive / negative effects on family life, so understanding the factors that facilitate or prevent transition may help nurses to support the successful transition experience (Barimani et al 2017).

Personal Characteristics

The meaning given by the individual to the transition is important (Barimani ve ark 2017, Meleis 2010). Because Ms. RC had to live with her husband's family in our first meetings, she had negative implications for the transition. These are the factors preventing the transition. We planned to have Mrs. RC to see parenthood as part of her life, to enjoy the growth of her baby, to prepare for motherhood, to have knowledge and to be ready for the transition.

Because Barimani et al. (2017) found that factors such as false / unrealistic expectations about parenting, stress-feeding and insomnia, being inexperienced and unprepared, and lack of knowledge about reality are the features that prevent the transition (Barimani ve ark 2017). We tried to create realistic expectations by addressing issues such as protection and improvement of the health of the baby, baby care, which may have positive meanings in our education content, both the prepared mother and the common problems. Being a mother is a strong and vulnerable situation for a woman (Davis-Floyd 2003). We supported Ms. RC's strengths and prepared them for situations that could lead to weakness.

Community Features

The community transition in the living environment can be facilitating or complicating. Role models in the community, advice from trusted persons, healthcare staff, and reliable information obtained can facilitate the transition. Support and lack of information are among the preventive factors.

Social Features

Social conditions are important for transition. Although social rules and culture provide some information about what is expected of the new mother, there are no rules or guidelines about motherhood (Mercer 1981). Therefore, many women try to reach the right one through trial and error (Beck 1996). This can be a hindrance to the transition experience. Women who have experienced adolescent pregnancy, such as Ms. RC, may find it difficult to meet social expectations.

Physical, Psychological, Social, Spiritual Nursing Care According to Transition Theory

We met Ms. RC when she came to the family health center for routine check-up. We performed a total of six nursing practices at 36 weeks of gestation, first week after delivery, first month, second month, fourth month and sixth month.

In our first interview, we trained on breastfeeding, breastfeeding and storage, preparation for childbirth, support of infant development, newborn screening, vaccination, protection of infant health, common problems in infants and ensuring baby safety. We used power point presentation, breast model, baby model and development support materials. At the end of the training, we prepared the training booklet which we prepared and received the opinion of six experts. Parents' accessibility to nurses and short messages sent to parents for information provide continuity of care in pediatric patients and improve the quality of care (Ladley ve ark 2018). We gave him a telephone number and a training booklet when she needed it. We planned all our meetings in advance and made an appointment. Mrs RC had a daughter of 3200 gr. We met for the second time 6 days after birth. We took heel blood from the baby for newborn scans. We practically checked the baby's breastfeeding status. We received feedback from the previous training. She seemed pretty unhappy and tired. She stated that she could not make the necessary applications to support the development of the baby in the prenatal trainings, that his mother-in-law was interested in the baby around his community and that she should take care of the other chores of the house. After identifying this situation, we invited Ms. RC's wife to the training room as a social support system that would facilitate the transition stated by Meleis. Sitting away from her husband and child, we explained to her husband, who seemed rather timid and uninterested, the benefits of breastfeeding for the health of mother and baby, the importance of supporting baby development, and the important points of our educational content. We gave the father tasks to make a special contribution to the health, growth and development of his baby.

In the third meeting, Ms. RC came with her husband. His wife had fulfilled our responsibilities and her husband and baby were acting close and concerned. At the same time, knowing the importance of his wife in the house as much as possible to spend time with the baby. Ms. RC seemed pleased to have had the opportunity to spend time with her husband and

baby. However, because the baby suckles for a long time, his mother-in-law wants to give the formula milk to the baby, babies who take the formula said she could get better weight. We repeated the training on breastfeeding and its importance and received feedback.

We did our fourth education at the end of the second month after the birth. Ms. RC stated that she was pleased with her marriage and being a mother. When we checked the mother-infant attachment with the mother-infant attachment scale, which was validated by Kavlak, we found that the attachment level was quite good. However, even though Ms. RC knew the methods of increasing breast milk, we found that she started to give formula milk to her baby while being influenced by her environment. In addition to face-to-face interviews, we stopped by breastfeeding for about three months, although we called and advised. We did not get positive results from our initiatives on this subject.

We did our fifth education at the end of the fourth month after the birth. We invited his wife and mother-in-law to this training program. However, only his wife came along with Ms. RC, her mother-in-law refused to come. In the feedbacks, they reported that her husband supported Ms. RC at home and allowed her to spend more time with her baby. His wife was impressed by the education she had participated in earlier and said that she didn't know the importance of spending quality time with the baby before.

We did our sixth education at the end of the sixth month after the birth. In this training, we first identified feedback and deficiencies in information and practices. We received positive feedback from Ms. RC. Unhappy and dissatisfied during the first interviews, his condition changed and she interacted with his baby.

Process Indicators of a Healthy Transition

According to Meleis, development indicators are measurable indicators showing how the transition progresses. *Development indicators;* interaction, attachment, positioning, self-confidence and coping (Körükcü ve Kabukcuoğlu 2015). *Interaction;* Meleis considered taking care of the baby as the mother's interaction with her baby (Meleis 2010). Ms. RC stated that she was able to take care of her baby and that she was satisfied. Attachment Feeling; One of the concepts of attachment sensation, Meleis, mentioned trust in healthcare workers (Meleis 2010). When she needed Ms. Rech, she reached out to us and answered her questions. Attachment to health personnel is an indicator of positive transition. Nasal congestion, rash problems, such as counseling instead of going to the health care institution easily solved at home. *Development of Self-Confidence and Coping;* Another aspect that positively reflects the nature of the transition process is the increase in the level of self-confidence with the participation of the individual. Ms. RC, who had increased self-confidence, was able to cope with the difficulties in caring for her baby.

Development (Result) Indicators of a Healthy Transition

The first of the two outcome indicators for healthy transition is the mastery of new skills, and the second is the development of a flexible integrative identity. These development indicators improve the quality of life (Meleis 2010). Ms. RC had her baby's vaccinations screened fully, coped with common problems, fulfilled the practices we suggested for her baby's development, paid attention to sleep safety, and took the necessary measures to prevent falls and accidents. These situations are indicators of mastery. However, we were unable to ensure that Ms. RC continued to breastfeed. In this regard, the community was under the influence of characteristics. If we could convince her mother-in-law to come to the trainings, our ability to cope with this negative effect could have increased. *Flexible Integrated (Adaptable) Identity Development;* The nurse should thoroughly assess the individual's health and make the right decision for the interventions. Women should understand how to integrate multiple roles despite social, cultural, political, economic pressures and constraints. The support we received

from Ms. RC's wife facilitated the transition to marriage, while preventing the community from restricting and preventing the transition from parenting.

As a result;

The theory of transition seems to be a suitable tool for nurses to understand the transition to parenting. It also has the potential to help nurses identify appropriate strategies and practices to provide parents with adequate assistance and support. This is important because, as Meleis points out, an important function of nursing is to help people manage their life transitions. We recommend longitudinal studies over time to fully understand the transition experiences in future studies.

References

1 *Barimani M, Vikstrom A, 2015. Successful early postpartum support linked to management, informational, and relational continuity. Midwifery; 31: 811–817.*

2 *Beck CT, 1996. A meta-analysis of predictors of postpartum depression, Nursing Research, 45, pp. 297-303.*

3 *Davis-Floyd R, 2003. Birth as an American Rite of Passage, University of California Press Berkely and Los Angeles, California.*

4 *Deliktaş A, Körükçü Ö, Kukulu K, 2015. Motherhood experience in different groups. MÜSBED, 5(4), 274-283.*

5 *Gölbaşı Z, Tuğut N, Karataş M, Çetin A, 2019. The effect of postpartum breastfeeding counselling supported with short message services and telephone calling on breastfeeding practices over six months. Acıbadem University Journal of Health Sciences; 10(1).*

6 *Horwood C, Butler L, Barker P, Phakathi S, Haskins L, Grant M, Mntambo N, Rollins N, 2017. A continuous quality improvement intervention to improve the effectiveness of community health workers providing care to mothers and children: a cluster randomised controlled trial in South Africa. Human resources for health, 15(1), 39.*

7 *Körükcü Ö, Kabukcuoğlu K, 2015. Perinatal Outcomes of Pregnant Women with Preterm Premature Rupture of Membranes in Our Clinic, T. C. Akdeniz University, Institute of Health Sciences, Department of Obstetrics and Gynecology Nursing Unpublished PhD Thesis.*

8 *Ladley A, Hieger AW, Arthur J, Broom M, 2018. Educational Text Messages Decreased Emergency Department Utilization Among Infant Caregivers: A Randomized Trial. Academic pediatrics, 18(6), 636-641.*

9 *Martins CA, 2019. Transition to parenthood: consequences on health and well-being. A qualitative study. Enfermería Clínica (English Edition), 29(4), 225-233.*

10 *Meleis, A. I. (2019). Facilitating and Managing Transitions: An Imperative for Quality Care. Investigación en Enfermería: Imagen y Desarrollo, 21(1).*

11 *Meleis AI, 2010. Transitions Theory: Middle Range and Situation Spesific Theories in Nursing Research and Practices. Springer Publishing Company, New York.*

12 *Mercer RT, 1981. A theoretical framework for studying factors that impact on the maternal role Nursing Research, 30, pp. 73-77.*

13 *Moon RY, Hauck FR, Colson ER, Kellams AL, Geller NL, Heeren T, Heeren T, Kerr SM, Drake EE, Tanabe K, McClain M, Corwin MJ, 2017. The effect of nursing quality improvement and mobile health interventions on infant sleep practices: a randomized clinical trial. Jama, 318(4), 351-359.*

14 *Özgüneş ZÖ, 2019. The effect of breastfeeding training given to mothers on successful breastfeeding, Halic University Institute of Health Sciences, Department of Nursing, Unpublished PhD Thesis.*

15 *Saxbe D, Rossin-Slater M, Goldenberg D, 2018. The transition to parenthood as a critical window for adult health. American Psychologist, 73(9), 1190.*

16 *Shrestha M, Ulak M, Strand TA, Kvestad I, Hysing M, 2019. How much do Nepalese mothers know about child development?. Early Child Development and Care, 189(1), 135-142.*

17 *Silva CDS, Carneiro MDNF, 2018. First-time parents: acquisition of parenting skills. Acta Paulista de Enfermagem, 31(4), 366-373.*

18 *TNSA, Turkey Demographic and Health Survey, 2013.*
WHO, https://www.who.int/news-room/fact-sheets/detail/adolescent-pregnancy
19 *Yılmaz M, Aykut M, 2019. The effect of breastfeeding training on exclusive breastfeeding: a randomized controlled trial. The Journal of Maternal-Fetal & Neonatal Medicine, 1-8.*
20 *Yıldız İ, Bayat M, 2018. Using motivational interviewing in children and adolescents. Online Turkish Journal of Health Sciences, 3(4), 249-257.*
21 *Zellman GL, Perlman M, Karam R, 2014. How Moroccan mothers and fathers view child development and their role in their children's education. International Journal of Early Years Education, 22(2), 197-209.*

FT56

The Effect of Mozart's Music in Childhood Epilepsy: A Systematic Review

Dilek Şayık[1], Ayfer Açıkgöz[2], Deniz Yiğit[2]

[1]Eskisehir City Hospital, Training Unit, Eskisehir

[2]Eskisehir Osmangazi University Faculty of Health Sciences, Department of Pediatric Nursing, Eskisehir

ABSTRACT

Objective: This systematic review was carried out in order to systematically investigate the studies on the effects of Mozart's music (Mozart Effect) on reducing seizures in children with epilepsy.

Methods: The relevant search was made in Science Direct, EBSCOhost, Google Scholar, Wiley Online Library, Turkish Citation Index, PubMed, American Academy of Pediatrics, and National Thesis Center databases. As a result of the database search, 10 articles that were published in the past 10 years and that met the research criteria were included in the study.

Findings: It was determined that Mozart's music was applicable in children with epilepsy in various age groups. It was found that music was effective in reducing the number of seizures and the epileptiform discharges in EEG in children.

Conclusion: In the studies assessed, it was seen that Mozart's music is an effective application for controlling epilepsy in children. It is recommended to increase the use of Mozart's music for children with epilepsy.

Keywords: *Child, Çocuk, Epilepsi, Epilepsy, Mozart Effect, Mozart Etkisi.*

INTRODUCTION

Chronic disease is defined as a condition that causes permanent disability and requires special education, long-term care, and treatment (1). Epilepsy, one of the chronic diseases, is a neurological condition that affects 0.5-20% of children (2-5). The first seizure of 75% of epileptic patients is experienced under the age of 20 (3, 5, 6). The clinical appearance of seizures depends on which region of the brain they originate. During seizures, involuntary movements, changes in perception, behavior or posture, and epileptiform discharges in brain waveforms may be seen (6-8). Many negative situations such as injury, respiratory standstill, loss of consciousness may be experienced during or after a seizure (9-11).

In the treatment of epilepsy, antiepileptic drugs, ketogenic diet, vagal nerve stimulation, and epilepsy surgery are implemented (2, 6, 12). However, recently, it is seen that non-pharmacological methods have been used to reduce the number and duration of seizures. One of these methods is the use of music by Mozart, one of the most important composers of classical music. This systematic review was conducted to determine the effect of Mozart's music (Mozart Effect) on reducing seizures in children with epilepsy, to review the studies published, and to systematically examine the data obtained from the studies. In the review, answers were sought to the following questions.

What are the general characteristics of studies that used Mozart's music to reduce seizures of children with epilepsy?

What is the effect of Mozart's music on seizures of children diagnosed with epilepsy?

MATERIALS AND METHODS

This study was prepared in accordance with the 2009 guide of the Centre for Reviews and Dissemination (CRD) (13). In the research, which was conducted to determine the effect of Mozart's music (Mozart Effect) on reducing seizures of epileptic children, Science Direct, EBSCOhost, Google Scholar, Wiley Online Library, Turkish Citation Index, PubMed, American Academy of Pediatrics and National Thesis Center databases were searched using the keywords "epilepsy", "child", "Mozart Effect", "epilepsi", "çocuk", "Mozart Etkisi" with a time limit between 01.01.2009 and 01.08.2019. During the literature search, among 186 articles published between January 2009 and August 2019, 10 articles that met the selection criteria were included in the study.

Inclusion criteria of the study: Articles with full-text access that were published between 2009-2019 and in which Mozart's music was used on children with epilepsy were included.

Exclusion criteria of the study: Review articles, abstracts, and panel presentations were excluded.

Ten articles that met the inclusion criteria were included in the study. The process of the systematic review is shown in Table 1.

Table 1. Article selection process of the systematic review

Number of articles reached in database search n= 186 Google Scholar (n=156) National Thesis Center (n=0) EbscoHost (n=1) American Academy of Pediatrics (n=0) Science Direct (n=13) Pubmed (n=6) Turkish Citation Index (n=0) Wiley Online Library (n=10)
Number of studies excluded according to exclusion criteria n=171 Google Scholar (n=148) EbscoHost (n=1) Science Direct (n=10) Pubmed (n=2) Wiley Online Library (n=10)
Number of articles related to the study n= 15 Science Direct (n=3) Google Scholar (n=8) Pubmed (n=4)
Number of articles repeated n=5
Number of articles used in the study n=10

FINDINGS

The objectives, sample sizes, measurement tools and statistical analyses of the studies included in the review are given in Table 2. It was found that the number of samples was at least 11 (16.21) and at most 64 (18). In our systematic review, it was seen that seven (14-19,22) of the ten studies used EEG in order to measure the effect of Mozart's music on brainwaves in epileptic patients, two (21,23) used video-EEG, and one (20) used qEEG. In addition, it was seen that Mozart K.448 composition was used in six (14-16,19,20,22) of the studies; Mozart K.448-Mozart K.545 was used in two (17,18) of the studies; Mozart composition was used in two (21,23) of the studies.

Table 2. Objectives, Sample Sizes, Measurement Tools of the Studies Examined and Characteristics of Statistical Analyses

Authors	The objective of the study	Place, Universe, and Sample	Age	Intervention	Research Type / Result
Lin et al. (2010) (14)	To investigate the effect of two versions of Mozart Sonata D Major K.448 on epileptic discharges.	Taiwan, N:58, 30 male and 28 female children,40 of them had an IQ ≥ 70; 18 of them had an IQ< 70.	1-19 years (mean 98.46±37.90 months)	EEG was measured before, during and after 8-minute Mozart's piano K.448 (60-70 db) music application. MozartString K.448 version was played one week after the first measurement and the same measurements were taken.	Single-group pretest-posttest/ Epileptiform discharges continued to decrease after music in 76.1% of the patients.
Lin et al. (2011a) (15)	To investigate the effect of Mozart K.448 on epileptic discharges in children with epilepsy in the long term.	Taiwan, N:18, 8 male and 10 female children,11 had an IQ ≥ 70; 7 had an IQ< 70.	7 ay-14 years (mean 7 years 10 months± 3 years 6 months)	Mozart K.448 was played to the children with epilepsy who had not previously listened to Mozart K.448 once for 8 minutes before going to bed for 6 months. The first EEG measurements were taken 15 minutes before Mozart K.448 application, later measurements were taken at 1st, 2nd and 6th months when the patients were in the same state of wakefulness.	Single-group pretest-posttest A decrease was determined in epileptiform discharges in EEG chronologically with long-term Mozart K.448 application. The highest recovery was found in patients with normal intelligence level.
Lin et al. (2011b) (16)	To investigate the effect of Mozart K.448 applied in addition to the treatment of	Taiwan, N:11, 6 male and 5 female children diagnosed with refractory epilepsy who used 2 and more antiepileptic drugs	2-14 years (mean 9 years 1	Mozart K.448 was played to the children with refractory epilepsy 1 time for 8 minutes before going to bed for 6 months. The parents recorded the frequency of seizures on a daily basis. Assessments on the	Single-group pretest-posttest The number of seizures decreased by 53.6±62.0% after Mozart K.448 application.

	children with refractory epilepsy.	more than 1 year, 2 had an IQ ≥ 70; 9had an IQ< 70.	month ± 4 years 5 months)	frequency of seizures were made monthly before and after music. Antiepileptic treatments remained the same for 6 months.	
Lin et al (2012) (17)	To investigate the effect of Mozart K.545 and K.448 on epileptic discharges in epileptic children.	Taiwan, N:39, 19 male and 20 female children diagnosed with epilepsy, 32 had an IQ ≥ 70; 5 had an IQ < 70; 22 with unidentified IQ.	2-17 years (mean 7 years 3 months ± 3 years 5 months)	EEG was measured before, during and after Mozart K.448 (60-70 db) music application. Mozart K.545 version was played one week after the first measurement and the same measurements were taken. The frequency of epileptiform discharges was compared.	Single-group pretest-posttest No active seizure was seen in any patient during the study. A significant decrease was observed in epileptiform discharges after Mozart's music.
Lin et al (2013) (18)	To investigate the effect of Mozart's music on epileptiform discharges and parasympathetic activation.	Taiwan, N:64, 31 male and 33 female children diagnosed with epilepsy, 54 had an IQ ≥ 70; 9 had an IQ< 70; 1 with unidentified IQ.	2-15 years (mean 7 years 10 months ± 3 years 1 month)	EEG and ECG were measured before, during and after Mozart K.448 or K.545 music application. 41 children chose to listen to Mozart K.448 and 23 children chose Mozart K.545.	Single-group pretest-posttest No significant difference was found between the results of the two music. The frequency of interictal discharges decreased during music application in most of the patients.
Lin et al. (2014a) (19)	To investigate the effect of Mozart K.448 music on seizure recurrence in children with epileptiform	Taiwan, N:48, Treatment (n:24) and control (n:24) groups, 25 male and 21 female children (in total 46) with first non-provoked seizure who did not use antiepileptic drugs until	Treatment group 9 years 6 months ± 3 years 10 months, Control	The children in the treatment group listened to Mozart K.448 music before going to bed for at least 6 months. The control group received routine care. EEG was measured before music and at 1st, 2nd, 6th months.	Randomized controlled There was a significant decrease in epileptiform discharges after Mozart K.448 application (at 1st, 2nd, 6th months)

	discharge who had the first non-provoked seizure.	the second seizure, 43 had an IQ ≥ 70; 2 had an IQ< 70; 1 with unidentified IQ.	group 8 years 7 months ± 3 years 10 months	Seizure recurrence and epileptiform discharge reduction rates were compared.	
Lin et al. (2014b) (20)	To estimate the effect of Mozart K.448 music on children with epilepsy using the qEEG method.	Taiwan, N:19, 8 male and 11 female children diagnosed with epilepsy with effective EEG segments (n:10) (*over 25% reduction in epileptiform discharges*) and with ineffective EEG segments (n:9) (*less than 5% reduction in epileptiform discharges*) çocuk,17 had an IQ ≥ 70; 2 had an IQ< 70.	4-12 years Effective group 8 years 7 months ± 3 years 3 months, Ineffective group 8 years 10 months ± 3 years 9 months	EEG was measured before and during music application in two parallel periods and the results were compared with qEEG.	Single-group pretest-posttest The therapeutic effect of music in patients with epilepsy was confirmed with qEEG.
Coppola et al. (2015) (21)	To determine the effect of Mozart's music in epileptic children diagnosed with Drug-Resistant Encephalopathy.	İtaly, N:11, 7 male and 4 female children diagnosed with Epilepsy with Drug-Resistant Encephalopathy	1-21 years	EEG was recorded for 20 minutes on the same day (TIME 0) before, during and after the application of Mozart compositions. Children were given electronic ear" device to listen to music. An epilepsy diary was given to the caregivers to record the data. With the website password given to parents, children were allowed to listen to music at the desired time for 2 hours a day for 15 days. After 15	Single-group pretest-posttest The decrease in the total number of seizures (11/11) from baseline value was -≥51.5% in 15-day music therapy and -≥20.7% within post-treatment 2 weeks.

				days (TIME 1), the EEG of the patients was re-measured. After 1 month (TIME 2), the EEG of the patients was re-measured.	
Grylls et al. (2018) (22)	To investigate the effect of Mozart's music on EEG in children diagnosed with epilepsy.	Scotland, N:45, 22 male and 23 female children with epileptiform activity	2-18 years (mean 7 years 10 months)	EEG was measured before, during and after Mozart K.448 (60-70 db) music application. Then children's songs were played and the same measurements were taken. The frequency of epileptiform discharges was compared.	Single-group pretest-posttest A significant decrease was seen in epileptiform discharges during Mozart's music application.
Coppola et al. (2018) (23)	To compare the two protocols of Mozart's music in children with epilepsy diagnosed with Drug-Resistant Encephalopathy.	İtaly, N:19, First group (n:9) and Second group (n:10), 13 male and 6 female children diagnosed with Epilepsy with Drug-Resistant Encephalopathy	1-24 years 1st group mean=14.2 years 2nd group mean=12.1 years	TIME 0- The video-EEG was taken before the music started. Children were given an "electronic ear" device to listen to music. An epilepsy diary was given to the caregivers to record the data. With the website password given to parents, children were allowed to listen to music at the desired time for 2 hours a day for 15 days. The first group was allowed to listen to Mozart (K.448) sonata. The second group was allowed to listen to Mozart's compositions. After 15 days, the video EEG was taken again.	Randomized two-group pretest-posttest / Mozart's different compositions were found to be more effective in reducing the number of seizures compared to K.448.

DISCUSSION

When the findings of the ten studies discussed in this systematic review were examined, it was found that listening to Mozart's music was beneficial in reducing seizure efficacy in childhood epilepsy (14-23). The epileptiform discharges (14,15,19,22) and the number of seizures (16,19,21,23) were found to decrease in children diagnosed with epilepsy after Mozart K.448 music application. In studies where music application continued for 6 months, there was a more chronological decrease in epileptiform discharges (15) and the number of seizures (16). In the study in which the effects of Mozart K.448 and Mozart K.545 music were compared, it was found that there was a significant decrease in epileptiform discharges of children diagnosed with epilepsy during and after music application and that there was no difference between the two music (18). However, in two other studies, it was seen that Mozart compositions were more effective in reducing epileptiform discharges and the number of seizures compared to K.448 (21, 23).

It was seen that there was no significant difference between the Mozart effect used in reducing epileptic children's epileptiform discharges and seizures and age (15), sex (14-17,19), IQ (14,16,17,19), state of consciousness (14), and etiology (16,17,19). However, in only one study, Mozart K.448 music was provided to children diagnosed with epilepsy for 6 months and the highest recovery in seizures was found in those who had a normal intelligence level (15). There was a positive relationship determined between listening to Mozart's music long-term and intelligence level. It was found that the Mozart effect provided the greatest recovery in epileptic children with generalized (14,15,17,18), central (14,15,17) and frontal (15) discharge.

CONCLUSION

It was seen that the number of studies conducted on the Mozart effect to reduce the negative effects of epileptic seizures on the development of the child has increased in recent years and that the Mozart effect had a positive role in the management of diseases. It is recommended to increase the use of Mozart's music in the treatment of children with epilepsy and to inform the health personnel and their families on this subject.

Referans

1 *Fazlıoğlu K, Hocaoğlu Ç, Sönmez FM. Çocukluk çağı epilepsisinin aileye etkisi. Psikiyatride Güncel Yaklaşımlar 2010;2(2):189-205.*

2 *Efe E, İşler A. Sinir sistemi hastalıkları. Conk Z, Başbakkal Z, Bal Yılmaz H, Bolışık B, editörler. Pediatri hemşireliği. Akademisyen Tıp Kitabevi: Ankara; 2013. s. 611-58.*

3 *Aaberg KM, Gunnes N, BakkenI J et al. Incidence and prevalence of childhood epilepsy: a nation wide cohort study Pediatrics 2017;139(5): e20163908.*

4 *Çavuşoğlu H. Çocuk sağlığı hemşireliği. 10. Baskı Sistem Ofset Basımevi: Ankara;2011.s. 330-48.*

5 *Baykan B, Bebek N, Gürses C, Gökyiğit A. Epilepsi. Öğe AE, Baykan B, Bahar ZS, editörler. Nöroloji içinde. Nobel Tıp Kitapevleri: İstanbul; 2011.s. 311-54.*

6 *Rodgers CC. The child with cerebral dysfunction. Hockenberry MJ, Wilson D, editörs. Wong's nursing care of ınfants and children. 10th ed. Elsevier Mosby: Canada; 2015.p.1425-92.*

7 *İşler A. Epileptik çocuklarda semiyolojik nöbet sınıflamasında modüler eğitim. Ege Üniversitesi Sağlık Bilimler Enstitüsü. Doktora Tezi. İzmir; 2006.*

8 *Werhahn KJ, Hartl E, Hamann K, Breimhorst M, Noachtar S. Latency of interictal epileptiform discharges in long-term EEG recordings in epilepsy patients. Seizure: European Journal of Epilepsy 2015;29: 20-5.*

9 *Ünal AS. Epilepsili çocuğu olan ailelerin problem çözme becerileri. Gülhane Askeri Tıp Akademisi Sağlık Bilimleri Enstitüsü Doktora Tezi. Ankara; 2004.*

10 *Turan FD. Epilepsi hastalığı olan çocuk ve ebeveynlerine yönelik hazırlanan modüler eğitim programının hastalık yönetimine etkisi. Akdeniz Üniversitesi. Doktora Tezi. Antalya; 2015.*
11 *Zararsız M. Epilepside güvenliğin sağlanmasına ilişkin çocuğa ve ebeveynlere verilen eğitimin etkinliğinin değerlendirilmesi. Mersin Üniversitesi Sağlık Bilimleri Enstitüsü. Yüksek Lisans Tezi. Mersin; 2009.*
12 *Hockenberry MJ, Wilson D, Rodgers CC. Wong's Essentials of Pediatric Nursing–Ebook Elsevier Health Sciences; 2016.p. 558-691.*
13 *CfRa D. Systematic reviews: crd's guidance forunder taking reviews in health care. University of York. Centre for Reviews & Dissemination; 2009.*
14 *Lin LC, Lee WT, Wu HC, Tsai CL, Wei RC, Jong YJ, Yang RC. Mozart K.448 and epileptiform discharges: effect of ratio of lower to higher harmonics. Epilepsy Res 2010; 89(2-3): 238-45.*
15 *Lin LC, Lee WT, Wu HC et al. The long-term effect of listening to Mozart K. 448 decreases epileptiform discharges in children with epilepsy. Epilepsy Behav 2011a; 21(4): 420-24.*
16 *Lin LC, Lee WT, Wang CH et al. Mozart K. 448 acts as a potential add-on therapy in children with refractory epilepsy. Epilepsy Behav 2011b; 20(3): 490-93.*
17 *Lin LC, Lee MW, Wei RC, Mok HK, Wu HC, Tsai CL, Yang RC. Mozart K. 545 mimics mozart k. 448 in reducing epileptiform discharges in epilepticchildren. Evidence-Based Complementary and Alternative Medicine 2012; doi:10.1155/2012/607517.*
18 *Lin LC, Chiang CT, Lee MW et al. Parasympathetic activation is involved in reducing epileptiform discharges when listening to Mozart music. Clin Neurophysiol 2013; 124(8): 1528-35.*
19 *Lin LC, Lee MW, Wei RC, Mok HK, Yang RC. Mozart K.448 listening decreased seizure recurrence and epileptiform discharges in children with firs tunprovoked seizures: a randomized controlled study. BMC Complementary and Alternative Medicine 2014a; 14(1): 17.*
20 *Lin LC, Ouyang CS, Chiang CT, Wu HC, Yang RC. Early evaluation of the therapeutic effectiveness in children with epilepsy by quantitative EEG: A model of Mozart K.448 listening-a preliminary study. Epilepsy Res 2014b;108(8): 1417-26.*
21 *Coppola G, Toro A, Operto FF, Ferrarioli G, Pisano S, Viggiano A, VerrottiA. Mozart's music in children with drug-refractory epileptic encephalopathies. Epilepsy Behav 2015; 50: 18-22.*
22 *Grylls E, Kinsky M, Baggott A, Wabnitz C, McLellan A. Study of the Mozart effect in children with epileptic electro encephalograms. Seizure 2018;59: 77-81.*
23 *Coppola G, Operto FF, Caprio F, Ferraioli G, Pisano S, Viggiano A, Verrotti A. Mozart's music in children with drug –refractor yepileptic encephalopathies: comparison of twoprotocols. Epilepsy Behav 2018; 78: 100-3.*

FT57

The Use of Orlando's Interaction Theory in Nursing Care Practice: Celiac Disease

Dilek Şayık[1], Ayfer Açıkgöz[2], Deniz Yiğit[2]

[1]Eskisehir City Hospital, Training Unit, Eskisehir

[2] Eskisehir Osmangazi University Faculty of Health Sciences, Department of Pediatric Nursing, Eskisehir

Summary

Objective: Nursing is a profession that aims to provide care practices for individuals in a good and bad state of health. Therefore, the use of nursing theories and models in nursing care practices has key importance. The nurse-patient relationship maintains therapeutically through the care practices that base on nursing theories and models and integrative care can be provided to the patient. One of the theories that enable the given situation is Orlando's Interaction Theory which creates an empathetic relationship between nurses and patients. The objective of this study is to provide an example of nursing care provided to a child diagnosed with Celiac Disease based on Orlando's Interaction Theory.

Method: The study was designed in the form of a case report and the study data was collected using interviews conducted with the patient and observations.

Findings: As a result of the interviews, it was determined that the patient experienced difficulties in complying with the diet, felt restricted by the family members and overcoming stressful situations. Nursing interventions were planned by evaluating the verbal and non-verbal behaviors of the patient. The study findings showed that the patient exhibited more positive behaviors when his/her needs were met and the family also contributed to the management of the illness and the self-management skills of the patient were improved.

Result: Orlando's Interaction Theory can be used for managing the illness of children who suffer from chronic illnesses. Our suggestion is to increase the proper and effective use of Orlando's Interaction Theory in the provision of care to patients with chronic illnesses.

Keywords: Nurse, Orlando, Interaction Theory, Celiac Disease, Child Patient.

INTRODUCTION

Celiac Disease (gluten enteropathy) is an immune small intestine disease, characterized by a permanent sensitivity to gluten which is found in grains such as wheat and rye, which affects individuals with a genetic predisposition (1-3). The global prevalence of celiac disease is reported between %0.3-1.4 (4-6) and it ranges between %1 and %0.003 in our country (6). Although there are different clinical findings, it causes chronic diarrhea, stomachache, abdominal distension, nutrition disorder, discontinuity in development and malabsorption in children (7-10).

Following a proper diet is an integral part of celiac disease treatment (11). The nutrition of the patients should be based on a gluten-free diet prepared according to the size of the gastrointestinal system damage and malabsorption level. Patients who are diagnosed with Celiac Disease should be evaluated periodically and monitored for lifelong (12).

The patient with Celiac Disease should gain the self-management skill to transform the adaptation process and nutrition to a life-style. To enable patients to have this skill, the support of nurses, who are key members of the team of healthcare professionals, is required (13,14). Nursing care; when it practiced according to models or theories, provides

integrative and effective care for the child and family. Nursing care, which is developed as a result of systemization, provides improved support for patients in terms of their physical, mental, spiritual and social well-being, and enhances life-quality (15,16).

Orlando's Interaction Theory, which is one of the theories frequently used in nursing, is an important guide for nursing care. According to Orlando, nursing care should be provided when individuals are not capable of meeting their own needs. This care is provided in three stages including patient behavior, nurse reaction, and nurse action. Patient behavior refers to the observations of a nurse regarding the patient; nurse reaction refers to thoughts and feelings of a nurse regarding the patient, and the nurse action refers to meeting the needs of the patient (17,18). The purpose of nursing is to provide care to individuals and positive communication plays a fundamental role in this process. Theory-based practices provide guidance for nurses and enable them to establish professional communication with patients and family members. The needs of patients from physical, mental and social aspects are determined through a professional relationship (19). The patient, who is not capable of meeting his or her own needs, can point out the behavior that requires help through verbal and/or non-verbal manners (20,21). For example, the patient may verbally express that he or she has pain, or refuse to establish communication when someone enters the room and may express himself or herself with body language. A nurse should be capable of understanding the underlying reason for such behaviors and plan the care (22,23). The nurse should assess whether the interventions applied during the entire process was helpful for the patient and restructure the intervention for the benefit of the patient (24,25). As a result, Orlando's Interaction Theory is an effective and systematic method to determine the needs of a patient, improved nurse-patient relationship and enable patients to gain self-management skills concerning their illnesses. This case study analyzed the behaviors of the patient who was diagnosed with Celiac Disease determined the causes of discomfort and needs of the patient according to Orlando's Interaction Theory and proper interventions were applied. Prior to the study, verbal and written permissions were received from the child and parents.

Case Report

13 years old girl diagnosed with Celiac Disease applied to the pediatric polyclinic with multiple complaints (stomachache, diarrhea, abdominal distension, vomiting and lack of appetite) and hospitalized in the department of pediatrics. The height of the patient was 128 cm (between 10 and 20 percentile) and the weight of the patients was 20 kg (below three percentile). The anemia of the child was measured as (hemoglobin: 10.7 g/dl) and the B12 level was found low (182 pg/ml)

Patient Behavior: Need for help

- **Non-Verbal Behaviors**
- The patient looked tired and upset
- The patient grabbed her stomach, suffered from diarrhea and vomiting
- **Verbal Behaviors**
- The patient refused to have communication in the initial meetings
- The expressions of the patient received at the end of the first day of hospitalization. For example: "I am annoyed by my parents warnings about what to eat and what not to eat", "I feel upset when I can't eat the foods I want to eat", "I feel uncomfortable with looking smaller than my friends", "I feel excluded when I can't eat like them when we go out together and I feel upset" and "I don't follow my gluten-free diet recently when I am with my friends".

Nurse Reaction: Perceptions, thoughts, and feelings of the nurse

When the underlying cause of the patient's behavior was examined, it was thought that the patient was warned by her parents given that she was in the adolescence period, she perceived

this situation as an obstacle for her independence and experienced difficulties since she could not eat the same food with her friends. These opinions were shared with the patient and confirmed by her.

Nurse Action: Automatic and purposeful nursing process

➢ **Automatic nursing process**

- Oral and IV treatments required by the physician were provided.

➢ **Purposeful Nursing Process**

The patient was asked to share the triggers of her illness and hospitalization process and her opinions about her feelings in this process. After the interview, it was decided that together with the patient, we can share the thoughts and feelings with parents. As a result of the meetings conducted with the patient and parents, the following topics were addressed;

- Providing education on the issues of misconception by watching visuals on Celiac Disease with the patient and her parents
- Supportive treatment for vitamin deficiency and other nutritional elements (doctor requirement; iron, vitamin B12, zink)
- Cooperation with a dietician to consume foods that are rich in iron, vitamin B12, and zink and gluten-free
- Deciding on alternative ways to cope with stress together
- Provision of phone-counseling when the patient experience problems regarding her illness

Improvements in Patients Behaviors after Her Needs Were Met

➢ **Non-Verbal Behaviors**

- The patient did not grab her stomach, did not suffer from diarrhea and vomiting
- The patient gained her appetite again
- The patient followed her gluten-free diet.

➢ **Verbal Behaviors**

- The patient said that she did not feel tired and upset,
- The patient expressed that sharing her opinions and feelings about her illness helped her to feel relaxed,
- The patient indicated that she comprehended the importance of nutrition and she will comply with her parents,
- The patient said that she would express herself better to her friends,
- The patient expressed that she could spend time with her friends and family when she feels stressed.

➢ **Objectives Towards Illness**

- The patient expressed her objective as “I have realized that my treatment is a life-long gluten-free diet. I will take more care about my nutrition”

DISCUSSION

Nurses constitute an important part of the healthcare professionals are required to plan nursing care by establishing effective communication with children and parents (15, 16). Orlando’s Interaction Theory, which is among the most frequently used theories, emphasizes the effective communication and individuality of the patient. According to this theory, nurses should evaluate the behaviors of patients carefully and initiate an individual and purposeful interaction (17,18).

In the study conducted by Uslu et al. (2016), Orlando’s Interaction Theory was used in the nursing care of adolescents diagnosed with Type 1 Diabetes Mellitus and the study findings showed that positive changes occurred in patients’ behaviors when the needs of the patient were met (26). Another research study also found that the patient’s behaviors were positively changed with the use of Orlando’s Interaction Theory in the nursing care of patients

diagnosed with Type 2 Diabetes Mellitus (27). However, prior studies in the literature have not been employed the use of Orlando's Interaction Theory in the nursing care of children diagnosed with Celiac Disease. Nevertheless, children diagnosed with Celiac Disease are under high-risk conditions in terms of physical, psychological and social aspects. Children who experience this situation may confront adaptation problems regarding the management of the illness (7,8).

Our case study showed that the patient could not manage the illness properly and had conflicts with her family. The underlying causes of the behaviors which were also indicators of stress were revealed and as the reaction of the nurse, this situation was shared with the patient and confirmed by her. Both the automatic and purposeful nursing processes were applied in line with Orlando's Interaction Theory. The changes in the patient's behaviors were evaluated after her needs were met, and an improvement in the patient's verbal and non-verbal behaviors was reached.

CONCLUSION

The study identified that Orlando's Interaction Theory facilitated illness management in the case that was diagnosed with Celiac Disease and was effective in coping with stress. Our suggestion is to increase the number of research studies that use Orlando's Interaction Theory, provide training for nurses on this issue and increase the use of this theory in clinics.

KAYNAKLAR

1. *Bekem Soylu Ö, Ecevit ÖÇ. Çölyak hastalığı tanısı ile izlenen olguların klinik değerlendirmesi. İzmir Dr. Behçet Uz Çocuk Hast. Derg 2013; 3(1): 38-43. doi:10.5222/buchd.2013.038*
2. *Kondolot M, Demirçeken F, Ertan Ü. Vaka ile Türk çocuklarında çölyak hastalığı. Türkiye Çocuk Hast Derg 2009;3(1):10-7.*
3. *Fuchs V, Kurppa K, Huhtala H et al. Delayed celiac disease diagnosis predisposes to reduced quality of life and incremental use of health care services and medicines: A prospective nation wide study. United European Gastroenterology J 2018; 6(4): 567-575. Doı: 10.1177/2050640617751253.*
4. *Singh P, Arora A, Strand TA et al. Global prevalence of celiac disease: systematic review and meta-analysis. Clin Gastroenterology and Hepatology 2018; 16(6): 823-836.*
5. *Comba A, Eren NB, Demir E. Prevalence of celiac disease among school-age children in Çorum, Turkey. The Turkish J Gastroenterology 2018; 29(5): 595.*
6. *Sağlık Bakanlığı. Çölyak hastalığı görülme sıklığı ve illere dağılımı. Erişim tarihi: 21.11.2018. https://hsgm.saglik.gov.tr/tr/metabolizma-ve-colyak/*
7. *Yanar Ö, Durmaz Ö, Gökçay G. Atipik başlangıçlı çölyak hastalığı. Çocuk Derg 2013;13(3):126-30. Doi:10.5222/j.child.2013.126*
8. *Uenishi TH, Gandolfi L, Almeida LM et al. Screening for celiac disease in 1st degree relatives: a 10-year follow-up study. BMC Gastroenterology. 2014; 14(1): 36. Doi.org/10.1186/1471-230X-14-36.*
9. *Guandalini S, Discepolo V. Celiac Disease. In: Guandalini S, Dhawan A, Branski D, editors. Text book of Pediatric Gastroenterology, Hepatology and Nutrition. 1st ed. Switzerland: Springer. 2016. p:453-70.*
10. *Emiroğlu HH, Emiroğlu M, Akbulut H, Eryılmaz A, Bayram RO, Yüksel A, Ağır MA. Clinical characteristics in children with celiac disease: a single center results. J Contemp Med 2017; 7(4): 1-7. oı: 10.16899/gopctd.358797.*
11. *Potter MD, Brienesse SC, Walker MM, Boyle A, Talley NJ. Effect of the gluten-free diet on cardiovascular risk factors in patients with coeliac disease: A systematic review. J gastroenterology and hepatology 2018; 33(4):781-91. Doi.org/10.1111/jgh.14039.*
12. *Serin Y, Akbulut G. Çölyak hastalığı ve glutensiz diyet tedavisine güncel yaklaşım. Turkiye Klin J of Health Scien 2017; 2(3): 192-200. Doı: 10.5336/healthsci.2016-53640.*
13. *Demirağ SA. Kronik hastalıklar ve yaşam kalitesi. Sağlıklı Yaşam Tarzı Derg 2009;1(1): 58-65.*

14. *Haskett T. Chronic illness management: Changing the system. Home Health Care Management Prac 2006;18(6):492-94. Doi.org/10.1177/1084822306289988.*
15. *Kudubeş AA, Bektaş M. Çocukluk dönemi kronik hastalıklarında kullanılan model ve teoriler. Dokuz Eylül Üniv Hem Fak Elek Derg 2015;8(1):39-44.*
16. *Uslu N, Bayat M, Variyenli N, Arıcan F, Hatipoğlu N. Orlando'nun etkileşim teorisinin uygulamada kullanımına bir örnek: Tip 1 diyabetes mellitus. Yıldırım Beyazıt Üniv Hem e-Derg. 2016;3(1):64-70.*
17. *Velioğlu P. Hemşirelikte Kavram ve Kuramlar. İstanbul: Alaş Ofset; 1999:351-65.*
18. *Fawcett J. Orlando's Theory of the Deliberative Nursing Process. ed. Contemporary Nursing Knowledge Analysis and Evaluation of Nursing Models and Theories. Philadelphia: F. A. Davis Company. 2005:506-27.*
19. *Sheldon LK, Ellington L. Application of a model of social information processing to nursing theory: how nurses respond to patients. J Adv Nurs 2008;64(4):388-98.*
20. *Schmieding N. Orlando's nursing process theory in nursing practice. Nursing theory: Utilization & application St. Louis: Mosby 2002: 315-37.*
21. *Faust C. A practice application in an extended care facility. J Gerontological Nurs 2002;28(7):14-8.*
22. *Parker LM. Twentieth-Century Nursing Wieden bach, Henderson, and Orlando's Theories and Their Applications. Gesse T, Dombro M, Gordon SC, Rittman MR, ed. Nursing Theories and Nursing Practice. Philadelhia: F. A. Davis Company; 2005:73-7.*
23. *Tomey AM, Alligood MR. Ida Jean Orlando. Schumacher, Fisher S, Tomey AM, Mills DI, Sauter MK. Nursing Theorists and Their Work. Boston: Mosby YearBook; 1998: 351-63.*
24. *Vandemark LM. Awareness of self & expanding consciousness: Using nursing theories to prepare nurse-therapists. Mental Health Nurs 2006; 27(6):605-15.*
25. *Abdoli S, Safavi SS. Nursing students' immediate responses to distressed clients based on Orlando's theory. Iranian J Nurs and Midwifery Res 2010;15(4):178-84.*
26. *Uslu N, Bayat M, Variyenli N et al. Orlando'nun etkileşim teorisinin uygulamada kullanımına bir Örnek: Tip 1 Diyabetes Mellitus. Yıldırım Beyazıt Üniv Hem E-Derg 2016; 3(1).*
27. *Can S, Yıldırım Usta Y, Can Çiçek S. Orlando'nun hemşirelik süreci teorisi'nin uygulamada kullanımına bir örnek: olgu sunumu. Diyabet, Obezite ve Hipertansiyonda Hemş Form Derg 2019, 11(1).*

FT58

The Tendency To Medical Errors Among Pediatric Nurses In Turkey: A Systematic Review

Deniz Yiğit[1], Dilek Şayık[2], Ayfer Açıkgöz[1]

[1] Eskisehir Osmangazi University Faculty of Health Sciences, Department of Pediatric Nursing, Eskisehir

[2]Eskisehir City Hospital, Training Unit, Eskisehir

ABSTRACT

Objective: This systematic review was conducted in order to review the studies published on the tendency to make medical errors among pediatric nurses in Turkey and to systematically examine the data obtained.

Methods: The relevant search was made in the CoHE (Council of Higher Education Council) National Thesis Center, Google Scholar, EBSCOhost, and PubMed databases. In this study, no year limitation was made. As a result of the search, 3 articles that met the research criteria were included in the study.

Findings: It was found that the pediatric nurses had a high tendency to make medical errors during the implementations performed in the clinics, that their colleagues witnessed these medical errors, and that the tendency to make medical errors differed according to the service worked and the procedure performed.

Conclusion: It is seen that pediatric nurses have a high tendency to make medical errors and that the most important reason for this is the intensive work programs. It is recommended to develop new strategies to improve the working conditions of pediatric nurses in health institutions.

Keywords: *Child, Nurse, Medical Error, Turkey.*

INTRODUCTION

Medical errors occur due to inattention, illiteracy or neglect of health care professionals and result in patient harm (1). According to the Safety Reporting System published in our country in 2016, there were 74,383 medical error reports in 2016 (2). As a result of medical errors, irreversible conditions such as death, disability, and diseases may occur in patients (3-5). Therefore, important duties are assigned to institutions and health professionals in preventing medical errors (6).

Nurses, who constitute a significant majority of health professionals, have a higher risk of making medical errors due to many dependent and independent tasks (7). Especially among pediatric nurses, working with a sensitive population, high workload, and insufficient number of personnel increase the rate of medical errors (8). For this reason, it is important to inform nurses about medical errors and to take measures to reduce the rate of medical errors (9).

This systematic review was conducted in order to review the studies published on the tendency to make medical errors among pediatric nurses in Turkey and to systematically examine the data obtained. The systematic review question created prior to the study was determined as "What is the tendency of pediatric nurses to make medical errors?".

Inclusion criteria of the study

Being present in CoHE (Council of Higher Education) National Thesis Center, Google Scholar, EBSCOhost, and PubMed databases

Being conducted with pediatric nurses in Turkey

Using the Medical Error Tendency Scale in Nursing

Having full-text access, not being a review article

MATERIALS AND METHODS

CoHE (Council of Higher Education) National Thesis Center, Google Scholar, EBSCOhost, and PubMed databases were searched using the keywords "çocuk (child)", "hemşire (nurse)", "tıbbi hata (medical error)", and "Türkiye (Turkey)". In the study, no year limitation was made and 3 articles that met the inclusion criteria were included in the study. The PRISMA Declaration was utilized in the preparation of this systematic review protocol and article writing. In the studies, the Medical Error Tendency Scale in Nursing consists of 49 items and 5 subdimensions (medication and transfusion administrations, falling, communication, hospital infections, patient monitoring and equipment safety). The minimum total score that can be obtained from the scale is 49 and the maximum score is 245. The increase in the total score indicates that nurses' tendency to medical errors is decreased (9, 10).

Universe and Sample Characteristics

In the literature search, 166 articles were reached using the keywords "çocuk (child)", "hemşire (nurse)", "tıbbi hata (medical error)", and "Türkiye (Turkey)". Studies that did not meet the inclusion criteria and repeated studies in databases were searched were excluded from the research. As a result, three articles were obtained to examine in the context of the study (Table 1).

Table 1. The Number of Articles Selected in the Selection Process of the Systematic Review Study

Number of articles reached in database search: 166 CoHE National Thesis Center (n:0) Google Scholar (n:166) EBSCOhost (n: 0) PubMed (n: 0)
Number of articles that met the inclusion criteria of the study: 3 CoHE National Thesis Center: 0 Google Scholar: 3 EBSCOhost: 0 PubMed:0

FINDINGS

The objectives of the studies, universe and sample sizes, scales used, and research types are presented in Table 2. The samples of the studies consisted of a minimum of 70 nurses (9) and a maximum of 123 nurses (10).

In the study conducted by Ersun et al. (2003) with 123 pediatric nurses, it was stated that 61% of the nurses encountered medical errors, that 51.5% witnessed the errors of physicians and 48.5% witnessed the errors of their friends, and that none of the nurses filled in the report form. It was determined that the most common type of error was medication error and the most common medication error was the calculation of wrong medication doses. It was determined that 27.7% of the nurses made a medication error before and that 47.4% of these errors were due to the insufficient number of personnel. The mean score of the nurses from the Medical Error Tendency Scale in Nursing was 227.12±15.06. It was determined that nurses working in pediatric services had a higher tendency to make medical errors ($p<0.05$) (10).

In a cross-sectional and descriptive study, it was determined that 42.9% of the nurses made a medication error before and that 62.9% witnessed that their colleagues made a medication error. 68.6% of the nurses stated that they did not participate in training on medical errors and 74.3% stated that they needed training on the relevant subject. It was found that the tendency of nurses to make medical errors was high (9).

In a descriptive study conducted with pediatric nurses, it was found that 48.9% of the nurses made a medication error and that 72.2% of them witnessed that their friends administered the wrong medicine. It was reported that the most common type of error was the wrong dose of medication. It was determined that nurses who did not like the clinic they worked had a higher tendency to make medical errors (8).

Table 3. The objective, sample size of the studies examined, parameters used and research types

No	Authors	Year of the Study	The objective of the study	Universe and Sample	Scale Used	Research Type
1	Ersun et al.	2013	To determine the tendency of pediatric nurses to make errors	Universe: 160 Sample: 123	Medical Error Tendency Scale in Nursing	Cross-sectional descriptive study design
2	Külcü and Yiğit	2017	To determine the tendency of nurses working in pediatric clinics to make medical errors	Universe: 88 Sample: 70	Medical Error Tendency Scale in Nursing	Cross-sectional descriptive study design
3	Manav and Başer	2018	To examine the pediatric nurses' status of making medication errors and tendencies	Universe: Not specified. Sample: 90	Medical Error Tendency Scale in Nursing Attitude Scale in Medical Errors	Descriptive and correlational study design

DISCUSSION

The excessive workload in clinics, inability to work in the desired service, insufficiencies in the health care system, and sensitive structure of the child population may be the factors affecting the rate of medical errors (8, 11-13). In the studies examined in our research, it was determined that the rate of medical errors and the tendency to make medical errors were high among pediatric nurses and that one of the most important reasons for medical errors was working with insufficient number of personnel. Preparing low doses of medications in pediatric clinics may increase the risk of administering incorrect doses of medicines (4). In the studies examined, the most common type of error was reported to be the administration of the wrong medicine.

In the literature, it is stated that nurses do not receive sufficient information about medical errors and that they do not know what to do when they encounter a medical error (4, 7). In the studies examined, nurses stated that they witnessed errors in medical procedures implemented in their environment, that they did not use the report form after medical errors, that they did not participate in training on medical errors, and that they needed training on this subject.

CONCLUSION

In conclusion, it was found that pediatric nurses have a high tendency to make medical errors and that nurses do not receive sufficient training on this subject. It is thought that this systematic review will contribute to the studies to be carried out on the subject by reaching scientific evidence. In line with the study results, it is recommended to determine the causes of the tendency to medical errors, to provide sufficient training to pediatric nurses and to take necessary measures.

Referans

1 *JCAHO (The Joint Commission), 2010. [https://www.jointcommission.org/about/jointcommissionfaqs.aspx?faq#324]. Erişim tarihi: 01.11.2019.*

2 *Güvenlik Raporlama Sistemi (GRS) 2016 [https://dosyamerkez.saglik.gov.tr/Eklenti/6483,grs2016raporr1pdf.pdf?0]. 2016 yılı istatistik ve analiz raporu. Erişim tarihi: 02.11.2018.*

3 *Terzioğlu F. Hemşirelerin tıbbi hata eğilimlerinin ve etkileyen faktörlerin belirlenmesi. Sağ Bilim ve Mes Derg 2019; 6(2): 1-10.*

4 *Özen N, Onay T, Özkan S ve ark. frequency of pediatric medication administration errors and contributing factors. J Nurs Care Qual 2011; 26(2): 136-143.*

5 *Clifton-Koeppel R. What nurses can do right now to reduce medication errors in the neonatal intensive care unit. Newborn and Infant Nurs Reviews 2008; 8(2):72-82.*

6 *Güven Ş, Şahan S, Ünsal A. Hemşirelerin tıbbi hata tutumları. İzlek Akad Dergi 2019; 2(2): 75-85.*

7 *Sivrikaya SK, Kara AŞ. Hemşirelerin tıbbi hata yapma eğilimlerinin incelenmesi. Balıkesir Sağlık Bilim Derg 2019; 8(1): 7-14.*

8 *Manav G, Başer S. Çocuk hemşirelerinin ilaç hatası yapma durumları ve eğilimlerinin incelenmesi. Gümüşhane Üniv Sağlık Bilim Derg 2018; 7(3), 41-49.*

9 *Külcü DP, Yiğit R. Çocuk kliniklerinde çalışan hemşirelerin tıbbi hata yapma eğilimlerinin incelenmesi. Anadolu Hemşire ve Sağlık Bilim Derg 2017; 20(1): 7.*

10 *Ersun A, Başbakkal Z, Yardımcı ve ark. Çocuk hemşirelerinin tıbbi hata yapma eğilimlerinin incelenmesi. Ege Üniv Hemşire Fak Derg 2013; 29(2):33-45.*

11 *Altuntaş S, Güven G, Öztürk K ve ark. Hemşirelik öğrencilerinin tıbbi hatalara karşı tutumları. Bandırma Onyedi Eylül Üniversitesi Sağ Bil Arş Derg 2019; 1(1): 1-9.*

12 *İntepeler ŞS, Dursun M. Tıbbi hatalar ve tıbbi hata bildirim sistemleri. Anadolu Hemşire ve Sağlık Bilim Derg 2012; 15(2), 129-35.*

13 *Larson K, Elliott R. Understanding Malpractice: A guide for nephrology nurses. Nephrol Nursi J 2009; 36(4): 375-357.*

FT59

Akut İshal Tanısı İle Hastaneye Yatırılan Beş Yaşından Küçük Çocuklarda Rotavirus Seroprevalansı Ve Klinik Özellikleri

Melike KESER EMİROĞLU[*] - Nuran SALMAN[*]

[*]İstanbul Üniversitesi İstanbul Tıp Fakültesi, Çocuk Sağlığı ve Hastalıkları A.D., Çocuk Enfeksiyon Hastalıkları B.D., İSTANBUL

Amaç:
Rotavirus tüm dünyada çocukluk çağında görülen ağır akut ishallerin en sık sebebidir. Diğer barsak patojenlerince oluşturulan hastalıklarla karşılaştırldığında ishal daha şiddetlidir. Rotavirus ishallerinin özelliklerden birisi de ishal sebebiyle hastaneye yatış oranlarının fazlalığıdır. Çalışmamızda rotavirus ishallerine bağlı hastaneye yatış sıklığını ve rotavirus ishalinin klinik özelliklerini belirlemek amaçlanmıştır.

Gereç ve Yöntemler:
1 Haziran 2005-01 Haziran 2006 tarihleri arasında çalışmaya katılan merkezlere akut ishal sebebiyle başvuran ve hastaneye yatış gereken 5 yaşından küçük çocuklar çalışmaya dahil edildi. Akut ishal, son 10 günde gelişen 24 saat içinde ≥3 kez sulu dışkı çıkarma ve bunu açıklayacak başka bir durumun olmaması olarak tanımlandı. Nozokomiyal RV enfeksiyonları çalışmaya dahil edilmedi. Başvuru anında demografik özellikler, tıbbi hikaye ve ishal atağı ile ilgili çocuğa ait bilgiler ebeveyn/vasisinden alındı. Çocuğun fizik muayene bulguları da kaydedildi. İshal atağının şiddeti Vesikari skoru kullanılarak belirlendi. Gayta örnekleri lateks aglütinasyon yöntemi ile *(Slidex Rota-Kit; bioMérieux, Marcy-l'Etoile, France; sensitivity 82%, specificity 100%)* test edildi. İstatistikler SPSS 13.0 paket programı kullanılarak yapıldı.

Bulgular:
Çalışma süresince 96 çocuk akut ishal tanısı ile yatırıldı. Çocuklardan 79'unda rotavirus pozitif bulundu. Ortalama hastanede yatış süresi rotavirus pozitif grupta 4.23 ±3.6 gün (min. 1- maks. 14 gün) idi. Ilıman iklime sahip İstanbul'da rotaviruse bağlı hastaneye yatış en fazla Aralık ve Mayıs ayları arasında görüldü. Hastaların ortalama yaşı her iki grupta da 16 ay idi (medyan 13 ay). Rotavirus pozitif bulunan hastaların %75.9'u iki yaşından küçüktü. Rotavirus enfeksiyonu olanların %81'inde ağır ishal saptandı (Vesikari skoru ≥11).
Sonuç: Rotavirus ishalleri İstanbul'da beş yaşından küçük çocuklarda, özellikle kış ve ilkbahar mevsimlerinde önemli bir hastaneye yatış sebebidir.

Anahtar Kelimeler: *Rotavirus, ishal, çocuk, İstanbul*

Seroprevalance And Clınıcal Feature Of Rotavırus Gastroenterıtıs Among Hospıtalızed Chıldren Under Fıve Years Old In Istanbul

Background:
Rotavirus is a major cause of severe childhood gastroenteritis worldwide. Compared with illness caused by other enteric pathogens, the diarrhoea is particularly severe and often associated with dehydration. **Rotavirus gastroenteritis remains a common cause of**

[*] İstanbul Üniversitesi İstanbul Tıp Fakültesi, Çocuk Sağlığı ve Hastalıkları A.D., Çocuk Enfeksiyon Hastalıkları B.D., İSTANBUL

hospitalization and is responsible for a considerable burden on healthcare systems. The study aimed to assess the hospitalizations due to rotavirus gastroenteritis and their characteristics.

Methods:
A prospective review of children < 5 years hospitalized in two hospitals in Istanbul, Turkey between 01 June 2005 and 01 June 2006 with acute gastroenteritis. Acute gastroenteritis was defined as ≥3 liquid stools in a 24-h period, of <10-day duration, and where no alternatif explanation exist. Children with nosocomial infections were excluded. The parents/ guardians of the children enrolled in the study were asked to complete a questionnaire to collect information regarding the child's demographics, medical history and GE episode. Severity of GE was assessed by using the Vesikari scale. Specimens were tested for rotavirus antigen by A latex agglutination (LA) test (Slidex Rota-Kit; bioMérieux, Marcy-l'Etoile, France; sensitivity 82%, specificity 100%).
Statistical analysis was performed using SPSS 13.o for Windows.

Results:
During the study period, 96 children were hospitalized due to gastroenteritis, of whom 79 were rotavirus positive. The mean length of hospital stay was 4.23 ±3.6 days for rotavirus-related diarrhea (min.1-max.14 days). In the temperate climate of Istanbul, rotavirus-related hospitalizations were highest during the period December through May. The mean age on admission was 16 months (median 13 months). Most children with rotavirus gastroenteritis (75.9%) were younger than two years of age. Eighty one percent of children with rotavirus infection had severe gastroenteritis (Vesikari score ≥11).

Conclusıons:
Rotavirus gastroenteritis is an important cause for hospitalizations in children < 5 years in Istanbul, especially during winter and spring seasons.

Key Words: *Rotavirus, gastroenteritis, child, Istanbul*

GİRİŞ

Son dekadlarda çocukluk çağında ishal sebebiyle hastaneye yatış ve ölümlerde önemli ölçüde azalma gözlenmiştir. Dünya genelinde ishale bağımlı ölümler 1982 yılında 4.6 milyon olarak hesaplanırken bu değer 2003 yılında 1.6 milyon bulunmuştur (1). Bununla birlikte çocukluk çağı ishalleri, dünya genelinde 5 yaş altı ölüm sıralamasında perinatal hastalıklar ve alt solunum yolu enfeksiyonlarından sonra 3. sırada yer almaktadır.
RV enterik viruslardan olup Reoviridae ailesinin bir üyesidir. Rotavirus hem gelişmekte olan hem de gelişmiş ülkelerde çocukluk çağında görülen ağır akut ishalin en sık sebebidir (2,3). Rotavirus ishallerinin özelliklerden birisi de ishal sebebiyle hastaneye yatış oranlarının fazlalığıdır. Dünya genelinde küçük çocuklarda ağır ishal sebebiyle hastaneye yatışların %40'ı rotavirus ishalleridir (1)
Temizlik ve sağlık koşulları iyileştikçe bakteri ve parazit oranı azalmış, rotavirus enfeksiyonu sayısı ise etkilenmemiştir. Bu yüzden aşılama, ağır rotavirus ishallerinden korunmada ve sekellerin önlenmesinde en önemli seçenektir (4).
Çalışmamızda birincil olarak İstanbul'da beş yaşından küçük çocuklarda hastaneye yatış gerektiren rotavirus ishali sıklığını belirlemek amaçlanmıştır. İkincil amacımız ise beş yaş altındaki çocuklarda görülen rotavirus ishalinin yaş dağılımını ve klinik özelliklerini saptamaktır.

GEREÇ VE YÖNTEMLER

Çalışma prospektif ve hastane bazlı bir çalışmadır.

İstanbul'da yapılan çalışmaya İstanbul Üniversitesi İstanbul Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları Anabilim Dalı'ndan Çocuk Enfeksiyon Hastalıkları Bilim Dalı ile Çocuk Acil ve Yoğun Bakım Bilim Dalı Servisleri, ayrıca Alman Hastanesi Çocuk Servisi çalışmaya katıldı. Çalışma İyi Klinik Uygulamaları Klavuzu ve Helsinki Deklarasyonu gözönüne alınarak planlandı. İstanbul Üniversitesi İstanbul Tıp Fakültesi Etik Kurulu onayı alınarak çalışmaya başlandı (08.05.2005 tarih ve 06 sayılı toplantı; No:2005/603).

01 Haziran 2005-01 Haziran 2006 tarihleri arasında çalışmaya katılan merkezlere akut ishal sebebiyle başvuran ve hastaneye yatış gereken 5 yaşından küçük çocuklar çalışmaya dahil edildi. Akut ishal, son 10 günde gelişen 24 saat içinde ≥3 kez sulu dışkı çıkarma ve bunu açıklayacak başka bir durumun olmaması olarak tanımlandı. Ağır derecede dehidrate olanlar, Vesikari skoruna göre ağır ishal atağına sahip olanlar ve ağızdan alımı bozuk olan hastalar hastaneye yatırıldı. Nozokomiyal RV enfeksiyonları çalışmaya dahil edilmedi.

Başvuru anında demografik özellikler, tıbbi hikaye ve ishal atağı ile ilgili çocuğa ait bilgiler ebeveyn/vasisinden alındı. Çocuğun fizik muayene bulguları da kaydedildi. İshal atağının şiddeti; ishal, kusma, dehidratasyon, ateş ve doktora başvuru durumuna göre 0-20 puanlı Vesikari skoru kullanılarak belirlendi (5). Skoru 1-10 arasında olanlar hafif, 11 ve üzerinde olanlar ağır ishal kabul edildi.

Gayta örnekleri başvuru anında İstanbul Üniversitesi İstanbul Tıp Fakültesi Mikrobiyoloji ve Klinik Mikrobiyoloji Anabilim Dalı laboratuvarı'ında incelendi. Gayta örnekleri lateks aglütinasyon yöntemi ile *(Slidex Rota-Kit; bioMérieux, Marcy-l'Etoile, France)* başvuruda test edildi. Uygun görülen hastaların gaytaları diğer enteropatojenler için de test edildi.

RV ishali tanısı akut ishal ile başvuran çocuğun gaytasında RV antijeni saptanarak kondu. RV dışı ishal tanısı ise akut ishalli çocuğun gaytasında RV antijeninin saptanmaması olarak tanımlandı.

İstatistikler SPSS 13.0 paket programı kullanılarak yapıldı. Kategorik verilerin analizinde ki-kare testi, sürekli değişkenlerin analizinde Mann Whitney U testi kullanıldı. Yaş gruplarına göre yapılan analizlerde Kruskal-Wallis varyans analizi, post-hoc Bonferroni düzeltmeli Mann Whitney U testi kullanıldı. $P<0.05$ istatistiksel olarak anlamlı kabul edildi.

BULGULAR

On iki aylık çalışma süresince çalışma hastanelerine 121 çocuk akut ishal şikayeti ile yatırıldı. İshal sebebiyle hastaneye yatırılan 121 çocuktan çalışmaya katılım için gerekli olan ebeveyn izni alınan ve yeterli gayta örnekleri temin edilen 96'sı çalışmaya dahil edildi. Çocukların %59.3'ü erkekti (E/K=57/39) ve hastaların %97.9'si İstanbul'da ikamet ediyordu (94/2). Tüm hastaların yaş ortalaması 16.85 ±12.97 ay idi.

İshal tanısı ile yatış en fazla Aralık ve Mayıs ayları arasında görüldü, pik yatışın olduğu ay ise Şubat ayı idi (şekil 1).

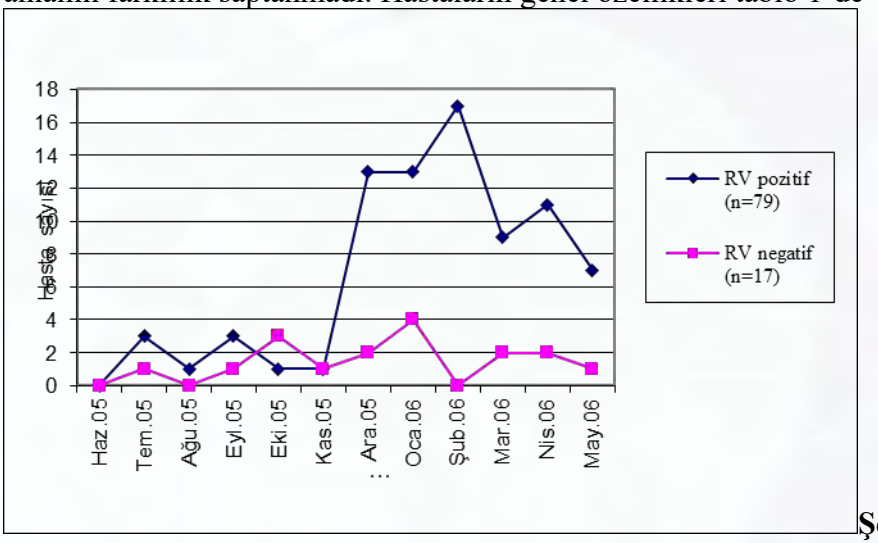
İshal sebebiyle hastaneye yatırılan çocukların %82.3'ü RV pozitif bulundu (79/96). RV pozitif olan hastaların %75.9'u 2 yaşından (60/79), % 43.0'ü (34/79) bir yaşından küçüktü. Hastaların %17.7'si (14/79) ise altı ayın altındaydı (şekil 2).

RV pozitif olanlarda gün içinde maksimum kusma sayısı (7.41±4.96) RV negatif olanlardan (3.86±2.44) daha fazla idi (p=0.005).

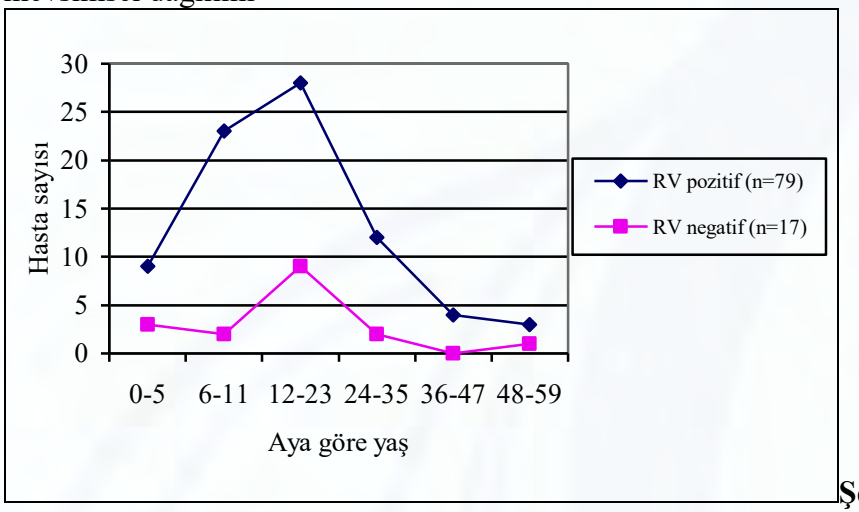
Elektrolit bozukluğu saptanan 20 hastadan 13'ü RV pozitifti (p=0.043). En sık rastlanan elektrolit bozukluğu hiponatremi idi (13/20).

Hastaneye yatırılan çocuklardan 28'inde diğer patojenler için gaytada parazit ve/veya gayta kültürü incelemeleri yapıldı, ancak hiçbirinden pozitif sonuç alınmadı.

Yatış süresi RV negatif olanlarda (8.17±5.69) RV pozitif olanlara göre (3.37±2.27) daha uzundu (p=0.001).
RV pozitif ve RV negatif hastalar yaş, cinsiyet, ishalin şiddeti, dehidratasyon varlığı ve derecesi, asidoz varlığı, oral rehidratasyon sıvıları veya intravenöz sıvı tedavilerine ihtiyaç, ateş, kusma varlığı, ishal sayısı ve süresi kriterlerine göre karşılaştırıldıklarında aralarında anlamlı farklılık saptanmadı. Hastaların genel özellikleri tablo 1'de verilmiştir.



Şekil 1. Hastaların mevsimsel dağılımı



Şekil 2. Hastaların yaş ve rotavirus durumuna göre dağılımı

RV pozitif olan hastalar 0-5, 6-23 ve 24-59 aylar olarak üç yaş grubuna ayrıldı. 0-5 ay grubunda kusma daha fazla idi (p=0.03),Vesikari skoru ortalaması daha düşüktü (p=0.004). 6-23 aylık grupta, günlük gayta çıkışı daha fazla, Vesikari skoru daha yüksekti (p=0.003).
Akut ishal sebebiyle ölen hasta olmadı.

Tablo 1. Hastaların genel özellikleri

Özellikler	Rotavirus pozitif hastalar (n=79)	Rotavirus negatif hastalar (n=17)
Cinsiyet (%)		
Erkek	**45 (56.9)**	**12 (70.6)**
Kadın	**34 (43.1)**	**5 (29.4)**
Yaş (ay)	**17.10 ±13.09**	**15.70±12.72**
Boy (cm)	**71.72±26.79**	**78.82±14.65**
Ağırlık (kg)	**10.83±3.43**	**9.70±3.38**
Başvuru semptomlar(%)		
Ateş	**48 (60.7)**	**12 (70.6)**
Kusma	**68 (86)**	**14 (82.3)**
Dehidratasyon		
Hafif/orta	**63 (79.7)**	**15 (88.2)**
Ağır	**8 (10.1)**	**1 (5.9)**
Vesikari skorlaması (%)		
<11	**15 (18.9)**	**3 (17.65)**
≥11	**64 (81.0)**	**14 (82.3)**
Mevsim (%)		
Kış/İlkbahar	**70 (88.6)**	**11 (64.7)**
Yaz/Sonbahar	**9 (11.4)**	**6 (35.3)**
Hastane yatış süresi	**3.37±2.27**	**8.17±5.69**

TARTIŞMA

Kasım 1995-Mart 1997 tarihleri arasında Eskişehir'de 0-6 yaş grubunda akut ishalli 148 hastada LA ve enzim bağlı immünosorbent miktar tayini (ELISA) yöntemleri ile gayta numuneleri çalışılmış, %18.2 hastada RV pozitif bulunmuştur (6). Zarakolu ve ark.ca Aralık 1995-Şubat 1997 tarihlerinde 0-5 yaş grubunda akut ishalli 59 çocukta rotavirus ve adenovirus tip 40/41 sıklığı LA yöntemi kullanılarak araştırılmış; gayta örneklerinin %29'unda etken saptanmış, RV oranı %8.5 olarak belirlenmiştir (7). Akdoğan ve ark.nın 0-5 yaş grubunda Şubat 1998-Ocak 1999 tarihlerinde Kayseri'de gerçekleştirdikleri çalışmalarına akut ishalli 240 çocuk dahil edilmiş, gaytaları LA ve ELISA testleri ile çalışılmıştır. Hastaların %32.1'inde LA, %34.2'sinde ELISA ile RV pozitif saptanmıştır (8). Şanlıurfa ilinde Haziran 1999-Mayıs 2000 tarihlerinde Ulukanlıgil ve ark. tarafından yapılan çalışmaya 0-5 yaş arası akut ishalli 218 çocuk dahil edilmiştir. Hastaların %43.1'inde etken patojen saptanmış, bunların %7.8'inde RV pozitif bulunmuştur (9). Karadağ ve ark.nın Mart 1999-Aralık 2002 tarihleri arasında Ankara'da gerçekleştirdikleri çalışmalarında gaytada RV antijen testi (immünokromatografik yöntem) istenen 1099 hastanın kayıtları geriye yönelik incelenmiş; toplam %36.8 oranında RV pozitifliği saptanmış, yıllara göre RV pozitiflik oranında ise anlamlı farklılık gözlenmemiştir (10). Manisa'da, Ocak-Aralık 2000 tarihleri arasında yapılan bir çalışmada akut ishalle sağlık ocaklarına başvuran hastalarda (n=138) rotavirus ve adenovirus tip 40/41 sıklığı ELISA yöntemi kullanılarak araştırılmış, %17.4 oranında RV pozitif saptanmıştır. Çalışmaya 0-2 yaş grubunu dahil etmişler, yaş grupları arasında anlamlı farklılık saptamamışlardır (11). Kurugöl ve ark. tarafından Ocak 2000-Ocak 2001 tarihlerinde, İzmir'de ishal sebebiyle hastaneye başvuran 5 yaşından küçük çocukların gaytalarının ELISA testi ile incelendiği çalışmada hastaların %39.8'inde RV pozitif

bulunmuştur (12). Yine Ankara'da Eylül 2004-Aralık 2005 tarihleri arasında akut ishalli beş yaşından küçük çocuklarda yapılan bir çalışmada RV pozitifliği %39.7 oranında saptanmıştır (13). Görüldüğü üzere Türkiye'nin farklı illerinde, farklı dönemlerde, farklı yöntemlerle yapılan ve ağırlıklı olarak çalışma grubu 0-5 yaş aralığı olan bu çalışmalar dikkate alındığında oldukça farklı RV pozitiflik oranı belirlenmiştir. Sadece hastaneye yatırılan çocukların dahil edildiği çalışmamızda elde edilen RV pozitiflik değeri oldukça yüksektir (%82.3).

Sebebi bilinmemek beraber RV ishallerinin mevsimsel karakteri çok iyi belirlenmiştir (14,15). Ilıman iklimlerde RV kış aylarında pik yapar (16,17). Türkiye'ye ait veriler dikkate alındığında Ulukanlıgil ve ark. Şanlıurfa'da (9), Tünger ve ark. Manisa'da kış aylarında (11), Kurugöl Z ve ark. İzmir'de Ocak ve Mart aylarında (12), Doğan N ve ark. Eskişehir'de Ocak ve Şubat aylarında (6), RV ishallerinin pik yaptığını bildirmiştir. Ankara'da ise Karadağ ve ark. RV enfeksiyon sıklığını Aralık ve Nisan aylarında en yüksek düzeyde saptarken (10), Bozdayı G ve ark. RV pozitif hastaların kış ve sonbaharda yoğunlaştığına dikkati çekmiştir (13). İstanbul'da ılıman iklim hakimdir ve çalışmamızda literatürü destekleyecek şekilde Aralık ve Mayıs ayları arasında RV ishali hasta sayısında belirgin artış saptanmıştır (şekil 1).

RV ishali insidansı iki yaş altı çocuklarda daha büyük çocuklardan daha yüksektir (14). Velazquez ve ark. RV enfeksiyonlarının en sık 6-14 aylık çocuklarda görüldüğünü ve iki yaşından sonra giderek azaldığını göstermişlerdir (18). Çalışmamızda RV pozitif olanların yaş ortalaması 17.10 ±13.09 ay iken RV negatif olanların yaş ortalaması 15.70±12.72 ay idi, anlamlı farklılık saptanmadı. RV pozitif olan hastaların %75.9'u iki yaşından (60/79), %43.0'ü (34/79) bir yaşından küçüktü. Hastaların %17.7'si (14/79) ise altı ayın altındaydı (şekil 2), 6-24 ay arasında dikkate alındığında hastaların %64.5'i (51/79) bu yaş grubundaydı. Akdoğan ve ark. RV pozitif hastaların %95'inin 6-12 ay yaş grubunda olduğunu saptarken (8), Doğan N ve ark. ise RV pozitifliği oranını en fazla %26.2 ile 12-24 ay yaş grubunda gözlemiştir (6). Karadağ ve ark.nın çalışmalarında RV pozitiflik oranı iki yaşından küçük çocuklarda %43.7 oranıyla, %25 oranındaki iki yaşından büyük çocuklardan anlamlı yüksek bulunmuştur (10). Bozdayı G ve ark.ının çalışmalarında RV pozitif hastaların büyük çoğunluğu 6-23 ay grubunda saptanmış, hastaneye yatırılanlar dikkate alındığında ise %81.8 oranında hastanın 18 ayından küçük olduğu belirlenmiştir (13). Altı aydan küçüklerde RV enfeksiyonu sıklığının az olması hem anneden geçen antikorlara hem de anne sütüne bağlanmaktadır (19). Zarakolu ve ark. çeşitli klinik ve polikliniklerden gönderilen örneklerle yaptıkları çalışmalarında Türkiye'deki diğer yayınların aksine RV pozitif olan hastaların %60'ını 0-6 ay, %40'ını ise 7-12 ay grubunda saptamıştır (7). Yirmi dört aylıktan sonra enfeksiyon sıklığının az olması ise doğal geçirilmiş enfeksiyonların bir sonraki atak insidansını ve atağın şiddetini azaltmasına bağlıdır.

RV enfeksiyonu her yaşta görülebilmekle birlikte ağır semptomlar hemen hemen her zaman 6-24 aylık çocuklarda gelişmektedir (16,20). Kurugöl ve ark. tarafından İzmir'de yapılan bir çalışmada akut ishal tablosu ile 3 büyük hastaneye başvuran 5 yaş altı çocuklar incelenmiş, Vesikari klinik skorlama sistemine göre, RV pozitif olan vakalarda ağır klinik tablo görülme sıklığı negatif olanlara göre anlamlı olarak yüksek bulunmuştur (%69.1 vs % 39.2, $p<0.0001$) (12). Çalışmamızda hastalığın şiddetini belirlemek amacıyla başvuru anında bütün hastalara Vesikari skoru uygulandı; RV pozitif olan çocukların %81.0'i (64/79), RV negatif çocukların %82.3'ü (14/17) ağır ishal atağına sahipti. İstatistiksel olarak farklılık anlamlı değildi, bu durumun hasta sayısının azlığına bağlı olabileceği düşünüldü. Ancak RV pozitif olan hastalarımız kendi içinde değerlendirildiğinde Vesikari skoru 0-5 ay grubunda diğer yaş gruplarından daha düşük saptanmıştır ($p=0.003$). Literatürde de ilk 6 aylık dönemde enfeksiyonların daha hafif geçirilmesi enfeksiyon sıklığındaki azlıkta olduğu gibi transplasental yolla geçen anneye ait antikorlar ve anne sütü alımına bağlanmaktadır (19). Ayrıca, RVun farklı serotipleri insanda enfeksiyona yol açabildiği için, tekrarlayan

enfeksiyonların da sık görüldüğünü vurgulamışlardır. Ancak, tekrarlayan enfeksiyonlar ilk atak kadar ağır klinik tablo ile seyretmemekte ve çoğu zaman şikayetler doktora başvurmayı gerektirecek kadar ağır olmamaktadır (21). Bu sebepten dolayı RV enfeksiyonuna bağlı ağır ishal tablosu ilk atakta ve küçük yaşlarda olmaktadır. Aslında, orta veya ağır ishal tablosu hayatın ilk 8 ayında % 85, sonraki 9 ve 17. aylar arasında % 15 olarak bildirilmekte ve 18 aydan sonra giderek azalmaktadır (21).

RV ishallerinin bir özelliği de hem gelişmiş hem de gelişmekte olan ülkelerin süt çocukları ve daha büyük çocuklarında ishal sebebiyle hastaneye yatış oranlarının fazlalığıdır (8). Kurugöl ve ark.nın çalışmasında akut ishal vakalarında hastaneye yatış oranı RV pozitif olanlarda anlamlı olarak yüksek bildirilmektedir (% 30.9 vs %14.4, $p<0.01$) (12). Karadağ ve ark.nın çalışmasında RV pozitif olanlarda (%37.6) RV negatif hastalardan (%17.7) daha fazla hastaneye yatış gerekmiştir (10). Çalışmamızda ishal sebebiyle hastaneye yatırılan çocukların %82.3'ü RV pozitif bulunmuştur (79/96). Staat MA ve ark. ishal sebebiyle hastaneye yatırılanlarda kesin tanılı RV enfeksiyonunu mevsim dışı %25, mevsiminde %70 oranında bulunmuştur (14). Çalışmamızda ishal sebebiyle hastaneye yatanların, Aralık-Mayıs dönemi dikkate alındığında %86.4'ünün (70/81), Haziran-Kasım döneminde ise %60'ının (9/15) RV pozitif olduğu belirlenmiştir. Yaz ve sonbahar dönemindeki yüksek oran bu dönemdeki toplam hasta sayısının azlığından kaynaklanabilir.

Ateş, ishal ve kusma en sık semptomlardır, tek başlarına veya kombinasyonlar şeklinde olabilir (14). Vakaların yaklaşık yarısında yüksek ateş tabloya eşlik etmekte olup ateş ve kusma varlığı, RV pozitif olanlarda RV negatif olanlardan anlamlı farklılık göstermemiştir (tablo 1). Ancak RV pozitif olanlarda gün içinde maksimum kusma sayısı 7.41±4.96 değeri ile RV negatif olanlardan (3.86±2.44) daha fazla bulunmuştur ($p=0.005$). Karadağ ve ark. da ateşin varlığı, kusmanın varlığı, kusmanın gün içindeki sıklığını RV pozitif olanlarda anlamlı yüksek bulmuşlardır (10).

Yatış süresi RV negatif olanlarda 8.17±5.69 değeri ile RV pozitif olanlarda saptanan 3.37±2.27 değerinden yüksek bulunmuştur ($p=0.001$). Bunun sebebi RV pozitif bulunarak etyolojisi aydınlatılan hastaların yatış gerektiren klinik bulgular rahatladıktan sonra hızla taburcu edilmesidir. Buna karşılık RV negatif olanlarda bakılan gaytada parazit ve/veya gayta kültürlerinin hepsi negatif saptanmış, etken patojen gösterilemediği için ileri tetkikler istenmiş, bu da yatış süresini uzatmıştır.

RV ishallerinde komplikasyonlar ve ölümler ise çoğunlukla dehidratasyon, elektrolit uygunsuzluğu ve asidoz sebebiyle görülmektedir. Diğer viral patojenler gibi hafif, orta ve ağır klinik tabloya yol açmakla beraber, RV ishali özellikle inatçı kusma atakları ve sık dışkılama ile karakterizedir. Sonuçta ağır dehidratasyon tablosuna diğer viral enteropatojenlerden çok daha sık sebep olmaktadır (14). Ağır dehidratasyon RV pozitif olan çocukların %10.1'inde, RV negatif çocukların ise %5.9'unda gözlenmiş (tablo 1), istatistiksel olarak anlamlı farklılık saptanmamıştır. Hastanede yatış sırasında RV pozitif olan çocukların %91.6'sı, RV negatif çocukların %91.2'si intravenöz sıvı tedavisi almıştır. Elektrolit bozukluğu saptanan 20 hastadan 13'ünde RV pozitif bulunmuştur ($p=0.043$). En sık hiponatremiye rastlanmıştır.

SONUÇ

RV ishalleri gelişmekte olan ülkelerde önemli oranda mortaliteden sorumlu olmanın yanısıra gelişmiş olan ülkelerde önemli oranda klinik ve ekonomik yüke sahiptir. Çocukluk çağı ishallerine uygun yaklaşımı sağlamak ve RV aşılarının potansiyel faydasını değerlendirebilmek için her ülkenin kendi verilerine ihtiyaç vardır. Bu sebeple Türkiye'de de RV ishallerinin tahmini oranları, hastalığın klinik ve epidemiyolojik özellikleri belirlenmelidir.

Kaynaklar

1 *Parashar UD, Gibson CJ, Bresse JS, et al. Rotavirus and severe childhood diarrhea. Emerg Infect Dis. 2006;12:304–306*

2 *Parashar UD, Hummelman EG, Breese JS, Miller MA, Glass RI. Global illness and deaths caused by rotavirus diseases in children. Emerg Infect Dis. 2003;9:565–572*

3 *Glass RI, Parashar UD, Bresee JS, et al. Rotavirus vaccines: Current prospects and future challenges. Lancet. 2006;368:323–332*

4 *Centers for Disease Control and Prevention. Prevention of rotavirus gastroenteritis among infants and children. Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR. 2006;55(RR-12):1–16*

5 *Ruuska T, Vesikari T. Clinical picture of rotavirus disease in Finnish children. Use of numerical scores for assessment of diarrhoeal episodes. Scand J Infect Dis. 1990;2: 259-267*

6 *Doğan N, Akgün Y. 0-6 yaş grubu gastro-enterit olgularında rotavirus varlığı. İnfeksiyon Derg. 1998;12:493-495*

7 *Zarakolu P, Levent B, Gözalan A. İshalli çocuklarda rotavirus ve enterik adenovirus sıklığının araştırılması. Flora. 1999;4:64-67*

8 *Akdoğan D, Çınar S, Şahin İ, Per H, Kılıç H. 0-5 yaş çocuk ishallerinde rotavirus araştırılması. İnfeksiyon Derg. 2001;15:291-294*

9 *Ulukanlıgil M, Bakır M, Arslan G, Soran M, Seyrek A. Şanlıurfa'da 0-5 yaş arası çocuklarda ishal etkenlerinin araştırılması. Mikrobiyoloji Bült. 2001;35:307-312*

10 *Karadag A, Acıkgoz ZC, Avcı Z, et al. Childhood diarrhoea in Ankara, Turkey: Epidemiological and clinical features of rotavirus-positive versus rotavirus-negative cases. Scand J Infect Dis. 2005;37:269-275*

11 *Tünger Ö, Bakkkaloğlu B, Sürücüoğlu S, Gündüz T. Akut gastroenteritli çocuklarda rotavirus ve adenovirus tip 40/41 sıklığının araştırılması. İnfeksiyon Derg. 2001;15:43-46*

12 *Kurugöl Z, Geylani S, Karaca Y, et al. Rotavirus gastroenteritis among children under five years of age in İzmir, Turkey. T J Ped 2003;45:290-294*

13 *Bozdayi G, Dogan B, Dalgic B, et al. Diversity of human rotavirus G9 among children in Turkey. J Med Virol. 2008; 80:733–740*

14 *Bernstein DI, Ward RL. Rotaviruses. In: Feigin RD, Cherry JD, eds. Textbook of Pediatric Infectious Diseases. 5th ed. Vol 2. Philadelphia, PA: Saunders; 2004:2110–2133*

15 *Dennehy PH. Rotavirus vaccines: an overview. Clin Microbiol Rev. 2008;21:198 –208*

16 *Centers for Disease Control and Prevention. Epidemiology and Prevention of Vaccine-Preventable Diseases. Atkinson W, Hamborsky J, McIntyre L, et al, eds. 10th ed. Washington, DC: Public Health Foundation; 2007:295–306*

17 *Parashar UD, Holman RC, Clarke MJ, et al. Hospitalizations associated with rotavirus diarrhea in the United States, 1993 through 1995: surveillance based on the new ICD-9-CM rotavirus-specific diagnostic code. J Infect Dis. 1998;177:13–17*

18 *Velazquez FR, Matson DO, Guerrero ML, et al. Serum antibody as a marker of protection against natural rotavirus infection and disease. J Infect Dis. 2000; 182:1602–1609*

19 *Clark HF, Offit PA, Glass RI, Ward RL. Rotavirus. In: Plotkin SA, Orenstein WA Eds. Vaccines. 4th edition. Elsevier, Philadelphia. 2004: 1327-1345*

20 *Conner ME and Ramig RF. Viral enteric diseases. In: Nathanson N ed. Viral pathogenesis. Lippicott-Raven, Philadelphia. 1997:713-743*

21 *Velazquez FR, Matson DO, Calva JJ, et al. Rotavirus infection in infants as protection against subsequent infections. N Engl J Med. 1996;335:1022–1028*

FT60

Crohn's Dısease Case Wıth Unusual Clınıcal Applıcatıon

Uzm. Dr. Atike ATALAY

INTRODUCTION

Crohn's disease (CH) is a chronic inflammatory condition that can occur anywhere in the gastrointestinal tract. Although CH can contain any part of the gastrointestinal tract, 20% of patients have isolated colonic disease, 30% of small intestine, and 50% of ileum with colon involvement. It is known that 25% to 30% of all CH cases occur in children under 19 years of age. CH occurs mainly with gastrointestinal symptoms such as abdominal pain, diarrhea and blood in the feces, but since it is a systemic immune disease, it affects other systems as well as being involved in the digestive system and indicates extraintestinal symptoms (arthritis, rash, developmental delay….). Endoscopic findings include mucosal edema, erythema, granuloma, cobblestone, ulcer and stenosis. It has shown that in cases with inflammatory bowel disease, extraintestinal symptoms are often CH and the incidence is between 6% and 47%. Aggressive treatment is required in children with CH due to reasons for direct growth effect, especially height and weight gain. [1,2]

METHODOLOGY

A 13-year-old female patient was evaluated by the emergency department which she applied for acute appendicitis and consulted with the pediatric surgery department, and the patient is operated for appendectomy. The patient's surgical material shows a bleeding ulcer at the end of the 18 cm small intestine, and the mucosa is flattened. In the 13 cm large intestine segment, a 2.5 cm bleeding edematous polypoid appearance, ulcer and multiple lymph nodes and cecum necrosis are observed. Considering that there will be no primary repair; the patient underwent appendectomy, right hemicolectomy and excision of 15 cm of ileum. During the histopathological examination of the surgical material, ulcers in the small and large intestine, pseudopolip, aphthous erosion on the surface, ischemic active chronic inflammation, cryptitis, sparse crypt abscess, crypt distortion, submucosa giant cell-containing histiocyte community (foreign body granuloma?) was reported and was referred to pediatric gastroenterology department. One week before the operation, the patient had severe leg pain, which showed withdrawal to the groin in the right leg; moreover she had complaints of loss of appetite, bad breath, and was not accompanied by fever, abdominal pain, vomiting, bloody stools, and tenesmus. On the physical examination, she had a height of 152 cm (10-25 p), weight: 49 kg (25-50 p), pallor, abdominal scar, and clubbing. Laboratory indicators were as follows: Hemoglobin: 11.5 g / dL, White cell: 8400 / mm3, Platelet: 822,000 / µL, MCV: 82 fl, RDW: 18%, Ferritin: 36 ng / mL (normal range: 11-3060 ng / mL), Iron: 51 µ / dL (normal range: 33-193 µ / dl) Vitamin B12: 189 pg / ml Sedimentation 1 h: 10 MM /, stool hHb: negative. For possible granulomatous pathologies, PPD was negative, Quantiferon was negative, chest X-ray was normal, wide stool examination were normal, and celiac autoantibodies were found to be normal. Colonoscopy could not be performed because the operation time was not appropriate, but it was planned to be performed in the follow-up. For CH Anti-Saccharomyces Cerevisiae 'Antibody Ig CH and Ig G was positive and Perinuclear Anti-neutrophil Cytoplasmic Antibody was negative. The patient was accepted as CH and started treatment and was followed up. Weight gain was achieved with enteral support including steroids, immunomodulators and TGF-B, and clinical recovery was achieved.

CONCLUSION

The patient who had no complaints before atypical presentation was diagnosed as crohn's disease after further examination; this caused early treatment of the patient and leading to close follow-up for possible complications. CH follows a chronic, progressive course in which many patients require complicated surgical intervention. Nowadays, clinical remission based solely on symptom control is no longer acceptable and has been associated with surgical risk in mucosal healing, length of hospital stay, reduction of disease-related complications, and longer-term clinical remission.

References

1. *Sawczenko A, Ballinger AB, Savage MO, Sanderson IR. Clinical features affecting final adult height in patients with pediatric-onset Crohn's disease. Pediatrics 2006;118:124-9. PUBMED | CROSSREF 9.*
2. *Kanof ME, Lake AM, Bayless TM. Decreased height velocity in children and adolescents before the diagnosis of Crohn's disease. Gastroenterology 1988;95:1523-7. PUBMED | CROSSREF 10.*
3. *Maaser, C., Sturm, A., Vavricka, S. R., Kucharzik, T., Fiorino, G., Annese, V., ... & Burisch, J. (2019). European Crohn's and Colitis Organisation [ECCO] and the European Society of Gastrointestinal and Abdominal Radiology [ESGAR]. ECCO-ESGAR Guideline for Diagnostic Assessment in IBD Part 1: Initial diagnosis, monitoring of known IBD, detection of complications. J Crohns Colitis, 13(2), 144-64.*
4. *Allez, M., Lemann, M., Bonnet, J., Cattan, P., Jian, R., & Modigliani, R. (2002). Long term outcome of patients with active Crohn's disease exhibiting extensive and deep ulcerations at colonoscopy. The American journal of gastroenterology, 97(4), 947-953.*

Peutz-Jeghers Syndrome, Importance of Appropriate Diagnosis and Follow-Up: A Case Report

Uzm. Dr. Atike ATALAY

Introduction

Peutz-Jeghers syndrome (PJS) is an autosomal dominant inheritance disorder with a tendency to predominantly hamartomatous polyposis and cancer in the gastrointestinal tract, in the vermilion margin of the lips, buccal mucosa, around the mouth and nose, perianal area and hands and feet. Hyperpigmentation of the lips, which is one of the striking findings of this syndrome, can occur at any stage of life starting from infancy and tends to disappear after puberty. Due to polyps developing in the gastrointestinal tract, initial complaints are usually abdominal pain, invagination, and treatment-resistant iron deficiency anemia. Although the age of onset of these complaints is from childhood, the mean age at diagnosis is reported as 20s.

METHODOLOGY

When a 10-year-old male patient was referred by a dermatology doctor with complaints of bruising on his lips, it was learned that the patient had a long history of abdominal pain. It was reported that the patient had received iron deficiency treatment repeatedly but the anemia complaint still persisted. He had a history of rectal prolapse. Physical examination revealed height: 135 cm (25-50 p) weight: 40 kg (75-90 p), hypepigmentation of the lips and hypepigmentation of the buccal mucosa. System examination was normal. Physical examination revealed that length was: 135 cm (25-50 p) weight: 40 kg (75-90 p). Hypepigmentation of the lips and buccal mucosa were observed, and systemic examination was normal. Laboratory tests Hemoglobin: 10.8 g / dL, White cell: 9700 / mm3, Platelet: 493,000 / µL, MCV: 75 fl, RDW: 22%, Ferritin: 7.8 ng / mL (normal range: 30-400 ng / mL), Iron: 13 µ / dL (normal range: 33-193 µ / dl). Anisocytosis, polychromasia, and poikilocytosis were detected in peripheral smear. Stool hHb: negative Pt: 11.8 sec INR: 1.01 was found to be normal. In the upper endoscopy of the patient, several polyps narrowing to 1 cm, one 2 cm pylor narrowing in the stomach antrum and two polyps less than 1 cm in the duodenum were observed and polypectomy was performed to the small polyps, but the large polyp in the pyloric mouth was not removed endoscopically. Colonoscopy showed polyposis in terminal ileum and 3 polyps less than 1 cm in sigmoid colon. Polypectomy was performed on polyps in sigmoid colon. The polyps in the antrum and veduodenum were found to be compatible with hyperplastic polyps, whereas polyps in the sigmoid colon were compatible with hamartomatous polyps. Polyp was not detected in our patient's ear, nose and throat examination. genetic examination was sent. Family members were directed to screening for possible types of cancer.

CONCLUSION

In patients with hyperpigmented macular rash, most commonly located in the buccal mucosa and lips, PJS comes to mind with careful physical examination and family interrogation before the development of complaints such as treatment-resistant iron deficiency anemia, recurrent abdominal pain, and developmental retardation that we frequently encounter in childhood, these patients and other family members should be screened with further investigations and followed up for complications.

References

1 *Calva D, Howe JR. Hamartomatous polyposis syndromes. Surg Clin North Am 2008;88(4):779-817.*

2 *Amos CI, Keitheri-Cheteri MB, Sabripour M,Wei C, McGarrity TJ, Seldin MF, et al. Genotype-phenotype correlations in Peutz-Jeghers syndrome. J Med Genet 2004;41(5):327-33.*

3 *Vidal I, Podevin G, Piloquet H, Le Rhun M, Fremond B, Aubert D, et al. Follow-up and surgical management of Peutz-Jeghers syndrome in children. J Pediatr Gastroenterol Nutr 2009;48(4):419-25*

FT62

Reliability Of Different Endoscopic Classification Systems In Predicting Pediatric Reflux Esophagitis

Halil Haldun EMİROĞLU[1], Özlem DURMAZ[1], Uğur ÇEVİKBAŞ[2], Semra SÖKÜCÜ[1]

[1]Istanbul University Istanbul School of Medicine, Department of Pediatrics, Division of Pediatric Gastroenterology, Hepatology and Nutrition

[2]Istanbul University Istanbul School of Medicine, Department of Pathology

Abstract

Aim: Retrospective in nature, this study was aimed at evaluating the reliability of four endoscopic classification systems in predicting histological reflux esophagitis in children undergoing esophagogastroduedenoscopy.

Materials and Methods: This retrospective study included 213 children (112 male, 101 female, average age 8.4 ± 4.8 years, median age 9 years, range 2 months–18 years) who underwent diagnostic esophagogastroduodenoscopy between January 2002 and December 2004 and evaluated for the presence of reflux esophagitis. Data for age and gender, and detailed endoscopic and histopathological reports were retrieved from medical records. Los Angeles, Savary-Miller, Hetzel-Dent, and Tytgat endoscopic classification systems were used in the evaluation of patients with erosive distal esophagitis. The histological findings were classified according to Knuff & Leape. When reflux-related esophageal damage was identified as a result of the histological examination of endoscopic biopsy samples collected from distal esophagus, the patients were diagnosed with reflux esophagitis. The Statistical Package for the Social Sciences for Windows Release 12.0 (SPSS, Chicago, IL, USA) was used to analyse the statistical data.

Results:

On the histological examination of esophageal mucosal biopsy specimens of 213 patients, 71 (33.3%) patients had normal (grade 0), 75 (35.2%) patients with only histologic changes of reflux (grade 1) without esophagitis and 67 (31.5%) patients were reflux esophagitis (grade 2–5) were detected. There were 49 (23%) patients with mild esophagitis (grade 2), 6 (3%) patients with moderate esophagitis (grade 3) and 12 (6%) patients with severe esophagitis 2 (1%) patients with grade 4 and 10 (5%) patients with grade 5) in 67 patients with reflux esophagitis.

On the endoscopical examination of esophageal mucosal appearances of 213 patients, 36 (16.9%) patients, 36 (16.9%) patients, 100 (46.9%) patients and 90 (42.3%) patients were diagnosed with esophagitis according to the Los Angeles, Savary-Miller, Hetzel-Dent and Tytgat endoscopic classification systems, respectively. When the four different endoscopic classification systems evaluated in terms of score correlation with the histological diagnosis, the most linear relationship was found between LA endoscopic classification and Knuff & Leape histological classification ($r = 0.544$, $p < 0.01$).

Conclusion:

No significant strong association in the prevalence of reflux esophagitis between the endoscopic classification systems and Knuff & Leape histological classification. The Los Angeles endoscopic classification more compatible with Knuff & Leape histological

classification than other endoscopic classification systems. Though not so safe, the Los Angeles endoscopic classification can be recommended in children as in adults.

Keywords: *Gastroesophageal reflux disease, esophagitis, endoscopy, histopathology*

INTRODUCTION

Gastroesophageal reflux disease (GERD), the most common disease of the gastrointestinal tract in western countries (1–3). The prevalence of GERD symptoms ranged in 10% to 20% in Western Europe and North America. Prevalence, in Turkey (22.8%) similar to the levels with European countries (4, 5).

No clinical signs are considered the gold standard for diagnostic aspects of symptoms of GERD. Therefore, the incidence and prevalence of GERD is suggested to be more than known (6).

Endoscopy, particularly when supplemented by histology, is the most accurate method of demonstrating esophageal damage caused by reflux (7). For adult patients with reflux esophagitis based on the classification of the various classification systems have been developed for use in endoscopic appearance. Although there is no one actually fully adequate, these methods are important in terms of endoscopic assessments provide a standard comment (6, 8). Savary-Miller (SM), Hetzel-Dent (HD), Los Angeles (LA), and Tytgat endoscopic classification systems are widely used in adult patients (6, 8–10).

Retrospective in nature, this study was aimed at evaluating the reliability of four endoscopic classification systems in predicting histological reflux esophagitis in children undergoing esophagogastroduedenoscopy.

MATERIALS AND METHODS

Patients

This retrospective study included 213 children (112 male, 101 female, average age 8.4 ± 4.8 years, median age 9 years, range 2 months–18 years) who underwent diagnostic esophagogastroduodenoscopy between January 2002 and December 2004 and evaluated for the presence of reflux esophagitis. Data for age and gender, and detailed endoscopic and histopathological reports were retrieved from medical records. Endoscopic images of the patients and histopathological preparations were retrieved from computer archive and pathology archive, respectively. Images and histopathological preparations were re-examined for the purpose of this study.

None of the patients had upper gastrointestinal surgery, malignancy or esophageal varices. None had received antibiotics or bismuth during the last 6 months. Those using H2 blockers, proton pump inhibitors, alcohol, aspirin or non-steroidal anti-inflammatory drugs had discontinued such a treatment one week prior to the study. Patients with esophagitis due to causes other than reflux (e.g. eosinophilic esophagitis, infection) based on histological findings were not included.

Endoscopic examination and biopsy

The indications for endoscopy and the number of patients who had them were as follows: pre-diagnosis of celiac disease in 60 patients (28.2%), dyspepsia in 37 patients (17.4%), epigastric pain in 29 patients (13.6%), burning sensation in the retrosternal area in 27 patients (12.7%), regurgitation in 20 patients (9.4%), asthma in 11 patients (5.2%), recurrent pneumoniae in nine patients (4.2%), routine evaluation of gastrointestinal system before kidney transplantation in eight patients (3.8%), chronic cough in seven patients (3.3%), routine

evaluation for portal hypertension in four patients (1.9%), suspected enteropathy of infancy in one patient (0.5%).

Endoscopic examinations had been carried out by one of the two experienced endoscopists in the department. All the endoscopic examinations were performed using Fujinon EG-250PE (infants 0–1 year or <10 kg) or EG-250HR (children >1 year or >10 kg) model video endoscopes (Fuji Photo Optical Company Ltd, Tokyo, Japan). LA classification system had been used for the evaluation of patients with erosive distal esophagitis during the initial examination procedure. For the purpose of this study, each patient was classified using SM, Tytgat, and HD classification systems using endoscopy reports and computer images.

At the end of each endoscopic procedure, four fragments had been collected from the distal esophagus, at least 3 cm above the gastroesophageal mucosal junction, using biopsy forceps that remove samples sized between 2 and 2.5 mm. The specimens had been submitted to routine histological processing, embedded in paraffin and sectioned perpendicular to the mucosal surface. Slices of 5-6 µm thickness had been mounted on slides and then stained with haematoxylin & eosin (HE). For the purpose of this study, preparations were re-examined using a conventional binocular optical microscope of Olympus BH2 model (Olympus Company, Tokyo, Japan). If the eosinophil count was lower than 15 per high power field, histological reflux-related changes could be distinguished from eosinophilic esophagitis (12). The findings were classified according to Knuff & Leape as recommended by the European Society for Paediatric Gastroenterology, Hepatology and Nutrition (13, 14). A score equal to or greater than 2 was considered reflux esophagitis.

Statistical analysis

The Statistical Package for the Social Sciences for Windows Release 12.0 (SPSS, Chicago, IL, USA) was used to analyse the statistical data. Results are expressed as mean values and standard deviation (SD). For each classification system, the sensitivity, specificity, positive and negative predictive values for the detection of reflex esophagitis are calculated and compared. Correlations between the scores of different classification system were examined using Pearson's correlation analysis. A p value <0.05 was considered an indication of statistical significance.

RESULTS

On the histological examination of esophageal mucosal biopsy specimens of 213 patients, 71 (33.3%) patients had normal (grade 0), 75 (35.2%) patients with only histologic changes of reflux (grade 1) without esophagitis and 67 (31.5%) patients were reflux esophagitis (grade 2–5) were detected. There were 49 (23%) patients with mild esophagitis (grade 2), 6 (3%) patients with moderate esophagitis (grade 3) and 12 (6%) patients with severe esophagitis 2 (1%) patients with grade 4 and 10 (5%) patients with grade 5) in 67 patients with reflux esophagitis. Demographic characteristics were similar in patients with and without esophagitis; however, presence of GERD symptoms was more frequent in the group of patients with histologically confirmed reflux esophagitis (Table 1).

On the endoscopical examination of esophageal mucosal appearances of 213 patients, 36 (16.9%) patients, 36 (16.9%) patients, 100 (46.9%) patients and 90 (42.3%) patients were diagnosed with esophagitis according to the LA, SM, HD and Tytgat endoscopic classification systems, respectively.

Diagnostic value of each endoscopic classification system for the diagnosis of reflux esophagitis is shown in Table 2. All diagnostic parameters were similar for SM and LA classifications. The sensitivities of HD and Tytgat classifications for the prediction of histologically confirmed reflux esophagitis were significantly better than both SM and LA classifications (SM vs. HD, p=0.001; SM vs. Tytgat, p=0.006; LA vs. HD, p=0.001; LA vs.

Tytgat, p=0.006). However, HD and Tytgat classifications did not differ with regard to sensitivity (p=0.594).
With regard to specificity, SM and LA classifications had better specificities when compared to both HD and Tytgat classifications (p<0.001 for all comparisons). On the other hand, Savary-Miller had similar specificity with LA (p=1.00); and HD and Tytgat had similar specificities (p=0.395).
Among the four different endoscopic classification systems, the most consistent relation was found between the scores of LA and SM classification systems (r= 0.989, p<0.001). When the four different endoscopic classification systems evaluated in terms of score correlation with the histological diagnosis, the most linear relationship was found between LA endoscopic classification and Knuff & Leape histological classification (r = 0.544, p <0.01). Table 3 shows the correlations of the scores of the different classification systems.

DISCUSSION

GERD symptoms to diagnosis in paediatric patients after 8 years of age be evaluated as a more reliable (4, 11). Because of not apply to the treatment of GERD in infants Barrett's esophagus and esophageal adenocarcinoma later in life, such as the possible complications of GERD may occur (14). Inadequate weight gain or intermittent torticollis due to Sandifer syndrome should be considered in the paediatric GERD symptoms (7, 11, 15, 16). Unlike adults in the paediatric patients the correlation between the presence of GERD symptoms and esophagitis is not good enough (11, 17, 18). In a multicenter study carried out by Lombardi and colleagues in the 136 paediatric patients with GERD symptoms was not a good relationship with histological esophagitis (19).
According to the definition of GERD is present when reflux of gastric contents causes troublesome symptoms and/or complications. The same consensus also admits that histology has limited use in establishing or excluding a diagnosis of GERD. Reflux esophagitis could be interpreted as a marker for GERD (11). Since in the children neither the GERD symptoms nor the endoscopic findings are not sufficiently reliable for the diagnosis of GERD, during endoscopic examination esophageal mucosal biopsy is proposed as a routine practice (7).

CONCLUSION

There is no significant strong association in the prevalence of reflux esophagitis between the endoscopic classification systems and Knuff & Leape histological classification. The LA endoscopic classification more compatible with Knuff & Leape histological classification than other endoscopic classification systems. Though not so safe, the LA endoscopic classification can be recommended in children as in adults.

References

1 *Moayyedi P, Talley N. Gastro-oesophageal reflux disease. Lancet 2006; 367: 2086 – 100.*
2 *Locke GR, Talley NJ, Fett SL, et al. Prevalence and clinical spectrum of gastroesophageal reflux: a population-based study in Olmsted County, Minnesota. Gastroenterology 1997; 112: 1448 – 56.*
3 *Shaheen N, Ransohoff DF. Gastroesophageal reflux, Barrett esophagus, and esophageal cancer: scientific review. JAMA 2002; 287: 1972 – 81.*
4 *Vakil N, Zanten SV, Kahrilas P, et al. The Montreal definition and classification of gastroesophageal reflux disease: a global evidence – based consensus. Am J Gastroenterol 2006; 101: 1900 – 20.*
5 *Bor S, Mandıracıoğlu A, Kitapçıoğlu G, et al. Gastroesophageal reflux in a low income region in Turkey. Am J Gastroenterol 2005; 100: 759 – 65.*

6 *Vandenplas Y. Gastroesophageal reflux. In: Guandalini S, Dhawan A, Branski D (eds). Textbook of Pediatric Gastroenterology, Hepatology and Nutrition. Switzerland: Springer, 2016, 104 – 30.*

7 *Rudolph CD, Mazur LJ, Liptak GS, Baker RD, Boyle JT, Colletti RB, et al. North American Society for Pediatric Gastroenterology and Nutrition. Guidelines for evaluation and treatment of gastroesophageal reflux in infants and children: recommendations of the North American Society for Pediatric Gastroenterology and Nutrition. J Pediatr Gastroenterol Nutr. 2001;32 Suppl 2:S1 – 31.*

8 *Lundell LR, Dent J, Bennett JR, et al. Endoscopic assessment of oesophagitis: clinical and functional correlates and further validation of the Los Angeles classification. Gut 1999; 45: 172 – 80.*

9 *Richter JE. Diagnostic tests for gastroesophageal reflux disease. Am J Med Sci 2003; 326: 300 – 8.*

10 *Vieira MC, Pisani JC, Mulinari RA. Diagnosis of reflux esophagitis in infants: histology of the distal esophagus must complement upper gastrointestinal endoscopy. J Pediatr (Rio J) 2004; 80: 197 – 202.*

11 *Sherman PM, Hassall E, Fagundes-Neto U, et al. A global, evidence-based consensus on the definition of gastroesophageal reflux disease in the pediatric population. Am J Gastroenterol 2009; 104: 1278 – 95.*

12 *Vandenplas Y. Reflux esophagitis in infants and children: a report from the Working Group on Gastroesophageal Reflux Disease of the European Society of Paediatric Gastroenterology and Nutrition. J Pediatr Gastroenterol Nutr 1994; 18: 413 – 22.*

13 *Thomson M. Esophagitis. In: Walker WA, Goulet O, Kleinman RE, Sherman PM, Shneider BL, Sanderson IR, eds. Pediatric gastrointestinal disease. 4 th ed. Hamilton: BC Decker Inc, 2004; 400 – 23.*

14 *Gold BD. Is gastroesophageal reflux disease really a life-long disease: do babies who regurtitate grow up to be adults with GERD complications? Am J Gastroenterol 2006; 101: 641 – 4.*

15 *Werlin SL, D'Souza BJ, Hogan WJ, et al. Sandifer syndrome: an unappreciated clinical entity. Dev Med Child Neurol 1980; 22. 374 – 8.*

16 *Gorrotxategi P, Reguilon MJ, Arana J, et al. Gastroesophageal reflux in association with the Sandifer syndrome. Eur J Pediatr Surg 1995; 5: 203 – 5.*

17 *Biller JA, Winter HS, Grand RJ, et al. Are endoscopic changes predictive of histologic esophagitis in children? J Pediatr 1983; 103: 215 – 8.*

18 *Wenner J, Hall M, Höglund P, Johansson J, Johnsson F, Oberg S. Wireless pH recording immediately above the squamocolumnar junction improves the diagnostic performance of esophageal pH studies. Am J Gastroenterol. 2008; 103: 2977 – 85.*

19 *Lombardi G, de'Angelis G, Rutigliano V, et al. Digestive and Liver Disease 2007; 39: 864–71.*

FT63

Association Of İnterrupted Aortic Arch Type C And Microdeletion 22q11.2: A Newborn Case Report

İrfan TAŞOĞLU[1], Dilek DİLLİ[2], Utku Arman ÖRÜN[3], Hasan AKDUMAN[2], Rumeysa ÇİTLİ[2], Başak SORAN TÜRKCAN[1]

[1]Department of Pediatric Cardiovascular Surgery, Ankara City Hospital, Ankara, Türkiye

[2]Department of Neonatology, University of Health Sciences, Dr Sami Ulus Maternity and Children Research and Training Hospital, Ankara, Türkiye

[3]Department of Pediatric Cardiology, University of Health Sciences, Dr Sami Ulus Maternity and Children Research and Training Hospital, Ankara, Türkiye

Abstract

Background:
DiGeorge syndrome is a congenital genetic disorder characterized by a variety of findings, including cardiac defects, craniofacial dysmorphism, cleft palate, thymic hypoplasia and hypoparathyroidism. This rare syndrome is mainly caused due to deletion of chromosome 22q11.2. The patients with this condition are prone to develop *infections* due to poor T-cell formation and function. DiGeorge syndrome is frequently associated with interrupted aortic arch (IAA) and truncus arteriosus. Here we report a case of IAA type C associated with 22q11.2 deletion.

Case:
A 7-day-old female newborn was admitted with signs of cardiac failure and mild cyanosis. Physical examination revealed a grade 3/6 precordial systolic murmur, moderate hepatomegaly, normal peripheral pulses and facial dysmorphism. Echocardiography showed a large perimembranous ventricular septal defect (VSD), IAA (aortic interruption between the innominate artery and the left carotid artery; type C) with a wide ductus arteriosus. At day 9, she was operated for the correction of IAA and *patch* closure of the *VSD* via a median full sternotomy. Hypocalcemic convulsions caused by hypoparathyroidism occurred at day 10, requiring intravenous calcium supplementation and anticonvulsant therapy. Cytogenetic evaluation revealed chromosomal abnormality; 46,XX,del (22)(q11.2). She was diagnosed to be DiGeorge syndrome with characteristic physical features and genotypic findings. The patient was discharged at day 28 in good health. Presently, at 6th month, the child has slightly retarded growth and mild tachydyspnea. She has complained recurrent respiratory infections. She is still under follow-up of departments of pediatric cardiology, genetics, pediatric immunology, and developmental pediatrics.

Conclusion:
By this report we would like to point out that all patients with IAA who have additional features specific for 22q11.2 microdeletion syndrome should be screened for the presence of this deletion.

Keywords: *DiGeorge syndrome, interrupted aortic arch, newborn*

Introduction

Interrupted aortic arch (IAA) is a severe congenital heart defect which is divided into three types (A, B, and C) according to the absence of the luminal continuity between the ascending

and descending aorta (1). DiGeorge syndrome is frequently associated with interrupted aortic arch (IAA) and truncus arteriosus (2). DiGeorge syndrome is a congenital genetic disorder characterized by a variety of findings, including cardiac defects, craniofacial dysmorphism, cleft palate, thymic hypoplasia and hypoparathyroidism. This rare syndrome is mainly caused due to deletion of chromosome 22q11.2. Frequently, IAA type B is accompanied to DiGeorge syndrome. IAA type C is also considered to have similar genetic mechanisms with IAA type B (3-6). However, there are rare reports on the 22q11.2 microdeletion and association of IAA type C (3-5). Here we report a case of IAA type C associated with 22q11.2 deletion.

Case report

A 7-day-old female newborn who was born by cesarean delivery at 38 wees of gestation. The The pregnancy was uncomplicated and the parents were healthy. The parents were first cousins. She had one healthy sibling. She was admitted to emergency department with signs of cardiac failure and mild cyanosis and hospitalized in NICU. Physical examination revealed a grade 3/6 precordial systolic murmur, moderate hepatomegaly, normal peripheral pulses and facial dysmorphism. The chest X-ray film showed an enlarged cardiac shadow (Fig.1). Echocardiography and angiography showed a large perimembranous ventricular septal defect (VSD), IAA (aortic interruption between the innominate artery and the left carotid artery; type C) with a wide ductus arteriosus (Fig. 2). We started prostaglandin E l infusion. At day 9, she was operated for the correction of IAA and *patch* closure of the *VSD* via a median full sternotomy. Hypocalcemic convulsions caused by hypoparathyroidism occurred at day 10, requiring intravenous calcium supplementation and anticonvulsant therapy. No other malformations were detected. Cytogenetic evaluation revealed chromosomal abnormality; 46,XX,del (22)(q11.2). She was diagnosed to be DiGeorge syndrome with characteristic physical features and genotypic findings. The patient was discharged at day 28 in good health. Presently, at 6th month, the child has slightly retarded growth and mild tachydyspnea. She has complained recurrent respiratory infections. She is still under follow-up of departments of pediatric cardiology, genetics, pediatric immunology, and developmental pediatrics.

Discussion

A rare type of congenital heart disease is an IAA, which affects approximately 1.5% of congenital heart disease patients (7). IAA is an anomaly that can be considered the most severe form of aortic coarctation (8). In an IAA, there is an anatomical and luminal disruption between the ascending and descending aorta. IAA is a ductus dependent lesion since this is the only way the blood flow can travel to places distal to the disruption. There is posterior malalignment of the conal septum additional to the interrupted aortic arch, producing a VSD as an associated lesion. This lesion is present in approximately 73% of all cases. Besides a VSD, IAA can be associated with other more complicated cardiac anomalies; for example, transposition of the great arteries, truncus arteriosus, aortopulmonary window, single ventricle, aortic valve atresia, right-sided ductus, and double-outlet right ventricle (7). The incidence of IAA is about 2 cases per 100,000 live births (9). Nearly all patients with IAA present in the first 2 weeks of life when the ductus arteriosus closes. Most patients present in the first day of life. The presented case here also had a large perimembranous VSD associated to IAA with a wide ductus arteriosus. She was admitted to NICU on the 7th day of life.

Once diagnosed, the treatment is immediate surgery. The objective of the surgery is to form unobstructed continuity between the ascending and descending aorta and to repair associated defects with the most common atrial and/or ventricular septum defect. The repair is done using either native arterial tissue, a homograph, or autograph vascular patch. For VSD, repairs

are closed with a synthetic patch. Our patient was operated at day 9 for the correction of IAA and *patch* closure of the *VSD* via a median full sternotomy.

DiGeorge syndrome is a congenital genetic disorder characterized by a variety of findings, including cardiac defects, craniofacial dysmorphism, cleft palate, thymic hypoplasia and hypoparathyroidism. This rare syndrome is mainly caused due to deletion of chromosome 22q11.2. On the fourth to the sixth week of gestation, the cardiac neural crest cells migrate from the hindbrain region to the pharyngeal arches (7). Recent evidence revealed that these migrated cells were coordinated for proper remodeling of the aortic arch by the several signals coded at human chromosome 22q11.2.

DiGeorge syndrome is frequently associated with interrupted aortic arch (IAA) and truncus arteriosus (10). Here we report a case of IAA type C associated with 22q11.2 deletion. Fujii et al. (5) described on the first case of IAA type C detected in Japan who is associated with DiGeorge syndrome in 22q11.2 hemizygosity. Our case is also a clinical case that advocated one of the genetic causes was 22q11.2 deletion for development of IAA type C.

The patients with this condition are prone to develop *infections* due to poor T-cell formation and function (3). Our patient, presently, (6-month-old), has slightly retarded growth and mild tachydyspnea. She has complained recurrent respiratory infections. She is still under follow-up of departments of pediatric cardiology, genetics, pediatric immunology, and developmental pediatrics.

By this report we would like to point out that all patients with IAA who have additional features specific for 22q11.2 microdeletion syndrome should be screened for the presence of this deletion.

Figure legends:

Figure 1: Chest X-ray of the patient with interrupted aortic arch, showing enlarged cardiac shadow and pulmonary edema.

Figure 2: Angiographic image of the same patient sshowing aortic interruption between the innominate artery and the left carotid artery; type C with a wide ductus arteriosus.

References

1- *Celoria GC, Patton RB. Congenital absence of the aortic arch.Am. Heart J.1959;58: 407–13.*
2- *Rauch A, Hofbeck M, Leipold G et al. Incidence and significance of 22q11.2 hemizygosity in patients with interrupted aortic arch. Am. J. Med. Genet.1998;78: 322–31.*
3- *Marino B, Digilio MC, Persiani M.et al.Deletion 22q11 in patients with interrupted aortic arch. Am. J. Cardiol.1999;84:360–1.*
4- *Agnoletti G, Borghi A, Annecchino F. A rare form of interrupted aortic arch.Ital. Heart. J.2001;2: 228–30.*
5- *Fujii I, Ueno Y, Kurano R, Goto Y. Interrupted aortic arch type C associated with DiGeorge syndrome in 22q11.2 deletion: first case detected in Japan. Pediatr Int. 2005;47(6):698-700.*
6- *Lindsay EA. Chromosomal microdeletions: dissecting del22q11 syndrome. Nat. Rev. Genet.2001;2: 858–68.*
7- *Scambler PJ. The 22q11 deletion syndromes.Hum. Mol.Genet.2000;9: 2421–6.*
8- *Ramirez Alcantara J, Mendez MD. Interrupted Aortic Arch. StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2019-2019 Feb 10.*
9- *Hoffman JI, Kaplan S. The incidence of congenital heart disease. J. Am. Coll. Cardiol. 2002 Jun 19;39(12):1890-900.*
10- *McDonald-McGinn DM, Sullivan KE. Chromosome 22q11.2 deletion syndrome (DiGeorge syndrome/velocardiofacial syndrome). Medicine (Baltimore). 2011;90(1):1-18.*

FT64

End Tidal Carbon Dioxide ($EtCO_2$) Measurement in Newborns (When?, Where? and How?)

Assoc. Prof. Dilek Dilli

Neonatologist

Respiratory diseases in newborns are common clinical problems, especially in preterm infants. Formerly, the only method to evaluate the adequacy of ventilation and oxygenation was by assessment of arterial blood gas (ABG) in these patients. ABG, which is a painful and time consuming procedure, provides intermittent, not continuous data, that limits its use in documenting transient events. Therefore, noninvasive systems such as pulse oximetry to determine oxygenation, and transcutaneous carbon dioxide ($PtcCO_2$) monitoring and end-tidal CO_2 ($EtCO_2$) measurement to evaluate the CO_2 status of critically ill neonates have become increasingly popular. The $EtCO_2$ monitoring has some clear advantages over the transcutaneous CO_2 monitoring, such as a much faster response time to changes in blood CO_2 levels, internal calibrating ability and no thermal injury to the fragile skin of the newborn.
$EtCO_2$ measurement is based on the principle that CO_2 will be detected during expiration from a correctly placed endotracheal tube (ETT). $EtCO_2$ can be detected by capnography, capnometry or colorimetric devices. The presence of $EtCO_2$ was detected significantly quicker by a capnograph than the time to reach the $EtCO_2$ level when a colour change would be first observed using a colorimetric device. Besides, contamination of colorimetric device with gastric fluid, surfactant or medications such as atropine and epinephrine can lead to false-positive results. Capnography is done by either side stream or main stream gas sampling; low flow capnography with side stream (Microstream) technology is the preferred system in NICU. A diagram of a normal capnogram is seen in Fig. 1. Most neonatal studies have shown a good correlation between $EtCO_2$ and $PaCO_2$ ($r=0.8$), even in preterm infants. This correlation falls with significant respiratory failure. In conjunction with ABG analysis, capnography can provide valuable information about ventilation/perfusion (V/Q) disturbances of the lung.

Normal Capnogram (Fig. 1)
Phase I (inspiratory baseline) reflects inspired gas, which is normally devoid of carbon dioxide
Phase II (expiratory upstroke) a rapid rise in CO_2 concentration as anatomical dead space is replaced with alveolar gas
Phase III is the alveolar plateau. PCO_2 of the last alveolar gas sampled at the airway opening is called the $EtCO_2$
Phase 0 is the inspiratory downstroke, the beginning of the next inspiration

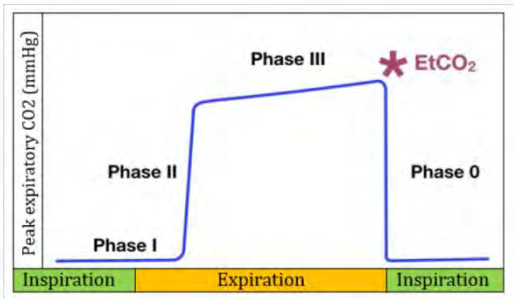


Fig. 1: Diagram of a normal capnogram that includes the inspiratory and expiratory phase (Ref. 1).

Indications for Use of End-Tidal CO_2 Monitoring

-To confirm correct ETT placement: One of the most common causes of neonatal intubation failure is inadvertent oesophageal intubation, which can have catastrophic consequences. The mostly used methods of correct placement of ETT include chest wall rise with inflations, auscultation of air entry, the appearance of condensation in the tube during expiration and improvements in oxygen saturation, colour and heart rate. Some of these signs, are subjective. The addition of CO_2 detection using the colorimetric device is a very useful adjunct to clinical assessment; with an oesophageal tube little or no CO_2 is present. However, 'good $EtCO_2$ reading' does not give good information about the exact position of the endotracheal tube in the airway, i.e. an ETT could be too high or low (main stem bronchus) with an acceptable $EtCO_2$.

-During transport from secondary to tertiary care centers: Due to the nature of transport, inadvertent extubation may occur at any point enroute. The noisy environments of the ambulance or helicopter makes evaluation of ETT position difficult. Continuous use of portable CO_2 monitors during transport would provide an effective visual check of ETT position and effectively reassure team members. Further, it indirectly confirms ventilation and circulation.

-Integrity of ventilation: Capnography can identify disconnections in the ventilatory circuit instantaneously before O_2 and CO_2 levels change in the blood. During the course of IPPV in infants with no spontaneous breathing, $EtCO_2$ falls to zero instantaneously following the disconnections in the circuit and sounds an alarm. Corrective measures can be instituted immediately before irreversible damage is caused by prolonged hypoxia.

-Occlusion and displacement of ETT: Capnography can detect a total occlusion or accidental extubation. Total occlusion or displacement of ETT produces loss of CO_2 waveform in capnography. Ventilation through partially kinked or obstructed tube produces distortions in CO_2 waveform (prolonged phase II and steeper phase III, and irregular height of the CO_2 tracings.

-Apnea monitor**:** Accurate information about the rate and rhythm of respiration can be obtained by sampling CO_2 from respired gases using nasal adaptors. During apnea of either type, the CO_2 concentration at the sampling site falls rapidly and can be instantaneously detected by capnography. Therefore CO_2 monitoring serves as a reliable apnea monitor in neonates.

-Non-invasive monitoring of the arterial $PaCO_2$: In infants breathing spontaneously, the $EtCO_2$ values range from 36-40 mmHg. Normally $EtCO_2$, as sampled from the nasal cavity in neonates, with healthy lungs breathing spontaneously is a good estimate of $PaCO_2$. The (arterial-endotracheal; a-ET) PCO_2 gradient can vary from - 0.65 mmHg to 2.4 mmHg. In preterm infants the gradient may be 3.5 mmHg. Alveolar hypoventilation increases $PaCO_2$ as well as $EtCO_2$. Capnography also serves as a useful device to monitor $PaCO_2$ during

mechanical ventilation of intubated neonates. It is prudent to establish the relationship of $EtCO_2$ to $PaCO_2$ initially by blood gas analysis. Thereafter, changes in $PaCO_2$ may be assumed to occur in parallel with those in $EtCO_2$ thus avoiding repeated ABG's.

-Weaning: Capnography can be used to evaluate the trend of $PaCO_2$, breathing pattern, and importantly the consistency of breathing before extubation. Ventilator rates can be gradually decreased to the lowest point at which the patient can comfortably breathe and maintain adequate alveolar ventilation.

-To demonstrate return of spontaneous circulation (ROSC) during cardiac arrest: During cardiac arrest, circulation ceases and $EtCO_2$ gradually disappears, reappearing only when circulation is restored either by effective cardiopulmonary resuscitation or cardiac function. During cardiopulmonary resuscitation, a positive test confirms placement of the ETT within the airway, whereas a negative test indicates either oesophageal placement or airway intubation with poor or absent pulmonary blood flow.

-Monitoring the course of Pulmonary Disease: In neonates with respiratory disease, the (a-Et)PCO_2 difference becomes wider, as for example, in infants with bronchopulmonary dysplasia (BPD), where the gradient may be as much as 9 mmHg. The (a-Et)PCO_2 gradient has been used to assess the effectiveness of diuretic therapy in the improvement in V/Q status of the lung in infants with BPD. The gradient may also be used to assess the improvement in lung function following surfactant therapy in newborns with respiratory distress syndrome (RDS). The shape of capnogram also gives information about V/Q status of the lung. Increased V/Q mismatch is suggested by an increase in the slope of phase III.

Physiological and technical limitations of capnography in newborns:

In newborns, the short exhalation times, low tidal volumes and high impact of apparatus dead space hamper $EtCO_2$ measurements. Newborns require faster CO_2 sensors and low suction flow for side stream measurements. In addition, $EtCO_2$ is not feasible in high-frequency oscillators or jet ventilators as the volume of each breath is less than dead space. The interpretations of $EtCO_2$ values may be challenging in infants with cardiac anomalies, pulmonary hypoperfusion, myocardial dysfunction, or hypoxaemia after asphyxia. False negative results may also occur in severely hypocarbic neonates especially those weighing <1 kg. Many NICUs utilize $PtcCO_2$ as a primary means of $PaCO_2$ monitoring. Finally, the widespread acceptance of capnography for neonates requires new, well designed studies to demonstrate its clinical value and various diagnostic possibilities in these patients.

References:

1- Aminiahidashti *H et al. Applications of End-Tidal Carbon Dioxide (ETCO2) Monitoring in Emergency Department; a Narrative Review.* Emerg (Tehran). 2018; 6(1): e5.

2- Selby ST *An Update on* End-Tidal *CO2* Monitoring. Pediatr Emerg Care. *2018 Dec;34(12):888-892.*

3- *Scrivens A et al.* Is waveform capnography reliable in neonates? *Arch Dis Child. 2019 Jul;104(7):711-715.*

4- *Lin HJ et al.* End-tidal carbon dioxide measurement in preterm infants with low birth weight. *PLoS One. 2017 Oct 17;12(10):e0186408.*

FT65

Lung Ultrasound in Hemodynamic Assessment

Assoc. Prof. Dilek Dilli

Neonatologist

The newborns with compromised hemodynamics and respiratory failure are on higher risks for multiple adverse outcomes. Care of these patients is a challenging issue. Traditional bedside physical examination can be misleading. The chest X-ray and/or chest computerized tomography are the main imaging tools in the diagnosis of lung diseases. In neonatal respiratory and hemodynamic compromise, a combined heart and lung evaluation may help to assess the organ functions. Recently, targeted neonatal echocardiography (TNE) and point-of-care ultrasound (POC-LUS) have been integrated into clinical care in NICUs.

POC-LUS is a easy-to-learn, radiation-free, bedside, quick and repeatable diagnostic method that can be performed in the NICU at the bedside. LUS can reliably and accurately diagnose many neonatal pulmonary diseases such as respiratory distress syndrome (RDS), transient tachypnea of the newborn (TTN), meconium aspiration syndrome (MAS), pneumonia, and pneumothorax.

Normal neonatal lung ultrasound manifestations

The neonatal normal lung field appears hypoechoic on a B-mode ultrasound. Pleural lines and A-lines are smooth, regular and straight. A-lines are hyperechoic, arranged in parallel and equidistant from one each other, which together form a kind of bamboo like appearence known as the bamboo sign. There may not be any B-lines or just a few B-lines (within three to seven days after birth) in the lung fields. However, there is no alveolar interstitial syndrome (AIS), pleural effusion or lung consolidation. Lung sliding is detectable by real-time ultrasound, whereas in M-mode imaging, a linear pattern appears in tissues superficial to the pleural line, and a grainy or sandy pattern appears below the pleural line, creating the seashore sign.

Lung ultrasound findings for lung diseases of the newborns

Respiratory distress syndrome (RDS):

Lung consolidations accompanied by air-bronchograms

The pleural line is abnormal, and the A-lines disappear

The nonconsolidated zones may appear as AIS

The patients may have different degrees of unilateral or bilateral pleural effusion

Transient tachypnea of the newborn (TTN):

Mild TTN mainly manifests as AIS and a double lung point

Severe TTN in the acute period mainly manifests as a compact B-line, white lung, or severe AIS, while a double lung point may appear with disease recovery

Mild or severe TTN is characterized by pleural line abnormalities, A-line disappearance, and different degrees of pleural effusion in one or the bilateral side of the chest

No consolidation is observed in the lung fields

Pneumonia of the newborn:

Lung consolidations accompanied by air-bronchograms or fluid-bronchograms

The pleural line is abnormal and A-lines disappear

B-lines or AIS are visible in the nonconsolidated areas

Different degrees of unilateral or bilateral pleural effusion may be visible

Pneumothorax:

Disappearance of lung sliding is the most important sign in the ultrasound diagnosis of pneumothorax; if lung sliding is present, pneumothorax can essentially be excluded
There are no B-line or comet tail signs; if present pneumothorax can also be excluded
The clear presence of the lung point is a specific sign for ultrasound diagnosis of mild-to-moderate pneumothorax
The pleural line and A-lines are present
Pulmonary atelectasis of the newborn:
Lung consolidation accompanied by air bronchograms, or even dynamic bronchograms or paralel air bronchograms are visible in severe cases
The edges of the consolidation area are relatively clear and regular in severe large-area pulmonary atelectasis; if the atelectasis is limited to a small region, the edges of the consolidation area may not be obvious
The pleural line in the consolidation area is abnormal and A-lines disappear
In the early stages of severe or large-area atelectasis, the lung pulse may be visible while lung sliding often disappears under real-time ultrasound
The pulmonary blood flow may be visible in the consolidated areas by color or power Doppler ultrasound; if atelectasis persists (the final stages of atelectasis), both the dynamic bronchograms and the blood flow will disappear
As conclusion, LUS has the advantages of no radiation, noninvasiveness, and simplicity aside from dynamic observation. To detect the basic signs and then use them for infinite applications, the principles of LUS should be followed. Ultrasound provides a different way of management, opening up a whole new world of visual medicine. Therefore, the use of POC-LUS in the NICU should be encouraged.

References:

1- *Elsayed YN.* Lung Ultrasound as a New Technique for Diagnosis of Neonatal Respiratory Diseases. Neonatal Netw. *2018 Jul;37(4):224-232.*
2- *King A et al.* Tools to assess lung aeration in neonates with respiratory distress syndrome. Acta Paediatr. *2019 Sep 19. doi: 10.1111/apa.15028*
3- *Dilli D et al.* Comparison of three natural surfactants according to lung ultrasonography scores in newborns with respiratory distress syndrome. J Matern Fetal Neonatal Med. *2019 Jul 24:1-7.*
4- *Raimondi F et al.* Lung Ultrasound for Diagnosing Pneumothorax in the Critically Ill Neonate. J Pediatr. *2016 Aug;175:74-78.e1*

FT66

Comparison Of Human Metapneumo Virus Single Infection And Coinfection In Pediatric Patients In A Tertiary Hospital

Yasemin Derya Gülseren1, Fatma Esenkaya Taşbent1

[1] *Necmettin Erbakan Üniversitesi, Meram Tıp Fakültesi, Tıbbi Mikrobiyoloji Anabilim Dalı, Konya*

ÖZET

Amaç: Çocuklarda toplumdan kazanılmış akut sonulum yolu enfeksiyonuna neden olan Human Metapneumovirüs (HMPV) ilk kez 2001 yılında izole edilmiştir. Hafif üst solunum yolu enfeksiyonundan bronşolit ve pnömoniye kadar farklı spektrumda hastalık oluşturabilmektedir. İmmün sistemi baskılanmış hastalarda ciddi klinik tabloların oluşmasına ve bu hastaların hastaneye yatışına sebep olabilmektedir. Çalışmamızda tekli ve ko-enfeksiyon şeklinde tespit edilen HMPV bir yıllık sonuçları geriye yönelik tarandı ve enfeksiyonun epidemiyolojik özelliklerinin ortaya konması amaçlandı.

Yöntem: Çalışmaya Ocak 2018-Aralık 2018 tarihleri arasında, çocuk hastalıkları kliniklerinden moleküler laboratuvarına gönderilen 1506 nazofarengeal sürüntü örneğine ait test sonuçları dahil edildi. Nükleik asit izolasyonu EZ-1 virüs kit v.2.0 (Qiagen, ABD) ile yapıldı. Multipleks real time PZR (Fast Track Diagnostics, Junglister Luxembourg) kullanılarak etken tespit edildi.

Veri analizinde 22.0 IBM SPSS versiyonu kullanıldı. İstatistiksel önemlilik eşik düzeyi $p<0.05$ alındı. Tek etken ve ko-enfeksiyon şeklinde iki grup oluşturuldu. İki grubun cinsiyet, yaş ve örnek gönderilen bölüm yönünden karşılaştırması ki-kara analizi ile yapıldı.

Bulgular: Örneklerin 52'sinde HMPV tek etken şeklinde tespit edilirken, 63'ünde ko-enfeksiyon şeklinde saptanmıştır. Tek etken HMPV saptanan hastaların 23'ü (%44.2) kız, 29'u (%55.8) erkekdir. Yaş dağılımı olarak 17'si (%32.7) 1 yaş altında, 22'si (%42.3) 1-5 yaş arası, 13'ü (%25) 5 yaş üzerinde olup; hastaların 35'i (%67.3) poliklinik, 17'si (%32.7) servis hastasıydı. Ko-enfeksiyon saptanan hastaların 25'i (%39.7) kız, 38'i (%60,3) erkek; 26'sı (%41.3) 1 yaş altında, 27'si (%42.9) 1-5 yaş arası, 10'u (%15.9) 5 yaş üzerinde; 48'i (%76.2) poliklinik, 15'i (%23.8) servis hastasıydı. İki grubun cinsiyet ($p=0.6$), yaş ($p=0.4$) ve bölüm ($p=0.2$) yönünden karşılaştırmasında istatistiksel fark saptanmadı (Tablo 1).

Sonuç: HMPV çocukluk döneminde bronşiolit etkenleri arasında RSV'den sonra en sık görülen etkenler arasında yer almaktadır. Çalışmamızda da etken ekim-nisan arası bronşolit sezonu olarak adlandırılan dönemde tespit edilmiştir. Ocak, şubat ve mart ayları vaka sayılarının en fazla olduğu aylar olmuştur. Tekli etken ve ko-enfeksiyon arasında epidemiyolojik özellikleri açısından istatistiksel fark saptanmamıştır.

Anahtar Kelimeler: *Human Metapneumovirüs, multipleks PZR, çocuk, bronşiolit*

ABSTRACT

Aim: Human Metapneumovirus (HMPV) was first isolated in 2001. It may cause different spectrum of illnesses, ranging from mild upper respiratory tract infection to bronchiolitis and pneumonia. . It sometimes induces severe manifestations in infants and immunosuppresed persons . The aim of this study was to investigate the prevalence of HMPV in children with acute respiratory infection and to determine the epidemiological characteristics of HMPV infection, which was detected as single and co-infection.

Metod: In this study, the results of nasopharyngeal swab specimens aged between 0-18 years patients admitted to the Molecular Unit of the Medical Microbiology Laboratory of Meram Medical Faculty Hospital of Necmettin Erbakan University between January 2018 and December 2018 were analyzed retrospectively. EZ1 Virus Mini Kit V 2.0 (QIAGEN, Germany) was used for nucleic acid extraction Multiplex real-time [FTD 21, Junglinster, Luxemburg] polymerase chain reaction were used during the study period.
Findings: HMPV (9.1%) was detected in 115 patients (52 single and 63 co-infections). The majority of the cases were outpatients; 67.3% in single infection group and 76.2% in coinfection group. Infection was more common in male patients; 55.8% in single infection group and 60.3% in coinfection group. Cases 1 to 5 years of age were the majority in both groups: 42.3% for single infection and 42.9% for coinfection. There was no significant difference between the two groups in terms of age, gender and department. Cases most often recorded in February and March . The most common coinfection was detected by RSV.
Conclusion: HMPV is one of the most common causes of bronchiolitis in childhood that RSV is not detected cases. In this study HMPV was detected in the period called as broncholite season between October and April. No statistically significant difference was found between the single infection and co-infection group in terms of epidemiological characteristics.

KeyWords: *Human Metapneumovirüs, multiplex PCR, child, broncholite*

Introduction

Acute respiratory infections are among the most important causes of morbidity and mortality in children, especially in developing countries. Viruses are the etiologic agent pathogen in approximately 80 % of acute respiratory infections (1). Identifying the prevalence of the viruses that causing acute respiratory infection is essential to avoid antibiotics overuse (2)
In recent years, studies on respiratory viruses have gained importance and new viral agents such as HMPV (Human Metapneumovirus) have started to be identified, apart from the classical agents such as influenza and respiratory syncytial virus (RSV). HMPV was first identified in 2001. It is a member of the *Metapneumovirus* genus within the *Pneumo-viridae subfamily* of *Paramyxoviridae* family. It may cause different spectrum of illnesses, ranging from mild upper respiratory tract infection to bronchiolitis and pneumonia. It sometimes induces severe manifestations in infants and immunosuppresed persons (3).
However, the available information regarding its epidemiology is limited due to a deficient suspicion and its clinical manifestations resemble with other respitory viruses such as the influenza virus and the respiratory syncytial virus (2). The aim of this study was to investigate the prevalence of HMPV in children with acute respiratory infection and to determine the epidemiological characteristics of HMPV infection, which was detected as single and co-infection.

Patients and Methods

In this study, the results of 1506 nasopharyngeal swab specimens of patients admitted to the Molecular Unit of the Medical Microbiology Laboratory of Meram Medical Faculty Hospital of Necmettin Erbakan University between January 2018 and December 2018 were analyzed retrospectively. 249 results of adult patients were excluded from the study. Results of 1257 patients aged between 0-18 years were investigated. The children were either seen at outpatient departments or admitted to pediatric wards of the same hospital. EZ1 Virus Mini Kit V 2.0 (QIAGEN, Germany) was used for nucleic acid extraction .Multiplex real-time [FTD 21, Junglinster, Luxemburg] polymerase chain reaction were used during the study period.

22.0 IBM SPSS version was used for data analysis. Statistical significance threshold was taken as p <0.05. Two groups were formed as single agent and co-infection. The comparison of the two groups in terms of gender, age and sample section was performed by Chi-square analysis.

Results

HMPV (9.1%) was detected in 115 patients (52 single and 63 co-infections). The majority of the cases were outpatients; 67.3% in single infection group and 76.2% in coinfection group. Infection was more common in male patients; 55.8% in single infection group and 60.3% in coinfection group. Cases 1 to 5 years of age were the majority in both groups: 42.3% for single infection and 42.9% for coinfection. There was no significant difference between the two groups in terms of age, gender and department (Table 1). Cases most often recorded in February and March (Figure 1). The most common coinfection was detected by RSV (Figure 2).

Table 1: Distribution of demographic data in single infection and co-infection

	HMPV single infection (n=52)	HMPV coinfection (n=63)	P
Sex			0.6
female	23(%44.2)	25 (%39.7)	
male	29(%55.8)	38(%60.3)	
Age			0.4
<1 age	17(%32.7)	26(%41.3)	
1-5 age	22(%42.3)	27(%42.9)	
>5 age	13(%25)	10(%15.9)	
department			0.2
outpatient	35(%67.3)	48(%76.2)	
inpatient	17(%32.7)	15(%23.8)	

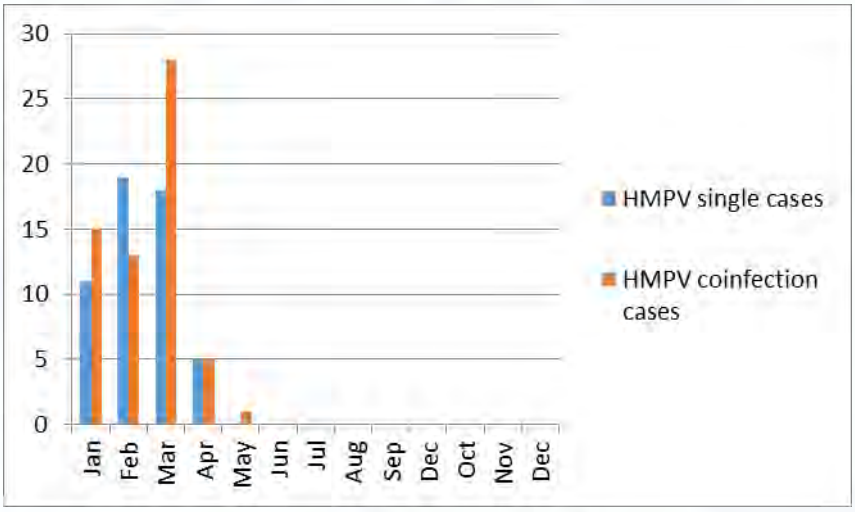


Figure 1: Monthly distribution of cases

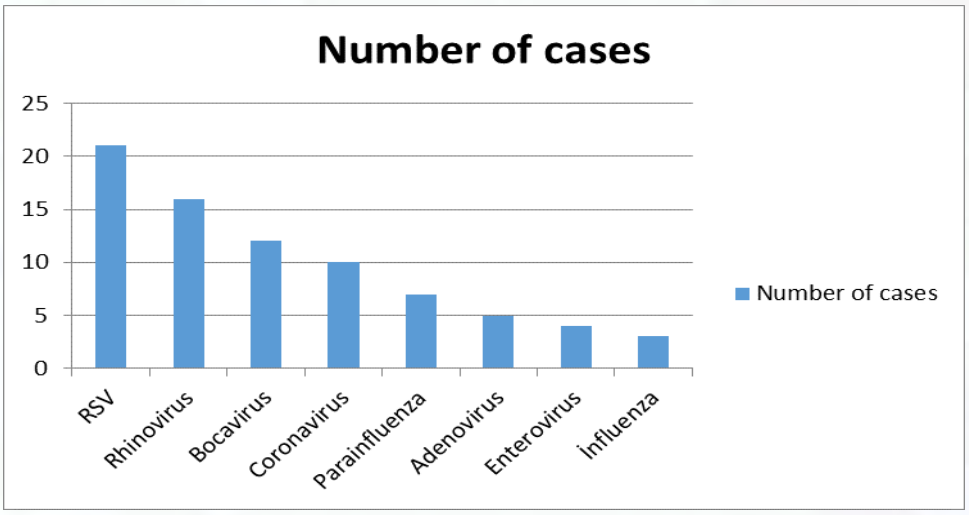


Figure 2: Distribution of viral agents in coinfection cases

Discussion

HMPV is one of the viral agent that should be considered when RSV is not detected in children younger than 2 years with acute bronchiolitis. There are studies reporting that the prevalence of agents varies between 6% and 16% in the world. In our country, rates ranging from 10.8% to 13% have been reported (4) .One year data were evaluated in this study and the rate was 9.1%.

It has been described in Western countries that the prevalence of HMPV increases during the late winter months and the beginning of the spring. However, cities such as Hong Kong reported the virus during late spring and summer months (5). In countries with a moderate climate HMPV has a seasonal occurrence overlapping with RSV circulation (6). Similarly in this study, the majority of cases were detected during the RSV season.

Recently, HMPV co-infections with other respiratory viruses such as RSV, parainfluenza, influenza virus and adenovirus have been reported. Differences in clinical signs between individuals co and mono-infected with HMPV have been reported, but the relation is obscure (7).Several studies have found a coinfection rate of < 10%. However, Greesill et al. reported that 70% of RSV –infected children who required intensive care were coinfected with HMPV (8). In present study coinfection rate has been detected 5% (63 cases).

It was reported that majority of dual infections occur with RSV and dual infection (HMPV-RSV) increased clinical severity (9). Semple et al reported that dual infection with HMPV and RSV confers a 10-fold increase in relative risk of admission to a pediatric intensive-care unit for mechanical ventilation (10). In another study, compared clinical features of HMPV single infection and HMPV coinfeinfection, only the duration of the hospitalization was different, being longer in the coinfections group. In this study Rhinovirus and Adenovirus were most commonly detected in coinfections (11). In this study, RSV was the most common in coinfections. However, since the outpatient patients were also included in our patient group, the clinical course could not be monitored.

Seroprevalence studies show that HMPV infection is more common especially in children aged 6 months to 2 years. It has been suggested that HMPV infection affects particulary older children compared to RSV infections (6). Garcı ´a-Garcı ´a et al reported that the mean age of HMPV single infection as 14.37 months and in the co-infection group as 12.9 months; no difference was found between the two groups in terms of mean age (11). In our study, children between the ages of 1 and 5 were the majority of cases in both single infection and co-infection groups. In this study also no significant difference was found between the two groups in terms of age.

It has been suggested that HMPV infections affect male more (12). In present study, 55.8% in the single infection group and 60.3% in the co-infection group were male patients. In a study held in Croatia showed not only HMPV infections affected more often male than female, but also males were generally more often hospitalized due to acute respiratory infections (6).
Incidence of hMPV infection can substantially vary from year to year. In a study a high incidence of hMPV infection (25.3%) was observed during the 2005–2006 winter-spring season, whereas a much lower rate of infection (4.7%) during the following season was found (13). Another study indicates that HMPV infections show biennial outbreak pattern characterized by alternation of winter and spring (6). In this study virus was monitored throughout the year. However, in order to establish the prevalence correctly, the virus should be monitored in successive years.
Consistent with previous epidemiological data, HMPV was detected during winter and early spring, which was described as RSV season, and it was found that males were more affected than females. In comparison to other studies, a relatively lower rate was found. Its clinical manifestations, seasonal characteristics and affected age group resemble RSV. Nowadays, in cases that RSV is not detected, HMPV should be considered as a viral factor.

References

1. *Appak Ö, Duman M, Belet N, Sayıner A.A. Viral Respiratory Infections Diagnosed by Multiplex PCR in Pediatric Patients. J Med Virol 2019 May;91 (5): 731-737*
2. *Albogami SS, Alotaibi MR, Alsahli SA, et al. Seasonal variations of respiratory viruses detected from children with respiratory tract infections in Riyadh, Saudi Arabia. J Infect Public Health. 2018 Mar - Apr;11(2):183-186.*
3. *A.Dürdal Us, Bozkaya E.Viral solunum yolu enfeksiyonları. A.Dürdal Us, Koray Ergünay eds.Moleküler,Klinik ve Tanısa Viroloji, Ankara, Bilimsel Tıp Yayınevi 2012 :196-98*
4. *Gökmen AA, Çiçek C, Saz EU, et al. Detection of Human Metapneumovirus Prevalence in Pediatric Patients with Lower Respiratory Tract Infections. Mikrobiyol Bul 2012; 46(4): 614-623*
5. *Del Valle-Mendoza J, Orellana-Peralta F, Del Valle LJ, et al. Detection of human Metapneumovirus infection in children under 18 years old hospitalized in Lima-Peru. PeerJ. 2019 Jul 25;7:e7266.*
6. *Ljubin-Sternak S, Mlinaric-Galinovic G, Buntic AM, et al. Metapneumovirus Human of Occurrence Seasonal Croatia in Infections. Pediatr Infect Dis J 2014;33:165–167)*
7. *Kaida A, Kubo H, Goto K, et al.Co-Infection of Human Metapneumovirus with Adenovirus or Respiratory Syncytial Virus among Children in Japan. Microbiol. Immunol 2007; 51(7):679-683*
8. *Greensill J, McNamara PS,Dove W,et al.Human metapneumovirus in severe respiratory syncytial virus bronchiolitis. Emerg. Infect. Dis.2003; 9:372–375*
9. *Parlakay AÖ, Kara A.Yeni solunum yolu virüsleri. Çocuk Sagligi ve Hastahklan Dergisi 2010; 53: 59-65*
10. *Semple MG, Cowell A, Dove W, et al.Dual İnfection of Infants by Human Metapneumovirus and Human Respiratory Syncytial Virus is Strongly Associated with Severe Bronchioliti.J Infect Dis 2005 Feb 1;191(3):382-6*
11. *Garcı ´a-Garcı ´a ML, Calvo C, Rey C, et al. Human metapnuemovirus infections in hospitalized children and comparison with other respiratory viruses. 2005-2014 prospective study. PloS One 2017 Mar 16;12(3):e0173504*
12. *Gökmen AA, Çicek C. Newly discovered old respiratory virus: Human metapneumovirus. Ege Journal of Medicine 2014;53(2):112-118*
13. *Caracciolo S, Minini C, Colombrita D, et al. Human Metapneumovirus Infection in Young Children Hospitalized With Acute Respiratory Tract Disease.Pediatr Infect Dis J 2008;27: 406–412*

FT67

Management Of Tracheal Stenosis After Accidental Corrosive Acid Ingestion

Hıdır Esme, Hasan Doğan

Department of Thoracic Surgery, Konya Training and Research Hospital, Health Sciences University, Konya, Turkey

Department of Thoracic Surgery, Health Sciences University,

Konya Training and Research Hospital, Konya, Turkey.

Abstract

Although corrosive injury of the digestive tract is a well-known clinical entity, damages of the airway, a critically life-threatening condition, has not been clearly documented. Tracheal stenosis is very rare associated with corrosive acid ingestion. We report the case of a 4-year-old girl child who presented to the emergency department three week after accidentally drinking an acidic cleaning agent stored in unlabeled bottle. Rigid bronchoscopy was carried out to observe the stenosis. She was treated by serial dilation, repair of tracheal laceration, and placement of a temporary polyurethane-coated nitinol stent. Careful and accurate stent placement may provide significant and life-saving airway improvement as observed in the presenting pediatric case.

Key words: *Corrosive injury, tracheal stenosis, management*

Introduction

Corrosive acid poisoning commonly results in chemical injuries to the upper gastrointestinal tract. Corrosive mucosal erosion of the larynx and trachea may occur if the patient aspirates acid. Although corrosive injury of the digestive tract is an a well-known clinical entity, such damages of the airway, a critically life-threatening condition, has not been clearly documented (1). Tracheal stenosis is very rare associated with corrosive acid ingestion. Caustic ingestion results in thrombosis of small vessels with inflammation, the formation of granulation tissue with subsequent collagen deposition and fibrosis, thus stricture formation (2).

We report an incident of upper respiratory system corrosion after aspiration of the caustic acid agent. The patient survived the severe burns of the tracheal tract and the tracheal stenosis by dilation procedures and surgical repair of the iatrogenic tracheal laceration and treatment of the tracheal stenosis with a temporary polyurethane-coated nitinol stent. These impressive clinical features are presented and the management of caustic respiratory injury is discussed.

Case report

A 4-year-old girl child presented to the emergency department three weeks after accidentally drinking an acidic cleaning agent stored in an unlabeled bottle. The day of the incident the patient presented to an outside hospital where she was admitted for an upper endoscopy of the esophagus as well as laryngoscopy which were both found to be negative for acute injury. An initial chest X-ray taken the day of the incident was also found to be normal. After two days of observation the patient was discharged.

When patient admitted to our department, she continued to have a sore throat and upper chest pain with associated shortness of breath with inspiratory stridor. The patient denied fever, chills, weakness, bloody stools, or upper and lower gastrointestinal upset. On presentation, the patient vital signs were as follows: blood pressure of 98/57mmHg, pulse of 121, respiratory

rate of 29, temperature of 36.7∘C and oxygen saturation of 90% on room air. Her physical exam was significant for pharyngeal and uvula erythema and edema without ulcers. Her lung exam demonstrated slightly diminished breathe sounds bilaterally with noted increased work of breathing. His abdomen including the epigastric region was soft without rebound or guarding. The remainder of his exam was normal.

An anterior chest X-ray was taken with showed clear lungs fields without effusion, infiltrate or aspiration, normal mediastinum, and no lymphadenopathy. The computed tomographic scan was significant for tracheal stenos (Figure 1). Rigid bronchoscopy was carried out to observe the stenosis. After inspection and measurement, serial dilation was done with successively larger bronchoscopes. The patient recovered well after bronchoscopy and she was discharged. After 20 days, tracheal stenosis repeated. At that time, rigid bronchoscopy had revealed more than 70% luminal narrowing. Dilatation with rigid bronchoscopy was performed. Postoperative bilateral pneumothorax, subcutaneous emphysema developed (Figure 2). This time bronchoscopy revealed partial tracheal laceration in thoracic part of trachea. The tracheal injury consisted of a 2 cm tear extending from approximately 3 cm distal to the vocal cords and ending 1 cm proximal to the carina. Tracheal perforation was repaired with right thoracotomy. Bilateral chest drains were inserted and kept for 7 days. The inspiratory stridor continued in the patient. A 10-mm x 4-cm nitinol fully covered stent was placed in the trachea to just above the carina (Figure 3). The patient was discharged ten days later with good chest expansion and has been doing well for more two months without any subsequent problems.

Discussion

The accidental ingestion of easily available corrosive substances is a significant social problem. Although it rarely causes mortality, its morbidity lasts a lifetime. Corrosive injury of the upper gastrointestinal tract is a common clinical entity. Airway aspiration, instead of ingestion of the caustic substance, as in the presenting case is another mechanism of pulmonary injury, which causes direct burning of the respiratory system (1). Airway bleeding and obstruction with tissue slough are the early clinical clue of caustic aspiration. A key to alkaline injury is the fact that it causes liquefactive tissue necrosis leading to dissolution of cellular components and saponification of fatty tissues resulting in a liquid-gel amalgamation of dissolved cells and connective tissue. Ingestion of acidic media results in immediate denaturing of proteins which limits proteolysis of cellular constituents and leads to localized eschar formation which limits further tissue damage (3). Our patient presented to our department three week after accidentally drinking an acidic cleaning agent. We have linked the late manifestation of respiratory symptoms to the ingestion of corrosive acid agents.

Tracheal stenosis is uncommon in the pediatric age group. It may be due to congenital atresia, tracheomalacia or acquired stenosis. Acquired stenosis is mostly due to prolonged endotracheal intubation, faulty tracheostomy or external trauma (4). Tracheal stenosis is very rare associated with corrosive ingestion. Tracheal stenosis produces symptoms of dyspnea, stridor, and obstructive pneumonia and is frequently life-threatening, with patients having impending suffocation. Bronchoscopic management is the first step in providing a diagnosis, stabilizing the obstructed airway, and evaluating resectability. Tracheal stenosis is dilated with esophageal bougies, the bronchoscope, or appropriately sized angioplasty balloons. After inspection and measurement, serial dilation is done with successively larger bronchoscopes. Steady rotating pressure with the blunt-tipped Jackson bronchoscopes is provided passage with minimal mucosal trauma and risk of perforation. The procedure is repeated with the next larger bronchoscope until an adequate airway caliber had been established. If the lesion is too stenotic to accept the 3.5-mm Jackson bronchoscope, then esophageal bougies are used to

enlarge the airway enough to allow bronchoscopic dilation. Pneumatic or hydrostatic balloon dilation with angioplasty balloons are used whenever it is necessary to dilate larger than the 8 to 9 mm possible with bronchoscopic dilation (5).
Recurrent stenosis is an indication for endoluminal stenting or surgery. In our case, tracheal stenosis after bronchoscopic dilation repeated. Re-dilation with rigid bronchoscopy was performed. Postoperative bilateral pneumothorax, subcutaneous emphysema developed. This time bronchoscopy revealed partial tracheal laceration in thoracic part of trachea. Tracheal laceration was repaired with right thoracotomy. The inspiratory stridor continued in the patient. A nitinol fully covered stent was placed in the trachea to just above the carina.
With advancement in the field of thoracic medicine and development of technology, large numbers of patients are now being treated with tracheal stents. Advancement in stent design and development of both covered and uncovered expandable metallic stents have broadened both indications and durability (6). Endoluminal stent placement offers a rapid and effective means of opening up and maintaining narrowed airways, and result in excellent relief of symptoms and improvement in pulmonary function. However their use in the pediatric age group is uncommon due to the high incidence of complications, difficult removal and the unclear long-term effect on tracheal growth (7). Mostafa and Dessouky reported that endoluminal management of 13 pediatric tracheal stenosis and stenting is a viable option with an acceptable complication rate and minimal effect on tracheal and general growth. Many other studies had an acceptable complication rate with no stent related mortalities (8, 9).

Conclusion

It should be noted that ingestion of corrosive agents may cause damage to the upper respiratory tract. Admission for bronchoscopy and esophagoscopy to assess the extent of the injury is warranted in most cases. Tracheal stenosis is the major late complication of caustic airway injury. Careful and accurate stent placement may provide significant and life-saving airway improvement as observed in the presenting case.

References

1- *Huang CC, Wu HS, Lee YC. Extensive tracheobronchitis and lung perforation after alkaline caustic aspiration. Ann Thorac Surg. 2010 May;89(5):1670-3.*
2- *Represas C, Fernandez A, Leiro V, Botana M, Rodriguez C, at al. Caustic tracheobronchitis. J Bronchology Interv Pulmonol. 2006; 13:156-8.*
3- *Jaillard S, Nseir S, Métois D, Marquette CH, Darras J, Porte H, Wurtz A. Extensive corrosive injuries of the upper airways and gastrointestinal tract. J Thorac Cardiovasc Surg. 2002 Jan;123(1):186-8.*
4- *Mostafa BE, Dessouky OY. The role of endoluminal self-expanding stents in the management of pediatric tracheal stenosis. Int J Pediatr Otorhinolaryngol. 2008 Sep;72(9):1371-6.*
5- *Stephens KE Jr, Wood DE. Bronchoscopic management of central airway obstruction. J Thorac Cardiovasc Surg. 2000 Feb;119(2):289-96.*
6- *Bansal S, Dhingra S, Ghai B, Gupta AK. Metallic stents for proximal tracheal stenosis: is it worth the risk? Case Rep Otolaryngol. 2012;2012:1-3.*
7- *Kumar P, Bush A.P, Ladas G.P, Goldstraw P. Tracheobronchial obstruction in children: experience with endoscopic airway stenting, Ann. Thorac. Surg. 75 (2003) 1579—1586.*
8- *Arda IS, Boyvat F, Otgün I, Güney LH, Hiçsönmez A. Preliminary experience with tracheal stent application in children with tracheal stenosis. Eur J Pediatr Surg. 2007 Aug;17(4):241-3.*
9- *Cabezalí Barbancho D, Pacheco Sánchez JA, López Díaz M, Tejedor Sánchez R, Benavent Gordo M. The role of tracheobronchial stenting in the management of pediatric airway obstruction. Cir Pediatr. 2007 Jul;20(3):175-9.*

Figure 1: The computed tomographic scan showing tracheal stenosis as the result of acid ingestion.
Figure 2: Anterior-posterior chest X-ray demonstrating bilateral pneumothorax, subcutaneous emphysema after bronchoscopic dilation.
Figure 3: A 10-mm x 4-cm nitinol fully covered stent was placed in the trachea to just above the carina.

FT68

A Patient With Congenital Bronchial Diverticula Localized İn The Left Main Bronchus And Paraaortic Mediastinal Bronchogenic Cyst

Hıdır Esme, Atilla Can

Department of Thoracic surgery, Konya training and research hospital, Health Sciences University

Abstract

Congenital diverticulosis of the left main bronchus is extremely rare in the adult. Bronchial diverticula could act as a reservoir for bronchial secretions and theoretically predispose to repeated respiratory infections. We reported a diverticulum originating from the left main bronchus with recurrent bronchopneumonia and whistling since 15 years ago. Additionally, our case had a paraaortic mediastinal bronchogenic cyst. Physical examination demonstrated whistling in expiratory phase which appeared when he was lying on his back or on his left side. Flexible bronchoscopy showed a round-shaped lumen of the left main bronchus and bubbling from slits or indentations of the bronchial mucosa in the left main bronchus. Because our patient complained of whistling and past history of recurrent bronchopneumonia infection due to bronchial diverticulum, operation was done. To the best of our knowledge, there has been no case of congenital bronchial diverticula localized in the left main bronchus associated with a paraaortic mediastinal bronchogenic cyst in the medical literature.

Key words: *bronchial diverticula, bronchogenic cyst, whistling*

INTRODUCTION

Diverticula of the main bronchus is rare conditions that were first described by Rocitansky in 1846.[1] Diverticula of the main bronchus are usually asymptomatic and are not usually a pathologic condition; however, in some cases, therapeutic intervention may be considered. Bronchogenic cysts are congenital lesions derived from an abnormal budding of the embryonic foregut. The mediastinum or lung location of bronchogenic cysts are related to the time of separation from the tracheobronchial tree.[2] We encountered the case of an enlarged subcarinal air cyst accompanied by bronchial diverticula and paraaortic mediastinal bronchogenic cyst. This is the first case wherein diagnosis and treatment of left main bronchial diverticula with the paraaortic mediastinal bronchogenic cyst are reported.

CASE REPORT

The patient was a 20-year-old male. He had recurrent bronchopneumonia and whistling since 15 years ago. Whistling had occasionally occurred when he was in the recumbent position during sleep at night. Physical examination demonstrated wheeze in expiratory phase which appeared when he was lying on his back or on his left side. The patient did not have any smoking history. Chest CT and MRI exhibited an air cyst (size, 25 mm) connected to the lumen of the left main bronchus and paraaortic mediastinal bronchogenic cyst (Figure 1 and 2). Flexible bronchoscopy showed a round-shaped lumen of the left main bronchus and bubbling from slits or indentations of the bronchial mucosa in the left main bronchus. The resection of left main diverticulum with right thoracotomy was undergone. Histologically it was characterized by a lining wall of stratified columnar ciliated epithelium and the presence of smooth muscle and cartilage in the wall. Fifteen days later, the paraaortic mediastinal bronchogenic cyst was completely resected. Histologic examination showed a cyst filled with

viscid and turbid fluid formed by ciliated columnar epithelial, hyaline cartilage and smooth muscle. The postoperative course was uneventful and no recurrence has been observed until now.

DISCUSSION

Diverticula of the trachea and bronchus are usually classified into two types, congenital and acquired. Congenital diverticula are thought to correspond to a rudimentary accessory bronchus that is usually located in the posteromedial border of the right main bronchus or the posterolateral border of the lower trachea. Therefore, most reported cogenital diverticula have been located in these sites.[3] In our young patient, bronchial diverticulum was in the left main bronchus and associated with recurrent infections of the lower airways, which were more severe in the left lung. The acquired type is thought to be associated with some inherent weakness in the tracheal or bronchial walls. Previous studies have demonstrated that acquired bronchial diverticula have a significant association with chronic obstructive pulmonary disease and smoking-related lung disease.[4]

Mediastinal air cysts due to bronchogenic diverticulum are extremely rare, and their differential diagnosis may include tracheocele (also known as paratracheal air cyst or tracheal diverticulum), bronchogenic cyst, and bronchopulmonary foregut duplication cyst.[5]

A bronchial diverticulum is usually asymptomatic. If it becomes a large cavitary lesion filled with secretions, it can cause chronic cough, recurrent respiratory tract infections, hemoptysis, dyspnea or stridor.[6] Bronchial diverticula could act as a reservoir for bronchial secretions and theoretically predispose to repeated respiratory infections. In our case, whistling was audible and recorded only on the left side of the sternum. Flexible bronchoscopy demonstrated the airflow through a small orifice. From this observation, it was concluded that this diverticulum caused the whistling.

Resection of bronchial diverticula is not performed in most reported cases because this condition is generally symptom-free. When infection occurs repeatedly in such diverticula, however, resection should be done.[3] Because our patient complained of whistling and past history of recurrent bronchopneumonia infection due to bronchial diverticulum, operation was done.

The mediastinum or lung location of bronchogenic cysts is related to the time of separation from the tracheobronchial tree. The bronchogenic cysts are usually asymptomatic and often diagnosed incidentally during routine chest roentgenogram for other reasons. The treatment options depend on the patients' age and symptoms at presentation.[2] If in young patients, the surgical resection of cysts is the only treatment of choice, in asymptomatic adult patients remains controversial owing to the unpredictability complications or degeneration.

In summary, we reported a diverticulum originating from the left main bronchus with recurrent bronchopneumonia and whistling since 15 years ago. When a patient displays signs of whistling, we have to consider bronchial lesions, such as bronchial diverticulum. When infection occurs repeatedly in such diverticula, resection should be done. To the best of our knowledge, there has been no case of congenital bronchial diverticula localized in the left main bronchus associated with a paraaortic mediastinal bronchogenic cyst in the medical literature.

References

1- *Von Rokitansky K. Handbuch der pathologischen anatomie. Vol. 3. Vienna: Braumüller & Seidel, 1984:6-7, 11.*
2- *Umberto Caterino, Dario Amore, Marcellino Cicalese, Carlo Curcio. Anterior bronchogenic mediastinal cyst as priority procedure for robotic thoracic surgery J Thorac Dis 2017;9(8):E674-E676.*
3- *Satoshi Oizumi, Takashi Ishida, Masafumi Kamachi, Toru Takahashi, Shigeaki Ogura, Mitsuru manakata, and Yoshikazu Kawakami. Congenitak bronchial diverticulum. Journal of Bronchology 1999: 6; 101-3.*
4- *Sverzellati N, Ingegnoli A, Calabro E et al. Bronchial diverticula in smokers on thin- section CT. Eur J Radiol 2010; 20: 88-94.*
5- *Hideo Ichimura, Yuichiro Ozawa, Masanari Shiigai, Seiji Shiotani, Kazunori Kikuchi and Yukio Sato. Enlarged mediastinal air cyst in a patient with bronchial diverticula localized in the left main bronchus: a case report with surgical and bronchoscopic findings Surgical Case Reports 2017:3;1-4.*
6- *Aydin Kurt, Asli Tanrivermis Sayit, Ali Ipek, Idil Gunes Tatar. A Multi Detector Computed Tomography Survey of Tracheal Diverticulum. Eurasian J Med 2013; 45: 145-8*

Figure legend

Figure 1: Computed tomography showing a connection between the subcarinal mediastinal air cyst and the left main bronchus.

Figure 2: Magnetic resonance imagine in the frontal plane showing a subcarinal mediastinal air cyst and the paraaortic mediastinal bronchogenic cyst.

Some Routine Laboratory Measurements And Antibiotic Choice As Potential Predictors of Mortality in The Pediatric İntensive Care Unit: A Cross-Sectional Study

Feyza İnceköy Girgin

Marmara University School of Medicine, Department of Pediatrics, Division of Pediatric

Abstract

Aim: White blood cell (WBC), platelet (PLT) count, and CRP are some basic parameters to follow the outcome of patients in intensive care units. This study aimed to evaluate the differences in the outcome of patients related to some routine laboratory measurements and antibiotic preferences.

Methods: The participants of the study consisted of 179 pediatric ICU inpatients with gram-positive culture results. Hospital records covering the years 2016 to 2019 were reviewed. Other than the mortality status, data were collected on age, sex, the presence of fever, culture results, antibiotic preferences, and laboratory parameters such as WBC, PLT, and CRP levels.

Results: The median (IQR) age of the patients was 33.00 (8.00-66.00) months; 109 (60.89%) were boys, while 70 (39.11%) were girls. Of the patients, 90 (50.3%) had positive culture results, 59 (33%) received vancomycin, 31 (17.3%) received teicoplanin, and 34 (18.9%) had a fatal outcome. The cultured organisms were as follows: Staph. spp. (n=56, 31.3%), methicillin-resistant Staph. epidermidis (n=81, 45.3%), Staph. aureus (n=22, 12.3%), Staph. epidermidis (n=15, 8.4%), and methicillin-resistant Staph. aureus (n=5, 2.8%). WBC and PLT levels were higher in survived patients than the deceased ones ($p=0.001$ and $p<0.001$, respectively. There was no significant association of mortality and any of the studied categorical variables ($p>0.05$).

Conclusion: CRP and PLT are useful indicators for the diagnosis of serious bacterial infections and the prediction of the clinical outcome. There is no difference between using vancomycin or teicoplanin concerning mortality in the ICU.

Keywords: *WBC, platelet, CRP, pediatric intensive care unit, antibiotic therapy, Methicillin-resistant Staphylococcus aureus*

Introduction

Background/rationale

White blood cell (WBC) count is included in many scoring systems. For example, in an intensive care unit (ICU), low WBC in patients with sepsis suggests a bad prognosis (1). Also, thrombocytopenia is frequently seen in patients admitted to the ICU (2). Although many factors, including thrombin-mediated platelet activation, and complement activation may contribute low platelets (PLT), in the ICU, thrombocytopenia commonly indicates severe organ system problems and physiologic decompensation rather than primary hematologic issues (2).

On the other hand, CRP is a protein associated with nonspecific inflammation; it is produced in the liver and regulated by plasma interleukin-6. In cases of infection or damage to any organ system, the concentration of CRP will increase substantially (3). It was suggested that the most sensitive indicator for the diagnosis of neonatal sepsis in the pediatric intensive care unit is CRP (4).

Staphylococcus aureus causes life-threatening infection and commonly accompanies the clinical course of patients requiring intensive care. Staph. aureus infection in the ICU

frequently reveals sepsis, ventilator-associated pneumonia, and infection of surgical sites or inserted medical devices (5).
Vancomycin and teicoplanin are effective antibiotics, especially used in the treatment of gram-positive infections; they are particularly useful in cases caused by methicillin-resistant Staphylococcus aureus (MRSA). Some advantages of the two antibiotics have been suggested, such as teicoplanin being less nephrotoxic than vancomycin (6).

Objectives

Changes in WCC, PLT, and CRP levels in patients in the intensive care unit were measured in this study to explore their relationship with the clinical outcome and mortality of patients in the ICU.

Methods

Study design

This is a retrospective cross-sectional study investigating hospital data. Study reporting was done per the STROBE guidelines (7).

Setting

The study was conducted at Marmara University School of Medicine, Department of Pediatrics, Division of Pediatric Critical Care. Patient data from 01.01.2016 to 01.01.2019 was retrieved from the hospital's repository.

Participants

Participants of the study consisted of pediatric ICU inpatients. During the study period, a total of 915 patients were admitted to the ICU. Of these, 180 with positive culture results were included in the study. One patient with some missing laboratory values was excluded (Figure 1).

Figure 1: Study flow diagram.

Variables

Data were collected from the hospital's electronic patient record system. The primary outcome variable of the study was mortality status (survived vs. deceased). Also, information for white blood cell count (WBC, microliter), platelet count (PLT, microliter), c-reactive protein levels (CRP, mg/L), presence of fever, culture source (blood vs. catheter), pathogen grown, and the type of antibiotics used were recorded.

As per the protocol of the ICU during the study period, patients with gram-positive culture results were clinically evaluated for fever, perfusion problems, pulses, capillary circulation time, and laboratory variables such as the trends in WBC and CRP, which resulted in the decision to implement antibiotics or not.

As a routine, venous blood was taken from all the subjects at the time of admission, placed into a vacuum tube containing anticoagulant, and then sent to the laboratory of Marmara University Hospital for the detection of WBC, PLT, and CRP levels. WBC and PLT values were analyzed by the LH780 automated hematology analyzer (Beckman Coulter, Brea, CA) using the volume- conductivity-light scatter technology. CRP level was measured by immunoturbidimetry. The analysis was performed with a Beckman Coulter AU5800 automatic biochemical analyzer (Beckman Coulter, Inc., Brea, CA, USA). The standard and reagents were provided by the manufacturer. All laboratory analyses were carried out following the manufacturer's instructions.

The cultures of catheters were done by the method described by Cleri et al. (8). Each catheter segment was taken to a 90-mm blood agar plate and rolled on the surface at least four times. Later, the catheter lumen was flushed with 2 ml of tryptic soy broth (TSB), which was diluted 10-fold, and 0.1 ml of each dilution was spotted onto horse blood agar plates. Finally, the whole segment was absorbed in 5 ml of TSB. Colonies were counted after 48-72 h of incubation. Coagulase-negative staphylococci were differentiated by the method described by Kloos and Smith (9). In the case of growth, antibiotic susceptibility work was performed with the disk diffusion method.

Blood cultures were collected in BacT/Alert (Biomérieux, Missouri, USA) aerobic and anaerobic blood culture bottles and placed in the automated microbial detection system. Cultures positive for coagulase-negative Staphylococcus, Propionibacterium, Micrococcus, Bacillus, and Corynebacterium, with detection in a single blood culture bottle and without clinical relevance, were considered as contaminants and were excluded.

Fever was defined as axillary temperature >38.5 ˚C lasting for more than one week.

Sample size

The sample size calculation was based on the main outcome variable, "mortality status." To detect a difference in the mortality ratio between 3 antibiotic status (No antibiotic/Vancomycin/Teicoplanin) using the Chi-square test with an effect size of 0.3 (medium), degree of freedom of 2, alpha error of 5%, and a power of 95%, a sample size of 172 cases are required (10).

Statistical methods

The data were analyzed with the Statistical Package for the Social Sciences (SPSS) version 25.0 software (SPSS Inc., Chicago, IL, USA). The Kolmogorov–Smirnov test was performed to test if the numerical variables were normally distributed. The results were presented as frequencies, percentages, mean (±SD), median, and interquartile range (IQR). The Mann-Whitney U and Kruskal-Wallis tests were used to compare numerical variables, and the Chi-Square test was used for categorical variables. A p-value of <0.05 was considered statistically significant.

Results

Participants

Results for 179 participants were analyzed. The median (IQR) age of the patients was 33.00 (8.00-66.00) months. Of the patients, 109 (60.89%) were boys, while 70 (39.11%) were girls. Although the median age of the girls was slightly higher (37.50 months, min-max: 1-228 vs. 26.00 months, min-max: 2-201), this difference was not significant (Z=0.815, p=0.415).

Descriptive data

Of the patients, 90 (50.3%) had positive culture results, 59 (33%) received vancomycin, 31 (17.3%) received teicoplanin, and 34 (18.9%) had a fatal outcome.

The cultured organisms in decreasing order were as follows: Staph. spp. (n=56, 31.3%), methicillin-resistant Staph. epidermidis (n=81, 45.3%), Staph. aureus (n=22, 12.3%), Staph. epidermidis (n=15, 8.4%), and methicillin-resistant Staph. aureus (n=5, 2.8%).

Outcome data

There were no gender or fever differences concerning WBC, PLT, and CRP levels (Table 1). However, although there were no differences regarding WBC and PLT, patients with infection had higher CRP levels compared to those without infection (Table 1). On the other hand, WBC and PLT levels were higher in survived patients than the deceased ones (Table 1).

Table 1: Mean differences in WBC, PLT, and CRP levels compared to sex, fever, infection, and outcome groups

Variable	Group	Median (IQR)	Z*; p
WBC (/ml)	Male (n=109)	12900 (8900-17300)	Z=0.548, p=0.583
	Female (n=70)	11300 (7600-16700)	
	Culture + (n=90)	11700 (8300-17000)	Z=0.589, p=0.556
	Culture – (n=89)	12000 (9100-17300)	
PLT (/ml)	Male (n=109)	235000 (140000-378000)	Z=0.046, p=0.963
	Female (n=70)	233500 (169000-322000)	
	Culture + (n=90)	235000 (106000-3710000	Z=0.371, p=0.711
	Culture – (n=89)	233000 (158000-3510000	
CRP (mg/L)	Male (n=109)	23.3 (8-74)	Z=1.034, p=0.301
	Female (n=70)	39 (8-111)	
	Culture + (n=90)	43.5 (9.72-133)	Z=2.944, **p=0.003**
	Culture – (n=89)	16 (7-56)	
WBC (/ml)	Fever + (n=66)	12250 (8900-16100)	Z=0.115, p=0.908
	Fever – (n=113)	11700 (8300-17500)	
	Died (n=34)	7700 (5700-13500)	Z=3.460, **p=0.001**
	Survived (n=145)	12850 (9550-17350)	

PLT (/ml)	Fever + (n=66)	241500 (123000-395000)	Z=0.126, p=0.900
	Fever – (n=113)	233000 (167000-340000)	
	Died (n=34)	161500 (56000-232000)	Z=4.256, **p<0.001**
	Survived (n=145)	260000 (173000-394000)	
CRP (mg/L)	Fever + (n=66)	44.95 (9-97)	Z=1.653, p=0.098
	Fever – (n=113)	23 (7.28-65.7)	
	Dead (n=34)	32.1 (8-72)	Z=0.126, p=0.900
	Survived (n=145)	25.4 (8-79)	

*Mann-Whitney U test

There were no significant differences in WBC and PLT by the type of antibiotic given and the culture results. However, there were statistically significant differences in the CRP levels compared to the kind of used antibiotics; patients treated with teicoplanin had higher CRP levels. Also, the CRP levels were significantly different concerning the culture results; patients with Staph. aureus and methicillin-resistant Staph. aureus grown in the blood cultures had higher CRP levels (Table 2).

Table 2: Mean differences in WBC, PLT, and CRP levels compared to the administered antibiotics and blood culture groups

Variable	**Group**	**Median (IQR)**	**H*, p**
WBC (/ml)	No antibiotic	12000 (9100-17300)	H=1.807, p=0.405
	Vancomycin	10800 (6900-16300)	
	Teicoplanin	13200 (8500-19200)	
PLT (/ml)	No antibiotic	233000 (158000-351000)	H=0.503, p=0.778
	Vancomycin	240000 (158000-378000)	
	Teicoplanin	234000 (98000-371000)	
CRP (mg/L)	No antibiotic	16 (7-56)	H=8.976, **p=0.011**
	Vancomycin	34 (9-111)	
	Teicoplanin	48 (12-136)	
WBC (/ml)	Staph. epidermidis	10400 (6100-12600)	H=7.951, p=0.093
	Staph. aureus	13400 (10300-25800)	

	Methicillin resistant Staph. epidermidis	12900 (8900-17500)	
	Methicillin resistant Staph. aureus	12200 (8600-12900)	
	Staph. spp.	10700 (6650-15100)	
PLT (/ml)	Staph. epidermidis	176000 (123000-395000)	H=3.309, p=0.507
	Staph. aureus	208500 (104000-438000)	
	Methicillin resistant Staph. epidermidis	260000 (188000-378000)	
	Methicillin resistant Staph. aureus	234000 (158000-412000)	
	Staph. spp.	218000 (137500-317500)	
CRP (mg/L)	Staph. epidermidis	55 (23-175)	H=19.469, **p=0.001**
	Staph. aureus	68.5 (26-186)	
	Methicillin resistant Staph. epidermidis	14.3 (7.37-52.8)	
	Methicillin resistant Staph. aureus	105 (5-133)	
	Staph. spp.	21.15 (7.27-66.8)	

*Kruskal-Wallis test

There were no relationships among mortality or clinical outcome, gender, fever, infection, the type of used antibiotic, and the place and result of culture (Table 3).

Table 3: The relationships of clinical outcome (mortality) and other categorical variables

	Died	**Survived**		
	n (%)	**n (%)**	**χ^2**	**p**
Boys	25 (73.5)	83 (57.2)	2.911	0.088
Girls	9 (26.5)	62 (42.8		
With fever	14 (41.2)	52 (35.8)	0.302	0.582
Without fever	20 (58.8)	93 (64.2)		
No antibiotic	14(41.2)	75 (51.7)	1.152	0.562
Vancomycin	13 (38.2)	46 (31.7)		
Teicoplanin	7 (20.6)	24 (16.6)		

Staph. epidermidis	3 (8.8)	12 (8.3)	5.155	0.272
Staph. Aureus	5 (14.7)	17 (11.7)		
MR Staph. epidermidis	11 (32.4)	70 (48.3)		
MR Staph. aureus	0 (0)	5 (3.4)		
Staph. spp.	15 (44.1)	41 (28.3)		

MR: methicillin-resistant.

Discussion

Key results

The patients with infection had higher CRP levels than in patients without infection. WBC and PLT levels were higher among survivors compared to the deceased patients. On the other hand, patients treated with teicoplanin and patients whose blood cultures grew Staph. aureus or methicillin-resistant Staph. aureus had higher CRP levels.

Limitations

A noteworthy limitation of this study is its retrospective nature. The study was based on the clinical protocol of the ICU during the study period, where the decision on implementing antibiotics and which antibiotic to start depended on the clinical judgment of the clinician in charge. On the other hand, including some other variables such as the mean platelet volume, platelet distribution width, platelet count, and platelet crit could yield extra information.

Interpretation

Since clinical manifestations of most febrile infants are nonspecific, differentiation of serious bacterial infections from self-limiting viral illnesses is a major challenge (11). Many studies were performed to identify potential screening markers to assist physicians reliably discriminating children with fever and increased risk of bacterial infection from children with lower risk. One of these indicators is CRP, an acute-phase reactant that rapidly increases during infection, inflammation, and trauma (12). The results of the present study indicate that CRP is still an essential criterion for bacterial infection in children in the ICU. In a recent survey, it has been claimed that CRP is a useful biomarker in predicting serious bacterial infections in young febrile infants (11).

It has been reported that neonates with early-onset sepsis had a significantly higher WBC count than neonates without sepsis. This remained significant even after 12-24 hours of admission (13). In the present study, WBC levels showed no relationship with sex, fever, infection, antibiotic type, culture results, or mortality. In a related study, the authors concluded that WBC count by itself was neither a dependable nor accurate predictor of severe bacterial infection in febrile infants (14). The findings of another study confirm this suggestion (11).

A recent study investigated the role of platelets (15). In sepsis, platelets facilitate the development of hyper inflammation, disseminated intravascular coagulation, and micro thrombosis, and subsequently may lead to multiple organ failure. Incongruous accumulation and activity of platelets are crucial events in the development of sepsis-related complications such as acute lung and kidney injury. In the present study, WBC and PLT levels were higher in surviving patients than in the deceased ones. Low PLT in children who died in the pediatric ICU may be related to hyperinflammation due to the excessive platelet activation. Thus, low PLT in these patients may be related to increased platelet consumption, increased platelet

destruction (immune mechanisms) (16), and increased platelet sequestration (17). Also, in a case-control study, the mean platelet volume, platelet distribution width, platelet count, and platelet crit were suggested as predictors of in-hospital pediatric mortality (1).

Suitable antimicrobial therapy is a prerequisite for appropriate patient outcomes. Incorrect or suboptimal use of antibiotics can lead to many undesirable issues, such as increased length of stay, resistant infections, and mortality (18). Critically ill intensive care patients, especially those with severe sepsis, are at risk of antibiotic failure and secondary infections associated with inappropriate antibiotic use. The common ICU infections can only be handled via the initiation of empiric antibiotic therapy based upon local susceptibilities, following by daily evaluation of signs and symptoms of the infection, and narrowing of antibiotic therapy when possible.

MRSA is a widespread cause of bloodstream and other invasive infections (19). Since a long time, vancomycin is the drug of choice for the treatment of these cases. However, one of the chief limitations for the use of vancomycin is its potential to cause nephrotoxicity (20). Teicoplanin, another glycopeptide, has basically the same efficacy of vancomycin with some advantages such as once-daily bolus administration, intramuscular use, lack of requirement for routine serum monitoring, and possibly less nephrotoxicity (21). On the other hand, teicoplanin is expensive compared to vancomycin.

Vancomycin and teicoplanin are the two commonly-used agents to treat gram-positive infections. They are especially employed in infections caused by MRSA. There is uncertainty regarding the effects of teicoplanin compared to vancomycin on the kidney functions; some previous studies suggested that teicoplanin is less nephrotoxic than vancomycin (6). In the present study, the patients treated with teicoplanin had higher CRP levels, but there was no relationship between the type of antibiotic and mortality. Also, in a meta-analysis, no difference was found between vancomycin and teicoplanin concerning clinical or bacteriological response (22).

Conclusion

The results of the present study demonstrate that CRP is still the most sensitive indicator for the diagnosis of neonatal infection as well as sepsis in pediatric intensive care units; it may be also valuable for predicting the clinical outcome. Besides, PLT is a crucial indicator to follow the clinical outcome in children in the ICU. Low PLT in children of bad prognosis may be related to hyper inflammation due to the excessive platelet activation, then, increased platelet consumption, increased platelet destruction, and increased platelet sequestration. Additionally, there is no difference in treating severe bacterial infections in the ICU with vancomycin or teicoplanin regarding the clinical outcome.

Conflict of Interest

The authors have no conflict of interest in this study.

Funding

This study was not funded by any organization.

References

1. *Waheed U, Williams P, Brett S et al. White cell count and intensive care unit outcome. Anaesthesia. 2003 Feb;58(2):180–2.*
2. *Zarychanski R, Houston DS. Assessing thrombocytopenia in the intensive care unit: the past, present, and future. Hematol Am Soc Hematol Educ Progr. 2017 Dec;2017(1):660–6.*
3. *Gao L, Liu X, Zhang D et al. Early diagnosis of bacterial infection in patients with septicopyemia by laboratory analysis of PCT, CRP and IL-6. Exp Ther Med. 2017 Jun;13(6):3479–83.*

4. *Li Z, Wang H, Liu J et al. Serum soluble triggering receptor expressed on myeloid cells-1 and procalcitonin can reflect sepsis severity and predict prognosis: a prospective cohort study. Mediators Inflamm. 2014;2014:641039.*
5. *Sampedro GR, Bubeck Wardenburg J. Staphylococcus aureus in the Intensive Care Unit: Are These Golden Grapes Ripe for a New Approach? J Infect Dis. 2017 Feb;215(suppl_1):S64–70.*
6. *Cavalcanti AB, Goncalves AR, Almeida CS et al. Teicoplanin versus vancomycin for proven or suspected infection. Cochrane database Syst Rev. 2010 Jun;(6):CD007022.*
7. *von Elm E, Altman DG, Egger M et al. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies. Int J Surg. 2014 Dec;12(12):1495–9.*
8. *Cleri DJ, Corrado ML, Seligman SJ. Quantitative culture of intravenous catheters and other intravascular inserts. J Infect Dis. 1980;141(6):781–6.*
9. *Kloos WE, Bannerman TL. Manual of clinical microbiology. Am Soc Microbiol Washington, DC. 1991;*
10. *Faul F, Erdfelder E, Lang A-G et al. Power 3:A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behav Res Methods. 2007;*
11. *Zarkesh M, Sedaghat F, Heidarzadeh A et al. Diagnostic value of IL-6, CRP, WBC, and absolute neutrophil count to predict serious bacterial infection in febrile infants. Acta Med Iran. 2015 Jul;53(7):408–11.*
12. *Hsiao AL, Baker MD. Fever in the new millennium: a review of recent studies of markers of serious bacterial infection in febrile children. Curr Opin Pediatr. 2005 Feb;17(1):56–61.*
13. *Abdollahi A, Shoar S, Nayyeri F et al. Diagnostic Value of Simultaneous Measurement of Procalcitonin, Interleukin-6 and hs-CRP in Prediction of Early-Onset Neonatal Sepsis. Mediterr J Hematol Infect Dis. 2012;4(1):e2012028.*
14. *Bachur RG, Harper MB. Predictive model for serious bacterial infections among infants younger than 3 months of age. Pediatrics. 2001 Aug;108(2):311–6.*
15. *de Stoppelaar SF, van 't Veer C, van der Poll T. The role of platelets in sepsis. Thromb Haemost. 2014 Oct;112(4):666–77.*
16. *Ghosh TK, Khan N, Malik A. Platelet auto-antibodies in septicaemic patients. Indian J Pathol Microbiol. 1999 Jan;42(1):31–5.*
17. *Greinacher A, Selleng K. Thrombocytopenia in the intensive care unit patient. Hematol Am Soc Hematol Educ Progr. 2010;2010:135–43.*
18. *Campion M, Scully G. Antibiotic Use in the Intensive Care Unit: Optimization and De-Escalation. J Intensive Care Med. 2018 Dec;33(12):647–55.*
19. *Bubacz MR. Community-acquired methicillin-resistant Staphylococcus aureus: an ever-emerging epidemic. AAOHN J. 2007 May;55(5):193–4.*
20. *Maclayton DO, Hall RG 2nd. Pharmacologic treatment options for nosocomial pneumonia involving methicillin-resistant Staphylococcus aureus. Ann Pharmacother. 2007 Feb;41(2):235–44.*
21. *Wood MJ. Comparative safety of teicoplanin and vancomycin. J Chemother. 2000 Nov;12 Suppl 5:21–5.*
22. *Wood MJ. The comparative efficacy and safety of teicoplanin and vancomycin. J Antimicrob Chemother. 1996 Feb;37(2):209–22.*

FT70

ADMA, a Useful Biomarker in CO-Poisoned Children?

Abdullah Yazar[1], Fatih Akın[1] Ahmet Sert[2],Esra Türe[1],Cemile Topcu[3],

Alaaddin Yorulmaz[2], Fatih Ercan[1]

[1] Department of Pediatrics, Necmettin Erbakan University, Konya, Turkey

[2] Department of Pediatrics , Selcuk University, Konya, Turkey

[3] Department of Medical Biochemistry, Necmettin Erbakan University , Konya, Turkey

Amaç:
Karbon monoksit zehirlenmesi (COP), tüm dünyadaki zehirlenme vakalarından kaynaklanan ölüm ve hastalıkların önde gelen nedenidir. Çocuklar COP'dan daha hızlı ve ciddi şekilde etkilendiklerinden, karboksihemoglobin (CO-Hb) ve / veya laktat seviyeleri normale dönse bile daha uzun bir tedavi süresi gerekebilir. Bu nedenle, tedavi süresini ve COP'un nihai sonuçlarını öngören yeni bir belirteçlere ihtiyaç vardır.
Gereç ve Yöntem:
Bu vaka kontrol çalışması, çocuk acil servisimize başvuran 18 yaşından küçük, 32 karbon monoksit zehirlenmesi olan hasta üzerinde gerçekleştirildi. Kontrol grubu yaş ve cinsiyet uyumlu 30 sağlıklı çocuk ile oluşturuldu. Hastalardan, arterial kan gazı, karboksihemoglobin, metemoglobin, laktat ve asimetrik dimetilarjinin (ADMA) analizi için kan örnekleri alındı.

Bulgular:
COP hastalarında, başvuru sırasındaki ve tedavi sonrası ADMA düzeyleri kontrol grubuyla karşılaştırıldığında anlamlı olarak yüksek olduğu görüldü ($P < 0.05$) (1.36 [0.89–6.94], 1.69 [0.76–7.81], 1.21 [0.73–3.18] nmol/L, sırasıyla). Başvurudaki ve 6 saat sonraki kontrolde CO-Hb ve ADMA düzeyleri arasında pozitif korelasyon saptanmadı (sırasıyla $P = 0.903$, $r = 0.218$, $P = 0.231$, $r = 0.022$). Başvuru sırasındaki laktat ve CO-Hb düzeyleri arasında pozitif korelasyon tespit edildi ($P = 0.018$, $r = 0.423$).

Sonuçlar:
Bu çalışma, COP olan hastalarda 6 saatlik % 100 oksijen tedavisinden sonra CO-Hb ve / veya laktat seviyelerinin normal aralığa dönmesine rağmen ADMA seviyelerinin hala yüksek olduğunu göstermiştir. Bu sonuçlara dayanarak, ADMA'nın COP olan hastaların takibinde faydalı bir biyobelirteç olabileceğini düşünüyoruz.
Anahtar Kelimeler: ADMA, biyobelirteç, karbon monoksit

ABSTRACT
Objective: Carbon monoxide poisoning (COP) is the leading cause of mortality and morbidity due to poisoning worldwide. Because children are affected more quick and severely from COP, they may require a longer treatment period, even if carboxyhemoglobin (CO-Hb) and/or lactate levels return to normal. Therefore, a new marker that predicts the duration of treatment and the final outcomes of COP is needed.
Methods: This case control study was conducted on 32 carbon monoxide–poisoned patients younger than 18 years who had been admitted to pediatric emergency department. The control group included age- and sex-matched 30 healthy children. Blood samples were obtained for

analysis of arterial blood gases, CO-Hb percent, methemoglobine, lactate, and asymmetric dimethylarginine (ADMA).

Results:
Asymmetric dimethylarginine levels were significantly increased ($P < 0.05$) in patients with COP on admission and after the treatment when compared with controls (1.36 [0.89–6.94], 1.69 [0.76–7.81], 1.21 [0.73–3.18] nmol/L, respectively). There was no positive correlation between CO-Hb and ADMA levels on admission and at 6 hours ($P = 0.903$, $r = 0.218$, $P = 0.231$, $r = 0.022$, respectively). Positive correlation was found between lactate and CO-Hb levels on admission ($P = 0.018$, $r = 0.423$).

Conclusions:
This study showed that ADMA levels were still high after 6 hours of 100%oxygen therapy in children with COP, even CO-Hb and/or lactate levels return to normal range. On the basis of these results, we consider that ADMA may be a useful biomarker in patient with COP.

Key Words: *ADMA, biomarker, carbon monoxide*

INTRODUCTION

Carbon monoxide poisoning (COP) is the leading cause of mortality and morbidity due to poisoning worldwide (1). After inhalation of CO via the lungs, it easily diffuses from lungs into the bloodstream and then forms carboxyhemoglobin (CO-Hb) with hemoglobin (Hb), which is a tight but slowly reversible Complex. When CO-Hb levels rise, the cerebral blood vessels become dilated, and coronary blood flow and capillary density increased. Continued exposure results with central respiratory depression due to cerebral hypoxia. Especially, ventricular arrhythmias develop with cardiac involvement. (2-5)

Asymmetric dimethylarginine (ADMA) is an endogenous inhibitor of endothelial nitric oxide synthase. (5,6) ADMA causes a decrease in NO levels leading to endothelial dysfunction (7). In this respect, increased levels of ADMA may indicate endothelial dysfunction in patients exposed to CO gas. The aim of this study was to determine the changes of ADMA levels, as an oxidative stres marker, in patients with COP on admission and after treatment. To the best of our knowledge, our study is the first to analyze ADMA levels in children with COP.

METHODS

This case control study was conducted on CO-poisoned patients younger than 18 years who had been admitted to pediatric emergency department of Necmettin Erbakan University Meram Medical Faculty, between October 2016 and May 2017.

The diagnosis of COP was based on history, clinical examination, and CO-Hb percent (CO-Hb%) greater than 3% at the time of admission. All patients received high-flow 100% oxygen therapy with nonrebreathing mask with an oxygen reservoir bag for at least 6 hours. The control group included age- and sex-matched 30 healthy children.

Blood samples were obtained for analysis of arterial blood gases, CO-Hb%, MetHb%, lactate, and ADMA on admission and after 6 hours of treatment. CK, CK-MB, LDH, troponin I, AST and ALT, urea, creatinine, and complete blood count were measured only at admission.

Statistical Analysis

The collected data were computerized and statistically analyzed using Statistical Package for the Social Sciences (SPSS for Windows, version 15.0). Quantitative data were summarized as mean ± SD. If not normally distributed, parameters were presented as median (range). The Kolmogorov-Smirnov test was applied to check distribution of parameters. Data that did not normally distributed (ADMA levels) were log-transformed for analysis. Independent t test or Mann-Whitney U test was used to compare groups, and the associations between parameters were assessed using the Pearson or Spearman correlation test. Paired samples t test or Wilcoxon-signed rank test was used to compare pretreatment and posttreatment values of the study group. Results were considered significant if $P \leq 0.05$.

RESULTS

Thirty-eight patients had admitted to pediatric emergency department during this period with CO poisoning. The groups were similar with respect to age ($P > 0.05$). Loss of consciousness was not present in any patient and cardiovascular and respiratory system examinations of all patients were normal.

Asymmetric dimethylarginine levels were significantly increased in patients with COP on admission and after the treatment when compared with controls ($P < 0.05$). Asymmetric dimethylarginine levels did not significantly differ in patients with COP after the treatment when compared with baseline ($P > 0.05$). Serum ADMA values were not correlated with other parameters before and after treatment. After log transformation, serum ADMA values were not correlated with other parameters before and after treatment. There was no positive correlation between CO-Hb and ADMA levels on admission and at 6 hours ($P = 0.903$, $r = 0.218$, $P = 0.231$, $r = 0.022$, respectively). Positive correlation was found between lactate and CO-Hb levels on admission ($P = 0.018$, $r = 0.423$). Therewas no statistically difference between symptomatic and asymptomatic patients in terms of both ADMA and CO-Hb levels ($P > 0.05$). Serum CK, CK-MB, LDH, lactate, CO-Hb%, and metHb% values were significantly decreased in patients with COP after the treatment when compared with the baseline.

DISCUSSION

Although the pathophysiology of COP is complex and incompletely understood, oxidative stress plays an important role. Recent studies focused on tissue damage due to CO-induced oxidative stres (8,9). Here we showed that levels of ADMA, which is an oxidative stress biomarker, were elevated in patients with COP.

This study mainly focused on ADMA levels of children with acute COP. Carbon monoxide exposure–induced oxidative stres leads to an increase in ADMA levels. A subsequent decrease in NO levels results with endothelial dysfunction. In our study, we found that ADMA levels were significantly increased in patients with COP before and after treatment when compared with controls. Although high levels of WBC, ANC, CO-Hb, lactate, CK, and CK-MB levels returned to normal after treatment, ADMA levels continued to be high. This suggests that possible oxidative stress is continuing after 100% oxygen therapy, even if CO-Hb and/or lactate levels return to normal. In conclusion, on the basis of these results, we consider that ADMA may be a useful biomarker in patients with COP, especially where CO-Hb and lactate level may be normal in delayed cases. However, this study has been conducted on a small sample size, so it is felt that further larger clinical trials should be conducted to clarify the role of ADMA in CO-induced endothelial dysfunction in children.

References

1. *Prockop LD, Chichkova RI. Carbon monoxide intoxication: an updated review. J Neurol Sci. 2007;262:122–130.*
2. *Guzman JA. Carbon monoxide poisoning. Crit Care Clin. 2012;28: 537–548.*
3. *Eroglu M, Yildirim AO, Eyi YE, et al. Asymmetric dimethylarginine and pro-B-type natriuretic peptide levels in patients with carbon monoxide poisoning. Dis Mol Med. 2013;1:21–25.*
4. *Hanley ME, Patel PH. Carbon Monoxide Toxicity. 2019 Apr 18. StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2019 Jan-. Available from http://www.ncbi.nlm.nih.gov/books/NBK430740/*
5. *ErbilME,KurtYG,YamanH, et al.Metabolism of asymmetric dimethylarginine and its clinical significance. Turk J Biochem. 2012;37:99–105.*
6. *Sydow K, Munzel T. ADMA and oxidative stress. Atherosclerosis Suppl. 2003;4:41–51*
7. *Cooke JP. ADMA: its role in vascular disease. Vasc Med. 2005;10:11–17.*
8. *Kavakli HS, Erel O, Delice O, et al. Oxidative stress increases in carbon monoxide poisoning patients. Hum Exp Toxicol. 2011;30:160–164.*
9. *Sydow K, Munzel T. ADMA and oxidative stress. Atherosclerosis Suppl. 2003;4:41–51.*

FT71

Prenatally-Diagnosed Double Aortic Arc with Right Dominance: A Case Report

Fatma Hilal Yılmaz[1], Mehmet Burhan Oflaz[2], Nuriye Emiroğlu[1], Hüseyin Altunhan[1]

Necmettin Erbakan University, Meram Faculty of Medicine, Newborn Unit, Konya

Necmettin Erbakan University, Meram Faculty of Medicine, Pediatric Cardiology Unit, Konya

Introduction:

Double Aortic Arc (DAA) is a rare vascular ring form in which the trachea and esophagus are completely surrounded by right and left aortic arcs. The frequency is one in 2000-4000 pregnancies. It is extremely rare to detect with Fetal Echocardiography (ECHO). It is also the most common form of vascular rings, and usually shows symptoms in infant or early childhood period. In symptomatic cases, full recovery can be ensured with early diagnosis and treatment. Here, a case with DAA that was diagnosed in fetal ECHO will be presented, which has a very low prevalence of prenatal diagnosis.

The Case:

A 21-year-old mother gave birth by cesarean section to a first living baby of first pregnancy born 3210 g at 38^{+4} weeks. The baby was hospitalized with a pre-diagnosis of aortic archus. System examinations of the patient was normal: Oxygen saturation: 95%, respiratory count: 55/min, body temperature: 36.5ºC. In the fetal echocardiographic examination during the 35th gestational week, there was aberrant vascular structure (minor archus) which separated from the aorta-proximal transverse archus line and crossed the trachea from left anterolateral, and it was considered that the patient had double aortic arc in right aortic arcus (major/dominant) on the right of the trachea in normal calibration (Figure-1A, B). In the first 1-hour after the birth, it was confirmed that the patient, who was evaluated by the Pediatric Cardiology Unit, had Double Aortic Arc in the ECHO and in the examination of high parasternal section (Figure-1C, D). Computed Tomography was carried out to the patient who was followed up with the mother in terms of possible unnoticed compression findings. CT examination revealed double arcus aorta on the anterior trachea, and the patient was reported as not having any signs of vascular compression (Figure-2). The patient was discharged with recommendations, and was followed-up at the Pediatric Cardiology Clinic with information on the symptoms that might develop.

Discussion:

Vascular rings constitute less than 1% of congenital heart anomalies. Double Aortic Arc was reported by Wolman in 1939 for the first time. The first successful surgical repair of vascular rings whose embryological origins were reported by Edwards was performed by Gross for the first time (1-2). In normal embryonic development, while right-side 4th arcus regresses, the left-side 4th archus creates normal archus by proceeding (3). In this anomaly, which occurs as a result of the insufficient regression of aortic archus, the cases become symptomatic as a result of the compression of the ring-forming vascular bodies on the trachea and esophagus causing respiratory distress and nutrition problems in newborn and early infant period. In our case, the archus was divided into right and left arches, and after crossing the trachea from the front and the esophagus from behind, it merged to form the descending aorta. In our case, the front minor archus formed the left archus, and the dominating archus was located on the right, which is reported in the literature mostly as right-dominant archus (3, 4).

The most commonly seen symptom in vascular ring anomalies is inspiratory and expiratory wheezing and respiratory distress, which may appear at early stages like neonatal period. Full correction operation is carried out in patients who are symptomatic due to compression by eliminating the vascular compression by the dissolution of the minor archus in patients without perfusion loss after occlusion test (5). Since vascular ring anomalies are mostly isolated anomalies, if the doctor sees that only intracardiac structures are normal in the evaluation of obstetric ultrasound in prenatal period does not rule out the diagnosis. It is important that the doctor is careful about the aberrant vascular structures. Vascular ring and other accompanying cardiovascular anomalies may be detected with a detailed fetal echocardiographic examination. Our patient was diagnosed with a double aortic arc in the fetal echo examination in 35th gestational week and was followed-up, and the diagnosis was confirmed with early postpartum echo examination. In the computed tomographic examination of thoracic aorta to clarify vascular compression and anatomy, it was seen that the minor archus in the left anterior made a ring; however, in its current form, it did not cause compression. Morbidity and mortality can be reduced by preventing delayed diagnosis and treatment of postpartum patients by detecting these patients in the prenatal period.

Result:

Double AA causes compression in the trachea and esophagus, and results in various symptoms like respiratory obstruction, difficult swallowing, chronic wheezing, vomiting and aspiration. Late diagnosis is frequent in these cases, and may increase permanent structural damage to the trachea because of permanent compression. In cases that do not have compression symptoms, as it was the case in our patient, prenatal diagnosis of experienced perinatologists and pediatric cardiologists is important in preventing delayed diagnosis. Complete recovery can often be achieved with early diagnosis and treatment in these patients.

References:

1- *Wolman IJ. Syndrome of constricting double aortic arch in infancy: report of a case. J Pediatr 1939;14:527-33.*
2- *Gross RE. Surgical relief for tracheal obstruction from a vascular ring. N Engl J Med 1945;233:586-90.*
3- *Matherne GP, Lim DS. Double aortic arch. In: Allen HD, Driscoll DJ, Shaddy RE, Feltes TF, editors. Moss & Adamsheart disease in infants, children & adolescents: including the fetus and young adults. Philadelphia: Lippincott Williams & Wilkins; 2008. p. 749-52.*
4- *F.A.Pac, M.Pac, I. Ece. Double aortic arch with dominant left arch: case report. Arch Türk Soc Cardiol 2012;40(6):544-547*
5- *Alsenaidi K, Gurofsky R, Karamlou T, Williams WG, Mc-Crindle BW. Management and outcomes of double aortic arch in 81 patients. Pediatrics 2006;118:e1336-41.*

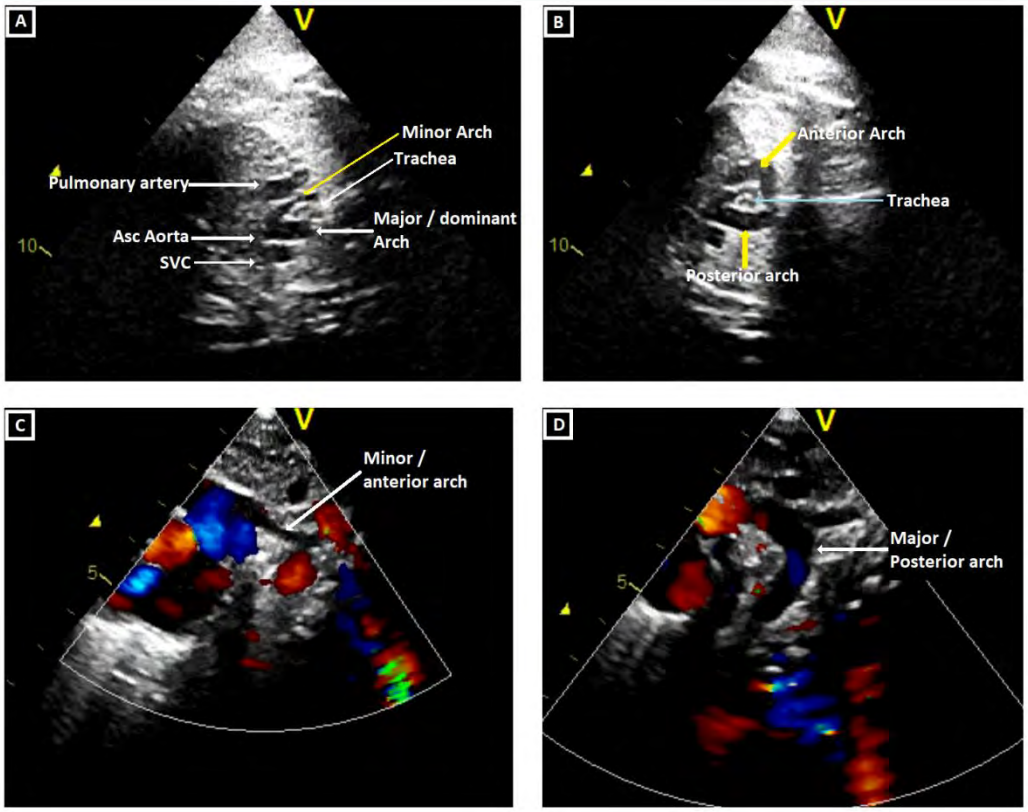


Figure-1. Prenatal Fetal echocardiographic examination shows the dominant arch extending from the aorta to the right trachea, and separated from the ascending aorta and aberrantly following the tracheal left anterior (A).In the posterior tilt of the probe, it is seen that both arches combine in the posterior to form the arch of the pattern and surround the trachea in a ring-shaped manner (B).In the postnatal echocardiographic examination, a minor acus (3,4mm) (C) and a well-developed dominant arch is seen in the supraternal section (D).

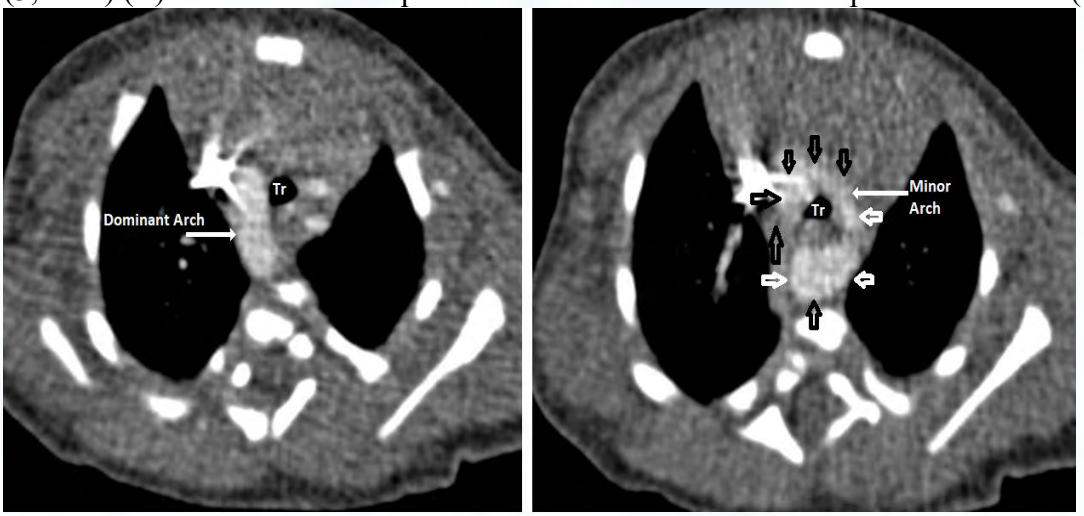


Figure-2. Postnatal thoracic CT angiographic examination revealed that the dominant arch located in the right posterior enveloped the trachea (Tr) via the left and anterior arches, and the two arches joined together to form the descending aorta.

FT72

The Importance of Regular Follow-Up in Children With Cystic Fibrosis And Evaluation Of İnformation About Immunoreactive Trypsinogen İn Screening: A Case Report

*Ahmet Emre HATIR*1, Sevgi PEKCAN*2*

*Necmettin Erbakan University School of Medicine Department of Family Medicine, Konya, Turkey*1*

*Necmettin Erbakan University School of Medicine Department of Pediatrics, Division of Pediatric Chest Diseases, Konya, Turkey*2*

ABSTRACT

OBJECTIVE:

In this study, the importance of follow-up in cystic fibrosis (CF) patients was discussed and information was evaluated about immune reactive trypsinogen (IRT) used in screening. In addition, CF should be keep in mind as a differential diagnosis in patients presenting with pseudo-bartter syndrome (PBS).

CASE: This study included two cases. The first case had normal IRT test in the newborn period. The patient presented to us with diarrhea and vomiting at the age of 3 months and was re-screened for CF, due to presence of PBS. He was diagnosed as CF despite normal screening in the neonatal period. In the second case, we investigated a patient who had CF in the neonatal screening, was not followed up by her family, then came to the hospital with the complaint of malnutrition and was diagnosed with CF at 6 months of age.

CONCLUSION:

There may be cases in which the IRT is misleading during neonatal screening. False negative result may have a probability. Although the screening test is positive, delayed diagnosis of CF may cause many complications in the later years of the patient's life.

Keywords: *Cystic Fibrosis, Genetic Diseases, Newborn Screening*

ÖZET

AMAÇ:

Bu çalışmada, kistik fibrozis (KF) hastalarında takibin önemi tartışılmış ve taramada kullanılan immün reaktif tripsinojen (IRT) hakkında bilgi değerlendirmesinde bulunulmuştur. Ayrıca, pseudo-bartter sendromu (PBS) ile başvuran hastalarda KF'nin ayırıcı tanı olarak akılda tutulması gerektiği belirtilmiştir.

OLGU:

Bu çalışma iki olgu içermektedir. İlk olgunun yenidoğan döneminde yapılan IRT testi normaldi. Hasta bize 3 aylıkken ishal ve kusma ile başvurdu ve PBS varlığı nedeniyle KF için tekrar tarandı. Yenidoğan dönemindeki normal taramaya rağmen KF tanısı aldı. İkinci olguda yenidoğan taramasında KF tespit edilen fakat ailesi tarafından takip edilmeyen, daha sonra yetersiz beslenme şikayeti ile hastaneye gelen ve 6 aylıkken KF teşhisi konan bir hasta araştırılmıştır.

SONUÇ:
Yenidoğan taraması sırasında IRT'nin yanıltıcı olduğu durumlar olabilir. Yanlış negatiflik her zaman göz önünde bulundurulmalıdır. Tarama testi pozitif olsa da geç konulan KF tanısı hastanın yaşamının sonraki yıllarında birçok komplikasyona neden olabilir.

INTRODUCTION
Cystic fibrosis (CF) is an multisystemic and autosomal recessive inherited disease. It is an important cause of severe chronic lung disease and exocrine pancreatic insufficiency in children. In addition, hyponatremic events are seen in many cases (1). Pseudo-Bartter syndrome (PBS) is likely to be associated with attacks of hyponatremic hypochloremic dehydration with metabolic alkalosis in infants with CF. Screening program for CF has been started since 2015 in Turkey (2), but immunoreactive trypsinogen (IRT) may be misleading for screening. The possibility of false negativity should not be ignored (3).

CASE 1
A 3 months old male patient was brought to our hospital for diarrhea and vomiting for the last 4 days. It has been learned that his nutrition has decreased. There was no pathology related to birth and no kinship between his parents. One of the siblings had a diagnosis of CF. The first IRT test performed in the neonatal period was 46.4 ng/mL and the second was 63.2 ng/mL. In physicial examination, patient's height and weight were under 3 percentile. Skin turgor was reduced and sluggish. Systemic examination was normal. Laboratory examination revealed hypokalemia (2.7 mmol/L), hyponatremia (123 mmol/L), hypochloremia (53 mmol/L), and metabolic alkalosis (table 1). There was no growth in sputum and throat culture. The patient's general condition improved with intravenous antibiotic and fluid-electrolyte replacement. His metabolic alkalosis returned to normal on the 5th day of hospitalization. Because of the clinical picture of hypokalemic hypochloremic metabolic alkalosis, vomiting and history of CF in his sibling, CF/PBS was considered. Sweat test was 81 mmol/L.
The patient was accepted as CF and PBS with these findings. In the gene analysis of the patient, homozygous delF508 was detected in CFTR gene mutation and CF diagnosis was confirmed. The patient is now 4 years old, and height-weight percentiles were between 50-75p. He has never had any episodes of PBS since CF was diagnosed.

CASE 2
A 6 months old female patient’s IRT test in the neonatal screening was 268 ng/mL and the second was 322 ng/mL. The sweat test of the patient was 72 mmol/L and she was considered CF but she was not followed up by her family. There was no pathology related to birth. There was a first degree kinship between his parents. One of the siblings had CF. In physicial examination, patient's height and weight were under 3 percentile. When he was brought to our hospital, he had no active complaints and his physical examination was normal. Laboratory examination was unremarkable (table 1). There was no growth in sputum and throat culture. Sweat test was 91.6 mmol/L. CFTR gene analysis revealed homozygous delF508 and the diagnosis of CF was confirmed. The patient is now 3 years old, height-weight percentiles were between 25-50p.

DISCUSSION
Most CF infants with acid-base and electrolyte disorders are likely to have vomiting attacks before admission (4). The first case was a 3 months old male infant who presented with diarrhea and vomiting in the last days. Therefore, PBS should be considered in the differential diagnosis of infants presenting with hypochloremic metabolic alkalosis and CF should be

investigated as an underlying disease. It should be kept in mind that PBS may be the first sign of CF.

Newborns with CF usually have elevations in blood trypsinogen. CF is rare in patients with normal sweat test results, but is likely to be missed (1). IRT results threshold in Turkey is higher than 70 mmol/L. If it is found high with double check, it is directed to the sweat test center. The sweat test (sweat chloride concentration) is referred to as the gold standard. If the measurement results are ≥ 60 mmol/L, CF strongly supports the diagnosis. In this case, gene mutation analysis is performed (5). The fact that the neonatal IRT level is lower than the cut-off value doesn't always mean CF exclusion (6). In a study by Padoan et al, 7.6% false negativity was detected in CF screening (7). In the first case, the patient was diagnosed late because of normal screening. Newborns diagnosed for CF should receive an assessment at the CF center. Genetic counseling should be provided to parents after identification of CF mutation. A newborn with an uncertain diagnosis for CF is not suitable for long-term disease applications. During follow-up, the primary care physician should be informed about the characteristics of clinical management and should work in cooperation with the CF center. Follow-up visits should be made at 3, 6 and 12 months and then annually (8).

Although the second patient's screening test was positive, delayed CF diagnosis may lead to unnecessary hospitalization, development of many complications and burden on public health. Children who can't be diagnosed, whose sweat test is intermediate and who have high IRT screening should be followed for 2 years for signs of CF and the family is informed about what these findings are. In conclusion, being aware of the symptoms of CF, necessary tests for early diagnosis and orient to advanced clinics will have many advantages.

References

1- *Kliegman RM, St. GEME JW, Blum NJ et al, Nelson Textbook of Pediatrics, 21th Edition, Elsevier; 2019; p. 2282-6*

2- *Bartter FC, Pronove P, Gill JR, MacCardle RC. Hyperplasia of the juxtaglomerular complex with hyperaldosteronism and hypokalemic alkalosis. A new syndrome. Am J Med 1962;33:811-28.*

3- *Vilotijević-Dautović G, Stojanović V. Pseudo-Bartter's Syndrome in patients with cystic fibrosis: a case series and review of the literature. Srp Arh Celok Lek. 2015;143(11–12):748-751.*

4- *Fustik S, Pop-Jordanova N, Slaveska N, Koceva S, Efremov G. Metabolic alkalosis with hypoelectrolytemia in infants with cystic fibrosis. Pediatr ınt 2002;44:289-92.*

5- *Ersu R, Çakır E. Kistik Fibrozis Yenidoğan Tarama Testi ile Tanı Alan Hastaları İzleme Rehberi. Ankara: T.C. Sağlık Bakanlığı Türkiye Halk Sağlığı Kurumu; 2015:6.*

6- *Rock MJ et. al. Factors Accounting for a Missed Diagnosis of Cystic Fibrosis After Newborn Screening 2011; 46(12): 1166–1174*

7- *Padoan, R., Genoni, S., Moretti, E., Seia, M., Giunta, A., & Corbetta, C., Genetic and clinical features of false-negative infants in a neonatal screening programme for cystic fibrosis. Acta Paediatrica 2007; 91(1), 82–87.*

8- *Sermet-Gaudelus I, Brouard J, Audrézet M et al, Guidelines for the clinical management and follow-up of infants with inconclusive cystic fibrosis diagnosis through newborn screening. Archives de Pédiatrie 2017; 24(12), e1–e14.*

TABLE 1: Laboratory findings at the time of hospitalization of case 1

WBC g/dL	PLT mm³	Hb g/dL	Na mmol/L	K mmol/L	Cl mmol/L	CRP mg/dl	Ca mg/dL	Mg mg/dL	Alb g/dL	Ph	pCO_2 mmHg	HCO_3 mmol/L
12.500	585.000	11.4	123	2.7	53	<2	10.8	1.4	5.4	7.68	56.7	43.8
Laboratory findings at the time of hospitalization of case 2												
WBC g/dL	PLT mm³	Hb g/dL	Na mmol/L	K mmol/L	Cl mmol/L	CRP mg/dl	Ca mg/dL	Mg mg/dL	Alb g/dL	Ph	pCO_2 mmHg	HCO_3 mmol/L
14.500	605.000	9.3	137	5	107	4.3	9.53	2.21	3.7	7.27	36.6	16.5

FT73

A Case Of Primary Ciliary Dyskinesia And The İmportance Of Anatomical Side Markers İn Direct Radiography

Ahmet Emre HATIR[*1], *Sevgi PEKCAN*[*2]

Necmettin Erbakan University School of Medicine Department of Family Medicine, Konya, Turkey[*1]

Necmettin Erbakan University School of Medicine Department of Pediatrics, Division of Pediatric Chest Diseases, Konya, Turkey[*2]

ABSTRACT

OBJECTIVE:

If situs inversus is seen on chest x-ray and the patient's clinic is compatible with primary ciliary dyskinesia (PSD), it should be examined in more detail and screened for siblings in case of PSD. In addition, we aimed to state that even if the directional markers are not used correctly on the chest radiography, even an obvious condition such as situs inversus may be omitted or radiographs may be misinterpreted by the physician.

CASE:

Twelve years old girl with primary ciliary dyskinesia was evaluated. The presence of recurrent sinopulmonary infection and laterality defect on chest x-ray led to the investigation of PSD and the diagnosis of PSD was confirmed by homozygous variant in CCDC39 gene.

CONCLUSION:

The literature review shows that some of the radiographs have incorrect or no anatomical direction markers. In our case, if the radiography contains an incomplete directional marker, it may lead to delayed diagnosis and wrong treatment for the patient. Screening of siblings for a genetic disease such as PSD will provide many benefits.

ÖZET

AMAÇ:

Akciğer grafisinde situs inversus görülüyorsa ve hastanın kliniği PSD ile uyumluysa, PSD ayrıntılı olarak incelenmeli ve bu hastalık tespit edilirse kardeşler de taranmalıdır. Ayrıca, direk grafilerdeki yön belirteçleri doğru kullanılmazsa situs inversus gibi bariz bir durumun bile gözden kaçabileceğini veya radyografilerin hekim tarafından yanlış yorumlanabileceğini belirtmeyi amaçladık.

OLGU:

On iki yaşında PSD'li bir kız hasta değerlendirildi. Akciğer grafisinde tekrarlayan sinopulmoner enfeksiyon ve lateralite defekti varlığı PSD'nin araştırılmasına neden oldu ve PSD tanısı CCDC39 genindeki homozigot varyant ile doğrulandı.

SONUÇ:

Literatür taraması, bazı radyografilerde yanlış anatomik yön belirteçleri olduğunu veya hiç olmadığını göstermektedir. Bizim vakamızda, eğer radyografi eksik bir yön belirteci içerirse hasta için gecikmiş tanı ve yanlış tedaviye yol açabileceği açıklanmıştır. Kardeşlerin de PSD gibi genetik bir hastalık için taranması birçok fayda sağlayacaktır.

***Keywords**: **Ciliary Motility Disorders**, Genetic Diseases, Congenital Abnormalities,*

Anatomical side markers

INTRODUCTION:

Primary ciliary dyskinesia (PSD) is also known as kartagener syndrome and immotile cilia syndrome. This syndrome is a hereditary disease which characterized by impaired cilia function and leads to various clinical manifestations such as chronic sinopulmonary disease, middle ear effusions, infertility, and laterality defects. Situs inversus is a rare congenital anomaly characterized by transposition of abdominal organs, internal organs and vessels. Situs inversus occurs in approximately 50% of patients with PSD. In the first approach to the patient with situs inversus is likely to be detected by chest x-ray (1,2). Physicians should pay attention to side marker and x-ray type (anterior or posterior) and interpret them appropriately (3).

We present a patient with primary ciliary dyskinesia who diagnosed at the age of twelve. We emphasized that the patient had recurrent sinopulmonary disease and the laterality defect on the chest radiography was the first to be considered in this disease, and that the radiography could be misinterpreted by the physician if the directional markers were not used correctly. We would like to point out that even a very cautionary condition such as situs inversus may be omitted if we do not use these markers.

CASE:

Twelve years old female patient was admitted to our hospital with fever and cough for 2 days. The patient had a history of recurrent lung infection and was first diagnosed to have pneumonia at the age of one month, but after the treatment her complaints continued to increase. The patient was brought to our hospital because of fever, vomiting and cough at the age of 2 months. For further investigation she was hospitalized in the pediatric chest diseases department and then chest x-ray and echocardiography was performed. After her first hospitalization, he had 12 more hospitalizations for lung infection. She also frequently used antibiotics for recurrent sinusitis and otitis. There was no pathology related to birth of the patient and no kinship between her parents. Her siblings had no known disease. In physicial examination, patient's height and weight were between 3-10 percentile. Respiratory system examination revealed diffuse rhonchi in both lungs and rales in some areas. Chest x-ray showed infiltration areas and dextrocardia was observed (figure 1).

Primary ciliary dyskinesia was considered with her clinic and history, also occurence of situs inversus totalis. A homozygous variant was found in the CCDC39 gene and the diagnosis of primary ciliary dyskinesia was confirmed. Genetic analysis was performed in the siblings of our case and no primary ciliary dyskinesia was detected.

DISCUSSION

The mutation in any protein in the structure or function of the ciliary mechanism may theoretically cause disease. PSD is a genetically heterogeneous disease involving many genes. PSD has an autosomal recessive inheritance and some cases is shown with X-linked inheritance in the literature. (1). There is no gold standard diagnostic method for this syndrome, the recommended diagnostic criteria is the history of chronic bronchial infection and rhinitis in early childhood with one or more of the following characteristics: (a) patient or sibling with situs inversus or dextrocardia, (b) detection of viable but inactive spermatozoa (c) impaired or no tracheobronchial clearance (4).

Reading the chest radiography can be very challenging even for specialists. It is recognized worldwide that all radiographic images should have an accurate anatomic side marker. It is important to define the image orientation and position in the view in order to evaluate a direct radiography with the clinic. Anatomical side markers are defined in the image as descriptions of "right" or "left" side (5). Malpractice potential is high in cases where the the wrong side is marked. Anatomical side markers on chest radiographs should be correctly labeled to avoid potentially harmful consequences for the patient especially in cases of dextrocardia. The importance of accurate radiographic anatomical side markers should not be underestimated.
When we look at the literature on anatomic side markers, Barry et al. Found that 5.8% of the 400 images had an incorrect or incomplete anatomic side marker (3). In the study of Platt et al., 1% of the images had no anatomical markers (6). There are lots of studies which studied anatomical side markers error and its consequences.
In our case, if the radiography contains an incomplete directional marker, it may lead to delayed diagnosis and wrong treatment for the patient. It is very beneficial for individuals and public health that physicians are familiar with the clinic of PSD and siblings should be screened as soon as possible for a genetic disease such as PSD.

References

1. *Kliegman RM, St. Geme JW, Blum NJ et al, Nelson Textbook of Pediatrics, 21th Edition, Elsevier; 2019; p.2298*
2. *Noone PG, Bali D, Carson JL et al, Discordant organ laterality in monozygotic twins with primary ciliary dyskinesia, Am J Med Genet 1999;82:155–160.*
3. *Barry K, Kumar S, Linke R, Dawes E, A clinical audit of anatomical side marker use in a paediatric medical imaging department, Journal of Medical Radiation Sciences 2016; 63(3):148–154.*
4. *Bent J III, Kartagener syndrome, e medicine 2009; 69:39 -41*
5. *DeMaio DN, Herrmann T, Noble LB et al, Best Practices in Digital Radiography, American Society of Radiologic Technologists, White paper*
6. *Platt, JM, Strudwick RM, The application of anatomical side markers during abdominal and IVU examinations: An investigation of practice prior to and post-installation of computed radiography (CR). Radiography 2009; 15(4):292–299.*

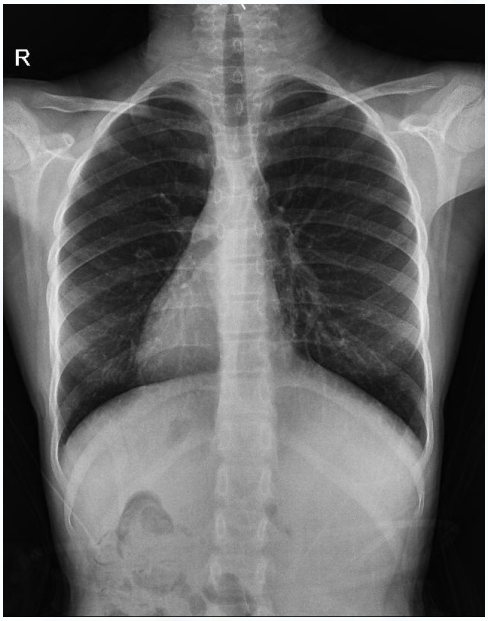


Figure 1: Chest radiography shows dextrocardia.

FT74

An Analysis of Microorganisms Isolated from Wound Cultures in Pediatric Cases

Muhammed Yusuf Ozan Avcı[1], Metin Doğan[2]

1. Necmettin Erbakan University, Meram Faculty of Medicine, Department of Pediatrics / Konya

2. Necmettin Erbakan University, Meram Faculty of Medicine, Department of Medical Microbiology / Konya

Giriş ve Amaç

Günümüzde hastalıkların takip ve tedavisinde yaşanan ilerlemelere paralel olarak daha çok sayıda hasta hastanede yatarak tedavi görmektedir. Özellikle kronik hastalıkların enfeksiyon gelişimi riskini artırmaktadır. Pediatrik vakalarda yara yeri kültürlerinin üzerine literatürde fazla veri bulunamamakla birlikte yapılan çalışmada yara yeri enfeksiyonunun beklendiği üzere en sık genel cerrahi kliniğinde, 2. sıklıkta ise çocuk hastalıkları kliniğinde görüldüğü tespit edilmiştir. Bu sebeple pediatrik vakalarda yara yerinde izole edilen mikroorganizmaların bilinmesi ampirik tedavi açısından önem arz etmektedir. Bu çalışmada pediatrik vakalarda yara yeri kültürlerinden izole edilen mikroorganizmaların retrospektif olarak değerlendirilmesi amaçlanmıştır.

Gereç ve Yöntemler:

Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi Hastanesi pediatri kliniğinde yatan hastalardan yara yeri enfeksiyonlarından alınmış kültür numunelerinden Tıbbi Mikrobiyoloji laboratuarına 01.01.2016 – 31.12.2018 tarihleri arasında kabul edilen örnekler çalışmaya dahil edilmiştir. Rutin olarak kanlı agar ve EMB agara ekimler yapılarak 37 oC'de 24 saat inkübe edilmiştir. Kültürde üreyen ve etken olabileceği düşünülen mikroorganizmalar konvansiyonel yöntemlerle ve MALDI-TOF MS sistemiyle /VITEC MS sistemiyle (BioMerieux, Fransa) tanımlanmıştır.

Bulgular:

Yara kültürlerinden izole edilen 45 mikroorganizmanın 16'sı (%35,5) *Pseudomonas aeruginosa* olarak tanımlanmış, 9'u (%20) *Acinetobacter baumannii*, 6'sı (%13,3) *Candida spp.,* 5'i (%11) *Klebsiella pneumoniae*, 4'ü (%8,8) *Escherichia coli* , 4'ü (%8,8) *Staphylococcus aureus*, 1'i (%2,2) Achromobacter denitrificans olarak tanımlanmıştır.

Sonuç:

Sonuç olarak, yara yeri enfeksiyonlarında en sık *P. aeruginosa* ve *A. baumannii* ürediği, antibiyotik tedavisi başlarken buna dikkat edilmesi gerektiği, ayrıca mayaların da enfeksiyon etkeni olarak ihmal edilmemesi gerektiği kanaatine varılmış olup, izole edilen mikroorganizmaların merkezden merkeze farklılık gösterebileceğine dikkat çekilmek istenmiştir.

Abstract

Introduction:

Nowadays, thanks to the advancements in the follow-ups and treatments of diseases, more patients have been hospitalized. Especially chronic diseases such as cancers, increases infection risk. Although there is not much data in the literature about wound cultures in pediatric cases, it was found that wound infection has most commonly seen in the departments of general surgery and pediatric clinics respectively, as expected. Therefore, it is essential to

know the microorganisms isolated from wounds in pediatric cases in terms of empirical treatment.
In this study, we aim to evaluate microorganisms isolated from wound cultures in pediatric cases retrospectively.
Materials and Methods
Specimens accepted to the Medical Microbiology laboratory from the samples taken from the wound infections in the pediatric clinic of Necmettin Erbakan University Meram Faculty of Medicine Hospital between 01.01.2016 and 31.12.2018 were included in the study. Routinely, blood agar and Eosin methylene blue (EMB) agar were cultured at 37°C for 24 hours. Microorganisms growth and thought to be active in cultures have been identified by conventional methods and MALDI-TOF MS system/VITEC MS system (BioMerieux, France).

Results
Of the 45 microorganisms isolated from wound cultures, the most frequent one was *Pseudomonas aeruginosa* with 35.5% of them (n=16). Speaking of other species, 20% were *Acinetobacter baumannii* (n=9), 13.3% were *Candida spp.*(n=6), 11% were *Klebsiella pneumoniae* (n=5), 8.8% were *Escherichia coli* (n=4), 8.8% were *Staphylococcus aureus* (n=4) and 2.2% were *Achromobacter denitrificans* (n=1).

Conclusion
Consequently, it was concluded that *P. aeruginosa* and *A. baumannii* were the most common germs growth in wound cultures. Hence this fact should be taken into consideration while starting empiric antibiotherapy to children with wound infection.
It is common information that isolated microorganisms may differentiate according to studying center and laboratories.

Keywords: *Wound culture, pediatrics, reproductive microorganisms*.

Introduction
Nowadays, thanks to the advancements in the follow-ups and treatments of diseases, more patients have been hospitalized. Especially chronic diseases such as cancers, increases infection risk. In addition to long term hospitalizations for the treatment of diseases present in many patients with chronic diseases, they also increase the risk of infection development; especially in patients with immune deficiency and/or poor general status. These infections significantly affect morbidity and mortality, too. Bacteria are often blamed as infectious agents, but also fungi and other microorganisms can be involved. Therefore, it has a great importance to know the frequency of infectious agents in patient groups in terms of follow-up and treatment. (1-3)
Wound infections are important in follow-ups. Wound infections occur as a result of microorganisms settling and spreading by defeating the immune response (1-3).These infections vary greatly in terms of both the clinical picture and responsible microorganisms (4).Wound infections are one of the most common comorbid problems, especially in cases with surgery. But they are generally an important health issue in developing countries (5-6).
Although there is not much data in the literature about wound cultures in pediatric cases, it was found that wound infection has most commonly seen in the departments of general surgery and pediatric clinics respectively, as expected (7). Therefore, it is essential to know the microorganisms isolated from wounds in pediatric cases in terms of empirical treatment.

In this study, we aim to evaluate microorganisms isolated from wound cultures in pediatric cases retrospectively.

Materials and Methods

Specimens accepted to the Medical Microbiology laboratory from the samples taken from the wound infections in the pediatric department of Necmettin Erbakan University Meram Faculty of Medicine Hospital between 01.01.2016 and 31.12.2018 were included in the study. Routinely, blood agar and Eosin methylene blue (EMB) agar were cultured at 37°C for 24 hours. Microorganisms growth and thought to be active in cultures have been identified by conventional methods and MALDI-TOF MS system/VITEC MS system (BioMerieux, France).

Results

Of the 45 microorganisms isolated from wound cultures, the most frequent one was *Pseudomonas aeruginosa* with 35.5% of them (n=16). Speaking of other species, 20% were *Acinetobacter baumannii* (n=9), 13.3% were *Candida spp*.(n=6), 11% were *Klebsiella pneumoniae* (n=5), 8.8% were *Escherichia coli* (n=4), 8.8% were *Staphylococcus aureus* (n=4) and 2.2% were *Achromobacter denitrificans* (n=1). The microorganisms isolated according to years shows in Table 1.

Discussion

Defining the factors of nosocomial infections and starting appropriate empiric antibiotherapy isa crucial step of the treatment. The most important step is cultivation and antibiogram. Wound culture is also one of them. However it may not always be possible to identify the responsible agent of infection, and also sometimes treatment may be urgent and required without waiting for the culture result. Thus, it is important to know the regional infectious agents.

There are several studies investigating the site of wound infection in children. In a study, *Escherichia coli* (28.5%) was the first among the isolated microorganisms; followed by *Enterobacter aerogenes* (15.6%), *S. aureus* (14.8%) and *P. aeruginosa* (14%) (7). In a study performed in the pediatric burn unit of Şişli Etfal Training and Research Hospital, *P. aeruginosa* (%38.1) was the most common one, then *Candida spp.* (%19.0) and *S. aureus* were isolated. This was followed by *Klebsiella pneumoniae* and other microorganisms (8). In another study, *Pseudomonas aeruginosa* was most commonly isolated as wound site infections. Other factors followed this (9).In our study, *P. aeruginosa* and *A. baumannii* were isolated in more than 50% of wound cultures, and *Candida spp*. isolated.

As a result, it was concluded that *P. aeruginosa* and *A. baumannii* were most common in wound infections and proper antibiotherapy should be taken into consideration.

Sources:

1. *Barbul A. Wound healing. In: Brunicardi FC ed. Schwartz's Principles of Surgery. 8th ed. New York: McGraw-Hill, 2005:223-49.*
2. *Peel ALG. Definition of infection. In: Taylor EW ed. Infection in Surgical Practice. Oxford: Oxford University Press, 1992:82-7.*
3. *Uzunköy A. Cerrahi alan infeksiyonları. Risk faktörleri ve önleme yöntemleri. Ulus Travma Dergi 2005; 11:269-81.*
4. *Bilgehan H. Klinik Mikrobiyolojik Tanı. 5.baskı. İzmir: Barış Yayınları, 2009.*
5. *Özkan S., Özkan F.C., İlçe hastanesinde genel cerrahi spektrumu. Ulusal Cerrahi Dergisi 2002;18:122-26.*

6. *Koneman EW, Stephan DA, Janda WM, Schreckenberger PC, Winn WC. Diagnostic Microbiology. 4th Ed. Philadelphia: Lippincott Co, 1992.*
7. *S. Doğan, N. Paköz, M. Aral Laboratuvarımıza gönderilen yara yeri örneklerinden izole edilen mikroorganizmalar ve antibiyotiklere direnç durumları. Türk Mikrobiyol Cem Derg (2010) 40 (4): 243–9.*
8. *Diler B, Dalgıç N, Karadağ ÇA, Dokucu Aİ. Bir pediatrik yanık ünitesinde epidemiyoloji ve enfeksiyonlar: Üç yıllık deneyimimiz. Bir Pediatrik Yanık Ünitesinde Epidemiyoloji ve Enfeksiyonlar: Üç Yıllık Deneyimimiz. J Pediatr Inf 2012; 6: 40-5.*
9. *Akçay A, Türel Ö, Tuğcu D, Aydoğan G, Kazancı S, Akıcı F, Şalcıoğlu Z, Özlü N, Şen H, Ulucaklı Ö, Şiraneci R. Çocuk hematoloji-onkoloji hastalarına ait klinik örneklerden izole edilen bakterilerin ve antibiyotik duyarlılıklarının incelenmesi. JOPP Derg 2011;3(2):68-73.*

Isolated microorganisms	**2016 year** n-%	2017 **year** n-%	2018 **year** n-%	**Total** n-%
P. aeruginosa	6 - 40%	3 - 23.07%	7 – 41.17%	16 – 35.5%
A. baumannii	4 – 26.66%	-	5 – 29.41%	9 - 20%
Candida spp.	2 – 13.33%	2 - 15.38%	2 – 11.76%	6 – 13.3%
K. pneumoniae	1 – 6.66%	3 - 23.07%	1 – 5.88%	5 – 11%
E. coli	1 - 6.66%	3 – 23.07%	-	4 – 8.8%
S. aureus	-	2 - 15.38.%	2 – 11.76%	4 - 8.8%
A.denitrificans	1 – 6.66%	-	-	1 - 2.2%
Total	15	13	17	45

Table 1. The microorganisms isolated according to years.

FT75

Microorganisms Isolated From Blood Cultures in Pediatrics Clinic

Metin Doğan[1], Muhammed Yusuf Ozan Avcı[2]

[1.] Necmettin Erbakan University, Meram Faculty of Medicine, Department of Medical Microbiology / Konya

[2.] Necmettin Erbakan University, Meram Faculty of Medicine, Department of Pediatrics / Konya

Amaç

Kan ve dolaşım sistemi enfeksiyonları morbidite ve mortaliteyi etkileyen en önemli enfeksiyonlardır. Mortalite ve morbiditesi yüksek olmasından dolayı sepsis etkeni mikroorganizmaların tanımlanması, hastanın tedavisi açısından önemli olup tanı ve tedavide en değerli test kan kültürüdür. Bu çalışmada kan kültürlerinden izole edilen mikroorganizmaların retrospektif olarak değerlendirilmesi amaçlanmıştır.

Araçlar ve Yöntemler

Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi Hastanesi Pediatri kliniğinde yatan hastalardan alınan ve Tıbbi Mikrobiyoloji laboratuarına 01.01.2017 – 31.12.2017 tarihleri arasında kabul edilen örneklerden üreme saptanan 1004 hastaya ait kan kültürleri çalışmaya alınarak retrospektif olarak incelenmiştir. Alınan kültürler otomatize sistemle (BacT/Allert 3D, BioMerieux, Fransa) inkübe edilerek değerlendirilmiştir. İnkübasyon süresince pozitif sinyal veren şişelerden Gram boyama yapılarak sonuç ilgili kliniğe ön bilgi olarak verilmiştir. Daha sonra örnekler %5 koyun kanlı agar ve eosin methylene blue (EMB) besiyerine ekilmiş ve 37 °C'de 24-48 saat inkübe edilmiştir. Kültürde üreyen mikroorganizmalar konvansiyonel yöntemlerle ve MALDI-TOF MS/ VITEC 2 sistemiyle (BioMerieux, Fransa) tanımlanmıştır.

Bulgular

Kan kültürlerinden izole edilen 1004 mikroorganizmanın 568'i (%56.6) koagülaz negatif stafilokok (KNS) olarak tanımlanmış, 125'i (%12.5) *K.pneumoniae*, 50'si (%5.0) *S. aureus*, 50'si (%5.0) *Candida* spp., 30'u (%3) *Acinetobacter* spp., 28'i (%2.8) E.coli, 27'si (%2.7) *Entrococcus spp*., 25'i (%2.5) *Pseudomonas* spp., 16'sı (%1.6) *Enterobacter cloacae*., 85'i (%8.5) diğer mikroorganizmalar olarak tanımlanmıştır.

Sonuç

Laboratuarımızda kan kültürlerinde en sık olarak KNS izole edilmiş olup bu mikroorganizmaların çoğunun tek kan kültüründe izole edildiği dikkate alınırsa çoğunun kontaminant olabileceği düşünülmektedir. Bu yüzden kan kültürlerinin en az iki set halinde alınmasının doğru tanı açısından faydalı olacağı kanaatine varılmıştır. Ayrıca *K.pneumoniae*, *S. aureus*, *Candida* spp. gibi mikroorganizmaların sepsis etkeni olabileceği de akılda tutulmalıdır.

Aim

Blood and circulatory system treatments are the most important substances that clear morbidity and mortality. Blood culture in the diagnosis and treatment of sepsis causative microorganisms prior to their high mortality and morbidity, whether they are leading or not, is the blood culture. The aim of this study was to retrospectively isolate microorganisms isolated from blood cultures.

Materials and Methods

Blood cultures of 1004 patients from the inpatients of Necmettin Erbakan University Meram Medical Faculty Hospital Pediatric Clinic, who were admitted to the Medical Microbiology Laboratory between 01.01.2017 and 31.12.2017, were analyzed retrospectively. Cultures were evaluated by incubation with an automated system (BacT / Allert 3D, BioMerieux, France). Gram staining was obtained from the vials that gave positive signals during the incubation period and the result was given as a preliminary information to the relevant clinic. Samples were then seeded in 5% sheep blood agar and eosin methylene blue (EMB) medium and incubated at 37 ° C for 24-48 hours. Cultured microorganisms were identified by conventional methods and MALDI-TOF MS / VITEC 2 system (BioMerieux, France).

Results

Of the 1004 microorganisms isolated from blood cultures, 568 (56.6%) were identified as coagulase negative staphylococci (CNS), 125 (12.5%) were K.pneumoniae, 50 (5.0%) were S. aureus, 50 (5.0%) were Candida spp., 30 (3%) Acinetobacter spp., 28 (2.8%) E.coli, 27 (2.7%) Entrococcus spp., 25 (2.5%) Pseudomonas spp., 16 Enterobacter cloacae. (85%) were identified as other microorganisms.

Conlusion

In our laboratory, most common CNS was isolated in blood cultures and considering that most of these microorganisms were isolated in single blood culture, most of them were thought to be contaminant. Therefore, at least two sets of blood cultures were considered to be beneficial for accurate diagnosis. In addition, *K.pneumoniae, S. aureus, Candida spp*. It should be kept in mind that microorganisms such as sepsis may be the causative agent.

Keywords: *Blood culture, pediatrics, reproductive microorganisms.*

Introduction

Nowadays, hospitalization rates of patients are increasing in parallel with the improvements in care and treatment. Long-term hospitalizations for the treatment of chronic diseases, especially cancer, etc., increase the risk of infection in all patients, especially in immunocompromised patients and patients with poor general status. Nosocomial infections are more common due to the administration of broad-spectrum antibiotics to patients, life support through invasive procedures, and longer hospital stay (1,2).

Blood and circulatory system infections are the most important infections affecting morbidity and mortality. Increased invasive procedures to diagnosis and treatment, increased cancer surgery and organ transplantation, and widespread use of immunosuppressive therapies are some of the risk factors for blood and circulatory system infections (3). Blood culture is an important diagnostic method used to isolate microorganisms that cause bacteremia and is an important in terms of guiding the treatment (4,5).

Nosocomial infections agents, especially sepsis agents, vary from country to country, from hospital to hospital, depending on the country's development status, antibiotic use strategies, and general condition and characteristics of patients. Even in different hospital units, different microorgansms can cause infections. Determining the diversity of microorganisms growing in blood cultures and determining antibiotic susceptibilities are important to precautions effective infection control measures, to establish empirical treatment protocols and initiate appropriate treatment (6).

Because of high mortality and morbidity, identification of microorganisms causing sepsis is important for the treatment of the patient. Blood culture is the most valuable test for diagnosis

and treatment. The aim of this study was to evaluate microorganisms isolated from blood cultures retrospectively.

Materials and methods

Blood cultures accepted to the Medical Microbiology Laboratory that obtained from patients hospitalized in the pediatric clinic of Necmettin Erbakan University Meram Medical Faculty Hospital between 01.01.2017 and 31.12.2017 was included in this study. Blood culture results of 1004 patients were analyzed retrospectively. Cultures were made with the incubation in automated system (BacT / Allert 3D, BioMerieux, France). Gram staining was made from the vials that gave positive signals during the incubation period and the result was given as a preliminary information to the relevant clinic. Samples were then passaged to 5% sheep blood agar and eosin methylene blue (EMB) medium and incubated at 37 ° C for 24-48 hours. Cultured microorganisms were identified by conventional methods and MALDI-TOF MS / VITEC 2 system (BioMerieux, France).

Results

Of the 1004 microorganisms isolated from blood cultures, 568 (56.6%) were identified as coagulase negative staphylococci (CNS), 125 (12.5%) were *K.pneumoniae*, 50 (5.0%) were *S. aureus*, 50 (5.0%) *Candida* spp., 30 (3%) were identified as *Acinetobacter* spp., followed by other microorganisms. The microorganisms isolated according to years shows in Table 1.

Discussion

Bloodstream infections are the most frequent infections in pediatric patients and one of the most serious and potentially life-threatening infectious diseases. Early diagnosis and therapy are essential for the prevention of morbidity and mortality (7).

In the majority of cases, antimicrobial therapy must be admitted empirically in these patients generally. The accuracy in predicting the pathogen and antimicrobial resistance patterns is crucial for successful therapy (8). For this reason, it is necessary to know the microorganisms that grow in the hospital. Growing microorganisms vary according to hospitals.

In a study, which researched nosocomial bloodstream ınfections of pediatric patients in Brazilian, ıt is reported that the most common isolated pathogens were coagulase-negative staphylococci (CoNS) (21.3%), *Klebsiella* spp. (15.7%), *Staphylococcus aureus* (10.6%), and *Acinetobacter* spp. (9.2%) (9). It is reported that S. aureus to be the most common cause of nosocomial bloodstream infections, followed by *Klebsiella pneumoniae* and coagulase-negative staphylococci, respectively in a study (10).

In Gaziantep Children's Hospital, CNS was most frequently isolated in blood cultures, followed by *Salmonella* spp, *S. aures*, *Klebsiella* and streptococci species, respectively (11). In another study, *E.coli*, *Klebsiella* and CNS were the most frequently isolated microorganisms (12). It is reported by Birol et al. that the most common isolates included 1000 (35.6%) coagulase-negative staphylococci 782 (27.8%) *S. aureus* and 303 (10.8%) *Escherichia coli* (13).

As seen in the studies, isolated microorganisms vary according to regions. In this study, the most frequently isolated microorganisms were CNS, *K.pneumoniae*, *S. aureus*, *Candida* spp., *Acinetobacter* spp.

Blood culture is one of the most important tests used in the diagnosis of sepsis. In our laboratory, most common CNS was isolated in blood cultures. Considering that most of these microorganisms were isolated in single blood culture, most of them were thought to be contaminant. Therefore, at least two sets of blood cultures should obtained to be beneficial to accurate diagnosis. In addition, It should be kept in mind may be cause to sepsis of *K. pneumoniae*, *S. aureus*, *Candida* spp., and other microorganisms.

References

1. *Öncül A, Koçulu S, Elevli K. Bir devlet hastanesinin yoğun bakım ünitelerinde kazanılan hastane enfeksiyonlarının epidemiyolojisi. Şişli Etfal Hastanesi Tıp Bülteni 2012; 46: 60-6.*
2. *Orucu M, Geyik MF. Yoğun bakım ünitesinde sık görülen enfeksiyonlar, Düzce Tıp Fakültesi Derg 2008;1:40-3.*
3. *Sevim S, Öztürk Ş, Coşkuner A, ve ark. Bactec kan kültür sistemi ile izole edilen mikroorganizmaların değerlendirilmesi. İnfeksiyon Dergisi 2007;21:135-40.4. Yüce P, Demirdağ K, Kalkan A ve ark. Kan Kültürlerinde izole edilen mikroorganizmalar ve antibiyotik duyarlılıkları. ANKEM Derg 2005;19:17-21.*
5. *Gülfem E. 'Kan kültüründe üreyen izolatların dağılım ve antibiyotik duyarlılık profilinin İncelenmesi. The Medical Bulletin of Haseki. 2013; 51: 151.*
6. *Mehli M, Gayyurhan ED, Zer Y, Akgün S, Akın EÖ, Balcı İ: Gaziantep Üniversitesi Tıp Fakültesi hastanesinde kan kültürlerinden izole edilen mikroorganizmalar ve antibiyotik duyarlılıkları, İnfeksiyon Derg 2007;21(3):141-5.*
7. *Gray J, Gossain S, Morris K. Three-year survey of bacteremia and fungemia in a pediatric intensive care unit. Pediatr Infect Dis J 2001; 4: 416–21.*
8. *Berner R, Sauter S, Duffner U, Brandis M, Niemeyer CM. Bacteremic episodes in pediatric oncologic patients, especially caused by the Streptococcus viridans group. Klin Padiatr 1998; 4: 256–60.*
9. *Pereira CAP, Marra AR, Camargo LFA, Pignatari ACC, Sukiennik T, et al. (2013) Nosocomial Bloodstream Infections in Brazilian Pediatric Patients: Microbiology, Epidemiology, and Clinical Features. PLOS ONE 8(7): e68144. https://doi.org/10.1371/journal.pone.0068144*
10. *Ben Jaballah N, BouziriA, Mnif K, Hamdi A, Khaldi A, KchaouW(2007) Epidemiology of hospital-acquired bloodstream infections in a Tunisian pediatric intensive care unit: a 2-year prospective study. AmJ InfectControl 35:613–618.*
11. *Yiş R. Güneydoğu Anadolu Bölgesi'nde bir çocuk hastanesinde kan kültürü sonuçlarının değerlendirilmesi, Türk Ped Arş 2015; 50: 102-7.*
12. *Yılmaz S, Gümral R, Güney M, Bedir O, Güçlü AÜ, Duyan S, Başustaoğlu AC. İki yıllık dönemde kan kültürlerinden izole edilen mikroorganizmalar ve antibiyotik duyarlılıkların değerlendirilmesi. Gülhane Tıp Derg 2013; 55: 247-252.*
13. *Şafak B, Kılınç O. Microorganisms Isolated From Blood Cultures During 2010-2015 and Their Antimicrobial Susceptibilities. Klinik Dergisi 2016; 29(2): 60-4*

Table 1. The microorganisms isolated according to years.

Isolated microorganisms	**2016 year** n-%	2017 **year** n-%	2018 **year** n-%	**Total** n-%
CNS*	120 - 49.8%	262 - 58.4%	186 - 59.2%	50 - 56.6%
K.pneumoniae	43 - 17.9%	49 - 10.9%	33 - 10.5%	125 - 12.5%
S. aureus	9 - 21.7%	33 - 7. %	8 - 2.5%	50 - 5%
Candida spp.	24 - 10%	17 - 3.8%	9 - 2.9%	50 - 5%
Acinetobacter spp.	3 - 1.3%	15 - 3.4%	12 - 3.8%	30 - 3%
E. coli	8 - 3.3%	12 - 2.7%	8 - 2.5%	28 - 2.8%
Enterococcus spp.	8 - 3.3%	10 - 2.2%	9 - 2.9%	27 - 2.7%
P. aeruginosa	7 - 2.9%	11 - 2.5%	7 -2.2%	25 -2.5%
E. cloacae	6 - 2.5%	6 - 1.3%	4 - 1.3%	16 - 1.6%
Others	13 - 5.4%	34 - 7.6%	38 - 12.1%	85 -2.5%
Total	241	449	314	1004

* Coagulase negative staphylococci

FT78

The Oxidative Stress And Antioxidant Status Childhood With İmmune Thrombocytopenic Purpura

F. İlknur Varol[1], Saadet Akarsu[2], Bilal Üstündağ

[1]Pediatric Department. College of Medicine .Inonu University-Malatya.Turkey

[2]Pediatric Department. College of Medicine. Fırat University-Elazığ.Turkey

[3]Biochemistry Department. College of Medicine. Fırat University-Elazığ.Turkey

Introduction

The most common cause of acute onset thrombocytopenia in a healthy child is acute immune thrombocytopenic purpura (ITP). Thrombocytopenia is defined as a platelet count below 150x109 / L (1). Immune thrombocytopenic purpura is an autoimmune disease characterized by immune-mediated platelet destruction in the reticuloendothelial system (RES) (2). Other mechanisms that have been suggested to be responsible include impaired platelet production (3), complement-dependent mechanism thrombolysis (4), and antibody-dependent oxidant product hydrogen peroxide causing cellular damage (5).

Approximately 75-80% of the clinical cases of immune thrombocytopenic purpura have been classifiied as acute (self-limiting within six months) and 20-25% as chronic (lasting more than six months) (6)

The aim of the treatment is to inhibit the development of antibodies against platelets by suppressing the immune system and stop the breakdown of platelets in the spleen. Corticosteroids, intravenous immunoglobulin (IVIG), anti-D immunoglobulin and rituximab can be used in the treatment (7). High dose MP or IVIG is preferred as the initial treatment for childhood ITP. Since there is no difference in success rates in treatment, the choice is made on the basis of costs and side effects.

Oxidative damage plays a role in the pathogenesis of autoimmune diseases. Oxidative stress and free radicals have been suggested to be responsible for the pathogenesis and prognosis of ITP. Increased lipid peroxidation and decreased antioxidant capacity in ITP may play a significant role on antibodies bound to membrane lipids and platelet destruction (8).

In the literature, there is little information about oxidative stress and antioxidant defense mechanism in ITP (8). The aim of this study is to investigate the effects of oxidative stress level and different treatment options on antioxidant capacity in acute and chronic ITP and to show that whether the disease would be acute or chronic type can be predicted and the most appropriate choice of treatment can be defined by depending on the oxidative stress index (OSI) obtained during the diagnosis phase.

Materials and Methods

The study group consisted of 44 patients who were diagnosed with ITP in the outpatient clinic of the Department of Pediatric Hematology, Faculty of Medicine, Fırat University. The patients were divided into two groups as Group I: Acute ITP [n: 33] and Group II: Chronic ITP [n: 11]). According to the treatment, acute ITP group was divided into subgroups of Group Ia (MP [n: 21]), Group Ib (IVIG [n: 6]), Group Ic (MP + IVIG [n: 6]) and chronic ITP group was divided into subgroups of Group IIa (MP [n 5]), Group IIb (IVIG [n = 6]). Parents of the children diagnosed with immune thrombocytopenic purpura were informed about the study and their written consent was obtained. Approval was received by Fırat University

Clinical Research Ethics Committee.

Acute ITP was diagnosed by isolated thrombocytopenia (<150x109 / L), increased or normal megakaryocytes in the bone marrow, thrombocyte-associated IgG elevation, familial thrombocytopenia, drug intake, active inflammation, lack of blood transfusion or splenomegaly, and direct coombs test, and negative antinuclear antibody (22,23). Thrombocytopenia lasting longer than 6 months was defined as chronic ITP (2,4).

After the patients who admitted to the outpatient clinic had been diagnosed and given written permission, MP (30 mg / kg / day 3 days, 20 mg / kg / day 4 days, oral) and IVIG (1 g / kg / day 2 days) treatments were given (2,3). Drug preference was randomized. Total antioxidant capacity (TAOC) of the patients, who underwent treatment in our clinic, were measured before and after treatment.

The data were evaluated by using SPSS software. Data were expressed as mean ± standard deviation. One-way analysis of variance (ANOVA) and post-ANOVA tests were used to compare treatment modalities between groups and within groups, a value of $p < 0.05$ was considered statistically significant.

Results

Group I consisted of 33 cases, including 17 (53%) females and 16 (47%) males. Group II consisted of 11 cases, including 4 (36%) females and 7 (74%) males. The socio-demographic characteristics of the cases are given in Table I.

Pre- and post-treatment oxidative / anti-oxidative parameters of Group I, Group II and total cases are given in Table II. There were statistically significant differences between pre- and post-treatment levels of total peroxide, TAOC and OSI, in Group I ($p < 0.05$, $p < 0.001$, $p < 0.05$, respectively). There were statistically significant differences between pre and post treatment levels of total peroxide and OSI, in Group II ($p < 0.05$). There was a statistically significant difference between Group I and Group II in terms of pre-treatment levels of total peroxide ($p < 0.05$). There was a statistically significant difference between pre and post treatment levels of total peroxide, TAOC and OSI, in the total ITP group ($p < 0.05$, $p = 0.001$, $p = 0.001$, respectively).

The oxidative / anti-oxidative parameters of Group I according to treatment modalities are given in Table III. There were statistically significant differences between the pre and post treatment levels of total peroxide, TAOC and OSI, in Group Ib ($p < 0.05$). There was no statistically significant difference between pre and post treatment levels of total peroxide, in the other groups.

The oxidative / antioxidative parameters of Group II according to the treatment modalities are given in Table IV. There were statistically significant differences between pre and post treatment levels of total peroxide, TAOC and OSI in Group IIa ($p < 0.05$). There were no statistically significant differences between the pre and post treatment levels of total peroxide, TAOC and OSI, in Group IIb.

Discussion

ITP is an autoimmune disease that results in acute or chronic isolated thrombocytopenia. Oxidative stress, defined as the deterioration of the balance between oxidant and antioxidants in favor of oxidants, may play a role in the pathogenesis of autoimmune diseases (8).

In our study we found statistically significant differences between the pre and post treatment levels of total peroxide, in acute and chronic ITP groups ($p < 0.05$). In acute IT group, post treatment levels of total peroxide and OSI were significantly decreased and TAOC levels were significantly increased when compared to the pre treatment levels ($p < 0.05$, $p < 0.001$). In chronic ITP group, the post treatment levels of total peroxide and OSI were significantly

lower (p <0.05), while there was no statistically significant difference between the pre and post treatment levels of TAOC. When all patients were evaluated together, we found that the levels of total peroxide and OSI decreased (p <0.05, p = 0.001, respectively) and TAOC levels increased significantly after treatment (p = 0.001).

Polat et al. (8) investigated levels of lipid peroxidation, glutathione and ascorbic acid, in adult ITP patients. They found that lipid peroxidation levels were higher and glutathione and ascorbic acid levels were lower in the study group than the control group (p <0.05). Akbayram et al. (9) Found that malondialdehyde, total oxidant status and OSI were increased and TAOC decreased in children with acute and chronic ITP. Similarly, in our acute and chronic ITP cases and in our total patient group, oxidative parameters were significantly lower and anti-oxidative parameters were significantly higher after treatment.

When the acute ITP cases were compared according to the treatment modalities, we found that total peroxide levels decreased significantly after treatment in IVIG group (p <0.05). Total peroxide levels decreased also in MP and MP + IVIG groups, however the difference was not statistically significant. There was a statistically significant increase in TAOC after IVIG treatment (p <0.05), whereas the increase in TAOC in MP and MP + IVIG groups was not statistically significant. There was a statistically significant decrease in OSI (p <0.05) after treatment in IVIG group, whereas the decrease was not statistically significant, in MP and MP + IVIG groups. Our results suggest that IVIG treatment is more effective than MP treatment in decreasing the oxidative parameters and increasing the antioxidant parameters, in acute ITP cases.

When we compared the chronic ITP cases according to the treatment modalities we found that total peroxide levels were significantly decreased in MP and IVIG groups, however the decrease was statistically significant only in the MP group (p <0.05). OSI values also decreased after both modalities of treatment, however the difference was statistically significant only in MP group (p <0.05). There was an increase in TAOC after treatment in both modalities, but the difference was statistically significant only in the MP group (p <0.05). these results suggest that MP treatment is more effective than IVIG treatment, in decreasing oxidative stress and increasing antioxidant system, in chronic ITP cases.

Conclusion

In our study, we found that total peroxide and OSI levels in acute and chronic ITP were higher before treatment and we think that oxidative damage may play a role in the pathogenesis of ITP. We found statistically significant differences between total peroxide levels before and after treatment in acute and chronic ITP cases. In conclusion, we think we can predict whether the disease would be acute or chronic, by measuring plasma oxidant parameters at the beginning of the disease. We found significant decreases in the levels total peroxide and OSI and significant increases in TAOC levels with IVIG treatment in acute ITP and in with MP chronic ITP. We suggest to prefer IVIG treatment in cases we predicted to be acute ITP and MP treatment in cases we predicted to be chronic ITP.

References

1- *Montgomery RR, Scott JP. Platelet and Blood Vessel Diseases. Behram RE, Kliegman, Jenson HB (editors). Nelson Textbook of Pediatrics. 17th Edition, Philadelphia; Saunders, 2004;1670-71.*

2- *Lowe EJ, Buchanan GR. Idiopathic thrombocytopenic purpura diagnosed during the second decade of life. J Pediatr 2002;141:253-58.*

3- *Ballem PJ, Segal GM, Stratton JR, Gernsheimer T, Adanson JW, Slichtee SJ. Mechanisims of thrombocytopenia in chronic autoimmune thrombocytopenic purpura. Evidence of both impaired platelet production and increased platelet clearance. J Clin Invest 1987;80:33-40.*

4- *Dilber C. İdiopatik Trombositopenik Purpura. Türkiye Klinikleri Pediatrik Bilimler Pediatrik Hematoloji Özel sayısı 2005;1:48-51.*
5- *Wentworth PJ, Jones LH, Wentworth AD, et al. Antibody catalysis of oxidation of water. Science 2001;293:1806-11.*
6- *Provan D, Newland AC. Primary immune thrombocytopenia. In: Hoffbrand AV, Catovsky D, Tuddenham E, Green AR, editors. Postgraduate Haematology. 6th ed. London: Wiley-Blackell; 2011. p. 928-39.*
7- *Osborn LM, Neunert CE. Management of newly diagnosed immune thrombocytopenia: can we change outcomes? Blood Adv 2017; 1(24): 2295-301.*
8- *Polat G, Tamer L, Tanrıverdi K, Gürkan E, Baslamıslı F, Atık U. Levels of malondialdehyde, glutathione and ascorbic acid in idiopathic thrombocytopenic purpura. East Afr Med J 2002;79:446-49.*
9- *Akbayram S, Doğan M, Akgün C, et al. The association of oxidant status and antioxidant capacity in children with acute and chronic ITP. J Pediatr Hematol Oncol. 2010 May;32(4):277-81.*

Table 1: Sociodemographic characteristics of the patients

	Group I (acute)	Group II (chronic)	Total
Age(mean ± SD, months) (low-high)	66.80±7.48 (2-192)	82.45±18.99 (2-168)	70.71±7.30 (4-192)
Gender n (%)			
Male	16 (47)	7 (74)	23 (52)
Female	17 (53)	4 (36)	21 (48)
Duration of the disease (months) Low- High	1.37±0.17 0.5-5	36. 27±5.35 16-60	10.10±2.64 0.5-60

n: number, mean: arithmetic mean, SD: Standard Deviation

Table 2: Oxidative/Antioxidative parameters of the patients

	GROUP I (Acute ITP)			GROUP II (Chronic ITP)			TOTAL		
	Pre-treatment	Post-treatment	p	Pre-treatment	Post-treatment	p	Pre- treatment	Post-treatment	p
Total peroxide ($\mu molH_2O_2/L$)	49.70±2.78*	42.00±3.60	<0.05	60.80±3.77*	49.38±3.76	<0.05	52.49±2.38	43.90±2.88	<0.05
Low-High	21.89-84.00	10.00-79.48		28.50-72.50	23.00-71.37		21.89-84.00	10.00-79.48	
TAOC (mmolTroloxequivalent/L)	0.99±0.01	1.13±0.03	<0.001	1.04±0.01	1.07±0.03	>0.05	1.00±0.01	1.12±0.02	0.001
Low- High	0.73-1.18	0.93-1.73		0.93-1.16	0.96-1.29		0.73-1.18	0.93-1.73	
OSI(AU)	5.13±0.34	3.92±0.37	<0.05	5.83±0.35	4.67±0.43	<0.05	5.31±0.27	4.10±0.30	0.001
Low- High	2.07-9.78	0.81-8.00		2.50-6.90	2.18-7.41		2.07-9.78	0.81-8.00	

*: Comparison of pre-treatment levels of total peroxide in Group 1 and Group II ($p<0.05$)

TAOC: Total Antioxidant Capacity, OSİ: Oxidative Stress Index

Table III. Oxidative / anti-oxidative parameters in patients with acute ITP

	Pre treatment			Post treatment			P<0.05
	MP(Ia)	IVIG(Ib)	MP+IVIG (ıc)	MP (Id)	IVIG (Ie)	MP+IVIG (If)	
Total peroxide (µmol H2 O2/L)	52.59±5.27	46.82±3.80	50.12±5.38	47.66±5.85	31.26±4.30	51.28±8.02	Ib-Ie
Low- High	21.89-84	24.00-71.00	35.48-69.64	10.00-79.48	11.78-61.27	19.17-71.00	
TAOK (mmolTrolox equivalent/L)	1.02±0.02	0.98±0.03	0.95±0.03	1.07±0.36	1.22±0.05	1.06±0.05	Ib-Ie
Low- High	0.89-1.18	0.73-1.18	0.82-1.06	0.93-1.36	1.02-1.73	0.96-1.30	
OSI (AU)	5.23±0.58	4.95±0.55	5.35±0.76	4.58±0.61	2.68±0.41	5.37±0.83	Ib-Ie
Low- High	2.07-9.49	2.43-9.75	3.51-8.52	0.96-8.05	0.81-5.89	1.48-6.97	

Table 4. Oxidative / anti-oxidative parameters in patients with chronic ITP

	Pre treatment		Post treatment		P<0.05
	MP (IIa)	IVIG (IIb)	MP (IIc)	IVIG (IId)	
Total peroxide (µmol H2 O2/L)	60.43±8.14	61.27±2.72	45.00±6.05	53.03±4.66	IIa-IIc
Low- High	28.50-72.57	53.00-59.00	23.00-58.00	39.00-71.30	
TAOK (mmolTrolox equivalent/L)	1.07±0.02	1.02±0.02	1.11±0.05	1.04±0.04	IIa-IIc
Low- High	1.00-1.16	0.93-1.10	0.99-1.29	0.96-1.25	
OSI (AU)	5.62±0.77	6.00±0.24	4.05±0.57	5.18±0.58	IIa-IIc
Low- High	2.58-6.90	5.18-6.69	2.18±5.61	3.45-7.41	

FT79

Postnatal Outcomes of Intrauterine Transfusion Infants Due to Immun-Hemolytic Disease

Fatma Hilal Yılmaz[1], Nazlı Dilay Gültekin[2]

[1.] Necmettin Erbakan University Meram Faculty of Medicine, Department of Newborn, Konya

[2.] Health Sciences University Van Training and Research Hospital, Department of Newborn, Van

İntroduction:

Immune-hemolytic disease of fetus and newborn is the clinical picture where maternal specific IgG autoantibodies passing through placenta bind to erythrocytes and result in progressive fetal hemolysis. This hemolysis can lead to fetal anemia. In severe cases, can cause hydrops fetalis and intrauterine death. The use of Rh immune globulin to prevent susceptibility of Rhesus (Rh) negative pregnant women has reduced the immune-hemolytic disease of the fetus to 1 / 300-1 / 600 live births (1). Despite advances in the use of Rhesus immunoglobulin prophylaxis, perinatal mortality remains approximately 1% in high resource countries and as high as 14% in low resource countries (2,3). These outcomes are preventable with fetal blood sampling and intrauterine transfusion (IUT), which have greatly im- proved survival in affected pregnancies, including those with fetal hydrops, and those with an onset < 22 weeks' gestational age. The aim of this study was to evaluate the postnatal outcomes of newborns who received transfusion in the intrauterine period due to immun-hemolytic disease.

Method:

This study was performed retrospectively between March 2018 and July 2019. Infants who underwent erythrocyte transfusion during the intrauterine period with the diagnosis of immune-hemolytic disease and followed in the neonatal intensive care unit were included. Demographic data of the patients, APGAR scores at 1 and 5 minutes, prenatal erythrocyte transfusion, exchange transfusion and postnatal erythrocyte transfusion requirement, birth hemoglobin and bilirubin levels and reticulocyte count, highest bilirubin level, intrauterine transfusion number, duration of phototherapy, hydrops status, discharge status duration and mortality rate were recorded. Data analysis and report writing operations were performed on computer. Median (min-max), frequency distributions and percentages were used to summarize the data. Mann-Whitney U test was used for comparisons between the groups and $p < 0.05$ was accepted for statistical significance.

Results:

A total of 16 infants were included in the study. The median gestational week was 34 (28-37) and the median birth weight was 2395 (1420-2985) grams. Nine (56.25%) of the babies were female and 7 (43.75%) were male. All were born by cesarean section. The median Apgar 1st and 5th minute scores were 5 (0-6) and 6 (3-10), respectively.

The median hemoglobin median was 8 (4-18), reticulocyte count 8.5 (0-52), the highest bilurubin level median was 10 (4-20) and median phototherapy time was 4.5 (1-6) days. Ten patients had 3 or less intrauterine transfusions and 6 patients had more than 3 intrauterine transfusions. Exchange transfusion was performed a maximum of 2 times in 10 (62.5%) infants. Postnatal erythrocyte transfusion was performed to 6 (37.5%) infants due to anemia during the period until discharge. 10 (62.5%) of the infants had hydrops findings. The median discharge time was 19 (1-78) days. A total of 2 infants (12.5%) died (Table-1).

According to Mann-Whitney U test between groups, there was a significant difference in apgar 1 and birth hemoglobin due to non-exchange infants (U = 12.500, p = 0.049; U = 6500, p = 0.01) (Table-2).

Discussion:

Red-cell alloimmunization is an immune disorder due to an incompatibility between maternal and fetal red blood cell antigens (4). Antigen D incompatibility is the most frequent cause of red-cell alloimmunization because of its high prevalence and immunogenicity. Fetal erythrocytes coated with IgG antibodies become attached to the Fc receptors on macrophages in the reticuloendothelial system, primarily in the spleen, and become phagocytosed. This results in varying degrees of hyperbilirubinemia, fetal anemia, tissue hypoxia, extramedullary hematopoiesis, hepatosplenomegaly, fetal hydrops, and possibly intrauterine fetal demise. Nowadays, mid-cerebral artery peak systolic velocity is measured by Doppler ultrasound, which is a non-invasive method, and the severity of fetal anemia is determined and IUT is applied when necessary. Antigen D incompatibility is the most frequent cause of red-cell alloimmunization because of its high prevalence and immunogenicity. However, red blood cells have more than 400 other surface antigens, at least 43 of which being capable of producing hemolytic disease (5). Routine administration of antenatal and postpartum Rhesus (Rh) immunoglobulin has resulted in a shift of cases of red-cell alloimmunization to other antibodies. In our study, most patients experienced hemolysis due to Rh incompatibility.

1 and 5 minute apgar scores were correlated with the severity of hemoslysis. Therefore, the first minute Apgar score was significantly lower in infants receiving exchange transfusion after delivery. It is suggested that Rh hemolytic disease, which is severe enough to require IUT in intrauterine period, is also seen as severe hemolytic disease in postnatal period and the need for blood exchange is higher in them. The result is similar in the study of Çetinkaya et al. (6). However, in retrospective studies of Gobalakichenane et al. Rh hemolytic disease was detected in 28 infants and 6 patients were treated with UT and only 1 infant (1 infant). 17%) postnatal blood. It was reported that the need for change. In the same study, it was reported that there were 22 infants without UT and 6 (27%) had postnatal blood exchange, and that blood exchange decreased during postnatal period due to antenatal treatment. Differences between these studies may be due to differences in patient numbers and study criteria (7).

Most of the patients (62.5%) did not need erythrocyte transfusion in the postanatal period. There was no difference in the frequency of transfusion between the exchange and non-exchange groups. In the study of Şavklı et al., A similar rate of transfusion was performed. This was not needed in all patients. In our opinion, this is related to the severity of hemolysis and the success of IUT. Our mortality rate is similar to the literature (87.5%) (8,9). Here we should emphasize that we only evaluate postnatal outcomes of live-born babies.

Conclusion:

Infants who receive intrauterine transfusion due to immune-hemolytic disease are born to preterm birth and cesarean rate is high in these infants. Exchange requirement is increased in patients with more severe hemolysis. Patients who will need to exchange are coming to a worse world. The frequency of intrauterine transfusion does not increase mortality.

References

1- *Hendrickson JE, Delaney M. Hemolytic disease of the fetus and newborn: modern practice and future investigations. Transfus Med Rev. 2016;Oct;30(4):159-64.*

2- *Urbaniak SJ, Greiss MA. RhD haemolytic disease of the fetus and the newborn. Blood Rev.2000 Mar; 14(1): 44–61.*

3- *Zipursky A, Paul VK. The global burden of Rh disease. Arch Dis Child Fetal Neonatal Ed. 2011 Mar; 96(2):F84–5.*
4- *Choavartana R, Uer-Areewong S, Makanantakosol S. Fetomaternal transfusion in normal pregnancy and during delivery. J Med Assoc Thai 1997;80(2):96–100.*
5- *Lobo GA, Nardozza LMM, Camano L. Non-anti-D antibodies in red cell alloimmunization. Int J Gynecol Obstet 2006;94:139–40.*
6- *Çetinkaya M, Özkan H, Köksal N, Akkuş H, Kimya Y. Rh Hemolitik Hastalığında i intrauterin Transfüzyonun Neonatal Sonuçlara Etkisi. Güncel Pediatri 2010; 8: 1-6*
7- *Gobalakichenane P, Lardennois C, Gale`ne-Gromez S, Brossard V, Marpeau L, Verspyck E et al. Perinatal management and neurological outcome of infants with Rhesus hemolytic disease. Gynecol Obstet & Fertil 2008;36:984-90.*
8- *Şavkli AÖ, Çetin BA, Acar Z, Özköse Z, Behram M, Çaypinar SS, Tayyar A, Yüksel MA. Perinatal outcomes of intrauterine transfusion for foetal anaemia due to red blood cell alloimmunisation. J Obstet Gynaecol. 2019 Aug 29:1-5.*
9- *Potdar O, Narkhede HR, Satoskar PR. Perinatal Outcome After Intrauterine Transfusion in Rh Isoimmunized Mothers. J Obstet Gynaecol India. 2019 Apr;69(2):123-128.*

Table 1. Demographic, laboratory and clinical data of patients

Characteristics	**Patients (n=16)**
Gestational Age (week) *	34 (28-37)
Birth weight (gr)*	2395 (1420-2985)
Gender**	
Famele (n;%)	9 (56,25)
Male (n;%)	7 (43,75)
Length of stay in NICU (days)	19 (1-78)
Cesarean section, (n;%) **	16(100)
Apgar score 1st minute	5(0-6)
Apgar score 5.min	6(3-10)
Birth hemoglobin, median (min-max) *	8 (4-18)
Reticulocyte count, median (min-max) *	8.5 (0-52)
Highest bilurubin level, median (min-max) *	10 (4-20)
Phototherapy time, median (min-max) *	4.5 (1-6)
Number of intrauterine transfusions (more than 3), (n;%) **	6 (%37,5)
Exchange transfusion, (n;%) **	10(%62,5)
Postnatal erythrocyte transfusion, (n;%) **	6 (%37,5)
Hydrops, (n;%) **	10(%62.5)

Mortality (n;%) **	2(%12.5)

* Data were expressed as mean±SD
**Data were expressed as number and percent

Table 2. Comparison of patients with and without exchange

	Exchange Patients (n=10)	Patients without Exchange (n = 6)	*p*
Apgar 1st Minute, median (min-max) *	4	5,5	**.049**
Birth hemoglobin median (min-max)	7.5	11.5	**.01**

* Data were expressed as median.

FT80

Phenytoin Induced Anaphylaxis: a Case Report

Fenitoin İlişkili Anaflaksi: Olgu Sunumu

Şule AYAS[1], Kezban ÖZTÜRK[2], Mustafa GENÇELİ[1], Ahmet Sami GÜVEN[2], Hüseyin ÇAKSEN[2]

Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi, Pediatri AD, Konya,Türkiye [1], Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi, Pediatri AD, Pediatrik Nöroloji BD, Konya, Türkiye [2]

Abstract:

Introduction: Phenytoin is an aromatic ring antiepileptic drug (AED) commonly used in epilepsy. As well as the side effects such as phenytoin-induced Steven-Johnson syndrome, DRESS (Drug Reaction with Eosinophilia and Systemic Symptoms) and cerebellar toxicity, a rarely life-threatening anaphylaxis requiring urgent treatment can be seen.

Case:

A 4.5-year-old girl who was followed up in our pediatric neurology outpatient clinic with the diagnosis of right hemiparetic cerebral palsy, epilepsy and autism spectrum disorder presented with a frequent and prolonged generalized tonic-clonic seizure complaint for the last 10 days. In the background; she was born mature weighing 4220 grams with cesarean section and she was followed-up in the neonatal intensive care unit for 38 days with respiratory distress due to formula aspiration and hypoglycemiaon the first day of her life. Her developmental steps were lower for her age. There was no abnormality in the family history. In physical examination; her muscle strength was 3-4/5 in the right upper and right lower extremities, 5/5 in the left upper and lower extremities. Deep tendon reflexes and muscle tonewere increased in the right extremities, there was cortical fisting on the right hand, babinski was positive on the rightand she could sit without support but could not walk. She had been receiving multiple AEDs for epilepsy for the last 1.5 years. Phenytoin loading (20 mg/kg/dose) was given as her seizures increased despite the current AEDs treatment. In the 45th minute of phenytoin loading treatment, the patient complained of sudden flushing on her face, respiratory distress and vomiting. Redness of cheeks, tongue swelling and stridor were found in her examination. Phenytoin induced anaphylactic reaction was considered in the case. Phenytoin infusion was discontinued and airway, respiration and circulation stabilization was achieved. The blood pressure was 110/60 mm/Hg, SpO2 was 93% and pulse rate was 155/min. Intramuscular adrenaline was administered and the complaints regressed during follow-up. After 24 hours monitoring for biphasic reaction, the patient was discharged without any complication.

Conclusion:

Phenytoin is a commonly used AED in the treatment of epilepsy and cardiovascular collapse, hypotension and arrhythmia may develop during the intravenous rapid administration. Anaphylaxis, which is one of the rare side effects of phenytoin, requires urgent treatment and death can also occur if the necessary intervention is not performed on time. We present our case to increase awareness of phenytoin-induced anaphylaxis.

Keywords: *Phenytoin, anaphylaxis, epilepsy*

Giriş:

Fenitoin epilepside yaygın kullanılan aromatik halkalı bir antiepileptik ilaçtır (AEİ). Fenitoine bağlı Steven-Johnson sendromu, DRESS (Drug Reaction with Eosinophilia and Systemic Symptoms) ve serebellar toksisite gibi yan etkiler görülebileceği gibi nadiren yaşamı tehdit edebilen ve acil tedavi gerektiren anaflaksi de görülebilmektedir.
Olgu: Sağ hemiparetik serebral palsi, epilepsi ve otizm tanılarıyla çocuk nöroloji polikliniğimizde takip edilen 4,5 yaşında kız olgu, son 10 gündür sık ve uzamış jeneralize tonik-klonik tarzda nöbet şikayeti ile başvurdu. Özgeçmişinde; miadında, 4220 gram ve sezeryan ile doğmuş, yaşamının birinci gününde mama aspirasyonuna bağlı solunum sıkıntısı ve hipoglisemi ile 38 gün yenidoğan yoğun bakımda takip edilmişti. Gelişim basamakları yaşına göre geriydi. Soygeçmişinde özellik yoktu. Fizik muayenesinde; kas gücü sağ üst ve sağ alt ekstremitede 3-4/5, sol üst ve alt ekstremitede 5/5, sağ ekstremitelerde derin tendon refleksleri ve kas tonusu artmış, sağda kortikal fisting mevcuttu, sağda babinski pozitifti, desteksiz oturabiliyor ancak yürüyemiyordu. Epilepsi için son 1,5 yıldır çoklu AEİ tedavisi almaktaydı. Mevcut AEİ tedavisine rağmen nöbetleri sıklaştığı için fenitoin yüklemesi (20 mg/kg/doz) yapıldı. Fenitoin yükleme tedavisinin 45. dakikasında aniden yüzde kızarma, solunum sıkıntısı ve kusma şikayeti olan olgunun muayenesinde yanaklarda kızarıklık, dilde şişlik ve stridoru vardı. Olguda fenitoine bağlı anaflaktik reaksiyon düşünüldü. Fenitoin infüzyonu kesildi, havayolu, solunum, dolaşım stabilizasyonu sağlandı. Tansiyon arteriyal: 110/60 mm/Hg, SpO2: %93, nabız: 155/dk idi. İntramuskuler adrenalin yapıldı ve takipte şikâyetleri geriledi. Bifazik reaksiyon açısından 24 saat takip sonrası komplikasyon gelişmeyen hasta taburcu edildi.
Sonuç: Fenitoin, epilepsi tedavisinde sık kullanılan bir AEİ'tır ve intravenöz hızlı uygulanmasında kardiyovasküler kollaps, hipotansiyon ve aritmi gelişebilir. Fenitoinin nadir yan etkileri içinde yer alan anaflaksi acil tedavi gerektirir ve zamanında gerekli müdahele edilmezse ölüm de görülebilir. Fenitoine bağlı anaflaksi hakkındaki farkındalığı arttırmak için olgumuzu sunuyoruz.
Anahtar Kelimeler: Fenitoin, anafilaksi, epilepsi

Introduction

Epilepsy is a common, chronic neurological disease characterized by recurrent seizures (1). Phenytoin is an aromatic ring antiepileptic drug (AED), commonly used in epilepsy. It is used for focal and generalized seizures, status epilepticus, myoclonic and tonic-clonic seizures (2). As well as the side effects such as phenytoin-induced Steven-Johnson syndrome, DRESS (Drug Reaction with Eosinophilia and Systemic Symptoms), and cerebellar toxicity, a rarely life-threatening anaphylaxis requiring immediate treatment can be seen.

Case Report

A 4.5-year-old girl who was followed in our pediatric neurology outpatient clinic with the diagnosis of right hemiparetic cerebral palsy, epilepsy and autism spectrum disorder presented with a frequent and prolonged generalized tonic-clonic seizure complaint for the last 10 days. In the background; she was born mature weighing 4220 grams with cesarean section and she was followed-up in the intensive care unit for 38 days with respiratory distress due to formula aspiration and hypoglycemia on the first day of her life. Her developmental steps were lower for her age. There was no abnormality in the family history. In physical examination; body weight was 18 kg (50-75p), height was110 cm (97p) and head circumference was 47 cm (<3p). Her muscle strength was 3-4/5 in the right upper and right lower extremities, 5/5 in the left upper and lower extremities. Deep tendon reflexes and muscle tone were increased in the right extremities, there was cortical fisting on the right hand, babinski was positiveon the right and she could sit without support but could not walk. She had been receiving multiple AEDs for epilepsy for the last 1.5 years. Phenytoin loading (20 mg/kg/dose) was given as her seizuresincreased despite the current AEDs treatment. In the 45th minute of phenytoin loading treatment, the patient complained of sudden flushing on her face,

respiratory distress and vomiting. Redness of cheeks, tongue swelling and stridor were found in her examination. Phenytoin induced anaphylactic reaction was considered in the case. Phenytoin infusion was discontinued and airway, respiration and circulation stabilization was achieved. The blood pressure was 110/60 mm/Hg, SpO2 was 93% and pulse rate was 155/min. Intramuscular adrenaline was administered. High flow oxygen support was provided with the mask. After 2 minutes of adrenaline, redness of the cheeks, swelling of the tongue and stridor were relieved. Vomiting continued for 2-3 times. An antihistaminic treatment and methylprednisolone were started. After 24 hours monitoring for biphasic reaction, the patient was discharged without any complication.

Discussion

Anaphylaxis is a sudden onset, life-threatening systemic hypersensitivity reaction. The most common causes of anaphylaxis are food, drug and venom allergies (3). In a retrospective anaphylaxis study, Grabenhenrich et al. reported a 5% drug anaphylaxis in 1970 patients younger than 18 years of age (4).As well as mild drowsiness, gastointestinal and skin symptoms associated with AEDs, even life-threatening side effects may be seen. For example, the mortality rate of Stevens-Johnson syndrome, which is a serious side effect associated with AEDs, is 5-10%. Phenytoin, commonly used in the treatment of epilepsy, is also a common cause of hypersensitivity syndrome (1). Phenytoin-induced anaphylaxis and anaphylactoid reaction is rare (5). It has been reported that rapid infusion of phenytoin (>50 mg/min) may cause anaphylaxis, but anaphylaxis may develop even at normal infusion rates (5,6). Although phenytoin infusion was administered at the appropriate dose (20 mg/kg/dose) and rate (6 mg/min), anaphylaxis developed in our patient.

The diagnosis of anaphylaxis is made by skin and mucosal involvement and the sudden onset of these symptoms (e.g. generalized urticaria, itching or redness, edema of lips-tongue-uvula); and respiratory failure (e.g. dyspnea, wheezing/bronchospasm, stridor, low peak expiratory flow, hypoxemia) or low blood pressure or one of the symptoms associated with it (7). In our case, in the 45th minute of phenytoin loading treatment, a sudden flushing on the face, respiratory distress and vomiting occurred. Redness of cheeks, tongue swelling and stridor were found in her examination. We considered phenytoin induced anaphylactic reaction, as the occurrence ofsudden skin, respiratory and gastrointestinal involvements.

Early recognition ofanaphylaxis is life-saving (5). The first line treatment for anaphylaxis is accepted to be the administration of intramuscular adrenaline. Intramuscular administration of adrenaline at a dose of 0.01 mg/kg in the middle of the vastus lateralis muscle is the optimal treatment. In addition, late or incorrect administration of adrenaline may increase the risk of death due to anaphylaxis (8). Immediately after the diagnosis of anaphylaxis, our case was administered 0.01 mg/kg/dose of adrenaline intramuscularly in the middle of the vastus lateralis muscle. In addition to adrenaline treatment, volume expanders, nebulized bronchodilators, antihistamines or corticosteroids may be given (9). Our patient followed-up for biphasic reactions, was given high flow oxygen with mask, intravenous fluid support, antihistaminic and corticosteroid treatment. After a 24-hour follow-up, the patient was discharged without complications.

Conclusion

Phenytoin is a commonly used AED in the treatment of epilepsy andcardiovascular collapse, hypotension and arrhythmia may develop in the intravenous rapid administration (5). Anaphylaxis, which is one of the rare side effects of phenytoin, requires urgent treatment and death can also occur if the necessary intervention is not performed on time. We present our case to increase awareness of phenytoin-induced anaphylaxis.

References

1- *Karimzadeh P, Bakrani V. Antiepileptic drug-related adverse reactions and factors influencing these reactions. Iran J Child Neurol 2013 Summer;7(3):25-9.*
2- *Yaari Y, Selzer ME, Pincus JH. Phenytoin: mechanisms of its anticonvulsant action. Ann Neurol 1986; 20:171.*
3- *Atanaskovic-Markovic M, Gomes E, Cernadas JR, et al. Diagnosis and management of drug-induced anaphylaxis in children: An EAACI position paper.Pediatr Allergy Immunol2019 May;30(3):269-276.*
4- *Grabenhenrich LB, Dölle S, Moneret-Vautrin A, et al. Anaphylaxis in children and adolescents: The European Anaphylaxis Registry.J Allergy Clin Immunol2016 Apr;137(4):1128-1137.e1.*
5- *Polat I, Karaoglu P, Ayanoglu M, Yis U, Hiz S. Life-Threatening and Rare Adverse Effects of Phenytoin.Pediatr Emerg Care2015 Jul;31(7):e3.*
6- *Amit D Bhatt, Anjalin Joshi, AP Jaın.Anaphylactic Shock: A Rare Presentation of PhenytoinDrug Reaction. Indian Journal of Clinical Practice 2013 May; Vol. 23, No. 12*
7- *Sampson HA, Muñoz-Furlong A, Campbell RL, et al. Second symposium on the definition and management of anaphylaxis: summary report--Second National Institute of Allergy and Infectious Disease/Food Allergy and Anaphylaxis Network symposium. J Allergy Clin Immunol 2006; 117:391.*
8- *Dhami S, Panesar SS, Roberts G, et al.Management of anaphylaxis: a systematic review.Allergy 2014 Feb;69(2):168-75.*
9- *Muraro A, Roberts G, Clark A, et al.The management of anaphylaxis in childhood: position paper of the European academy of allergology and clinical immunology.Allergy 2007 Aug;62(8):857-71.*

FT81

Prematüre Bebeklerde Bireyselleştirilmiş Gelişimsel Bakım Kapsamında Toplu Bakım Verme Kavramı

Consept Of Clustered Care In The Comprehensive Of Indıvıdualızed Developmental Care In Premature Infants

Fatma TOKAN[1] Emine GEÇKİL[2]

Öğr. Gör., KTO Karatay Üniversitesi, Sağlık Hizmetleri MYO, Anestezi Programı, Karatay, Konya,

Prof. Dr., Necmettin Erbakan Üniversitesi, Hemşirelik Fakültesi, Çocuk Sağlığı ve Hastalıkları Hemşireliği ABD. Meram, Konya, Türkiye,

ÖZET

Prematüre bebek 37. gebelik haftası dolmadan dünyaya gelen bebektir. Prematüre bebeklerin gelişimlerini tamamlayamadan dünyaya gelmeleri prematüreliğe ek olarak birçok sağlık sorununu da beraberinde getirir. Prematüre bebeklerin vücut yüzeylerinden ısı kaybı fazladır, ciltleri incedir, emme refleksleri gelişmemiştir ve akciğerleriyle yeterli gaz alış verişini sağlayamazlar. Prematüreler bu sağlık sorunları neticesinde yenidoğan yoğun bakım ünitelerinde (YYBÜ) desteklenirler. YYBÜ'sinin olumsuz koşullarını en aza indirmek, bebeğin sağlığını ve konforunu en üst düzeyde desteklemek amacıyla 'Bireyselleştirilmiş Gelişimsel Bakım' (BGB) modeli geliştirilmiştir. Bireyselleştirilmiş gelişimsel bakım modelinin ilkelerinden biri toplu bakım vermedir. Bakımın toplu şekilde verilmesi ve kümelenmiş bakım olarak da ifade edilen toplu bakım verme, YYBÜ'lerinde prematüre bebeklerin gereksinimleri olan bakım uygulamalarının toplu şekilde, zaman içine yaymak yerine aynı bakım saatinde verilmesini ifade eder. Toplu bakım vermenin prematüre bebeklerde oksijen ihtiyacının azalması, stres tepkilerinin azalması, stresin azalması ile konfor düzeyinin artması, apne sıklığının azalması, harcanan enerjinin azalması ile birlikte kilo alımının artması, fizyolojik, duyusal, zihinsel, duygusal ve sosyal gelişimi olumlu etkilemesi gibi olumlu etkileri mevcuttur. YYBÜ'nde çalışan hemşirelerin hemşirelik rolleri doğrultusunda BGB kapsamında prematüre bebeklere toplu bakım vermeleri gereklidir. Bu çalışmanın YYBÜ'nde desteklenen prematüre bebeklere bakım veren hemşirelere toplu bakım kavramını açıklamak için yararlı olacağı düşünülmüştür.

***Anahtar Kelimeler**: prematüre bebek; bireyselleştirilmiş gelişimsel bakım; toplu bakım; YYBÜ; hemşire.*

Abstract

The premature infant is the baby born before the 37th gestational week. Premature infants born before they can complete their development bring many health problems in addition to prematurity. Premature infants have more heat loss from their body surfaces, skin is thin, absorption reflexes are not developed, and they cannot provide sufficient gas exchange with their lungs. As a result of these health problems, premature infant are supported in neonatal intensive care units (NICU). In order to minimize the negative conditions of the NICU and to support the health and comfort of the infant at the highest level, the Individualized Developmental Care (IDC) 'model was developed. One of the principles of the individualized developmental care model is collective care. Clustered care refers to the care practices that premature infants require in the NICUs, rather than giving them to the same care hour rather than spreading over time. Clustered care has positive effects such as decreasing oxygen demand in premature infants, decreasing stress reactions, increasing comfort level with decreasing stress, decreasing the frequency of apnea, decreasing energy consumption and increasing weight gain, and affecting physiological, sensory, mental, emotional and social development

positively. Nurses working in the NICU are required to provide clustered care to premature infants within the scope of IDC in line with their nursing roles. This study is thought to be useful to explain the concept of clustered care to nurses who care for premature infants supported in the NICU.

Key words: *premature infant; individualized developmental care;clustured care; NICU; nurse.*

INTRODUCTION

The premature infant is the baby who was born before the 37th gestational week and could not complete its development (World Health Organization [WHO], 2017). Premature infants born before they can complete their development bring many health problems in addition to prematurity. Premature infants have more heat loss from their body surfaces, skin is thin, absorption reflexes are not developed, and they cannot provide sufficient gas exchange with their lungs. As a result of these health problems, premature infant are supported in neonatal intensive care units (NICU).

While the intrauterine environment is safe, dark, wet, resistant to external influences, and effortless feeding is provided, the neonatal intensive care unit is noisy for prematüre infants, where humidity, heat and light balance cannot be provided sufficiently and there is an excess stress factor. The transition from intrauterine to extrauterine is the most sensitive and dynamic period of life for all infants. For the premature infant, this transition process and the NICU can cause transient or permanent neurological and cognitive damage, intraventricular hemorrhages, stress and many physiological problems caused by stress (Sarı & Çiğdem, 2013; Eras, Atay, Şakrucu, Bingöler, & Dilmen, 2013). In 1980s, 'Individualized Developmental Care' (IDC) model was developed in order to minimize these negative conditions of the NICU and to support the health and comfort of the infant at the highest level (Als 1982). In this study, the concept of giving clustered care in premature infants within the extend of IDC was defined and it was aimed to raise awareness of health workers about the subject.

Individualized Developmental Care Model

The Individualized Developmental Care Model aims to minimize the effects of the negative intensive care environment in high-risk neonates and is based on the application of care in a baby-centered manner and supporting the neurological and cognitive development of the premature infant (Als 1982; Kardaş Özdemir & Güdücü Tüfekçi 2012). The principles of this care model are;

- Family-centered care,
- Kangaroo care,
- Pain management,
- Providing therapeutic position,
- Replace negative stimuli of the external environment with positive stimuli,
- Non-nutritive suction,
- To give clustered care (Kardaş Özdemir & Güdücü Tüfekçi 2013; Eras et al. 2013; Tutar Güven & İşler Dalgıç, 2017; Arpacı & Altay, 2017; Turan & Erdoğan, 2018).

As a result of these practices, the stress level is reduced and the rest period that is beneficial for the infant is extended (Kardaş Özdemir & Güdücü Tüfekçi 2013). Studies with traditionally treated infants and infants receiving IDC have demonstrated beneficial effects of parameters such as withdrawal from ventilation, oxygen supplementation, weight and head circumference increase (Westrup et al. 2000). In addition, other beneficial effects of individualized developmental care include a decrease in the frequency of chronic lung disease development, a shorter transition time to full enteral nutrition, a decrease in the incidence of necrotizing enterocolitis, a decrease in autonomic-motor, general status – attention and self-regulation functions, and a decrease in stress levels of families. Postnatally corrected second week examinations of the babies showed better neurological and behavioral results (Eras et al. 2013).

Clustered Care Concept

Clustered care, which is one of the principles of individualized developmental care practice, refers to the provision of care practices that premature infants require in the same care hours rather than spreading over time (Valizadeh, Avazeh, Bagher Hosseini, & Asghari Jafarabad, 2014). In this way, care and routine applications are collected at the same care time. In the literature, the concept of clustered care giving has been explained by the clustering of nursing care activities (Turan & Erdoğan, 2018) and the clustered implementation of care (Pereira et al., 2013).

The main purpose of clustered care is to allow the infant to rest longer without being disturbed with minimal touch (Cabral & Velloso, 2014; Valizadeh et al., 2014). It was found that preterm infants who had 24-hour observation in the NICU were treated with an average of 2 hours and 26 minutes (Pereira et al., 2013). For this purpose, the care required by each infant is determined individually and these care practices are applied clusteredly according to the infant's tolerance. Individually planned care practices for the prematüre infant include nutritional, hygiene requirements, kangaroo care, proper positioning and regulation of stimuli. In addition to the care applications, the routine applications of the NICU, such as medicine applications, obtaining vital signs, head circumference, umbilical circumference measurement, and weight monitoring are also considered within the scope of clustered care (Çalık, Işık, & Tufan, 2015; Turan & Erdoğan, 2018). If the infant shows typical stress response, such as color pallor, apnea, hypotonia, the care is interrupted in accordance with IDC in clustered care. Thus, the baby's neurological development is supported (Kardaş Özdemir & Güdücü Tüfekçi 2012; Sarı & Çiğdem, 2013).

Positive effects of clustered care on preterm infants such as decreased need for oxygen, negative stress and decreased behavioral responses of this stress have been reported (Valizadeh et al., 2014; Turan & Erdoğan, 2018). Clustered care planned and applied to the baby individually, the baby's frequent disturbance is prevented. Thus, the infant's comfort level can be increased by protecting the infant from unnecessary stressors, reducing the stress level and extending the rest period. It is reported that the infant's comfort facilitates adaptation to the extrauterine environment and positively affects physiological, sensory, mental, emotional and social development (Sarı & Çiğdem, 2013; Aydın & Karaca Çiftçi, 2015; Küçük Alemdar & Güdücü Tüfekçi, 2015). It has been reported that apnea frequency, decrease in mean heart rate and increase in weight gain have been reported in premature infant who have less touching and resting and sleeping time by performing clustered care applications (Holsti, Grunau, Whifield, Oberlander, & Lindh, 2006, Valizadeh et al., 2014). It was stated that the weight gain and hospitalization times of the infants who were treated with therapeutic touch and less touched were shorter (Leonard, 2008). In addition, in some studies, it was thought that prolonged sleep time as a result of the clustered application of care may be associated with excessive energy consumption in the care and combining stressful procedures (Holsti et al. 2006). In the study by Holsti et al.(2007), ACTH and cortisol levels of premature infants were compared in response to clustered care. There was no significant relationship between ACTH and cortisol in premature infants at ≤28 gestational weeks compared to gestational week, but there was a significant difference in 29–31 gestational week babies.

Nursing Initiatives to be Applied in Clustered Care

Nutrition Practices

Infants are supported by non-nutritive breastfeeding to improve sucking behavior and regulate the digestion of enteral nutrients until suckling and swallow coordination are achieved.

In non-nutritive sucking, the goal is not to feed the infant, but to support the oral transition to full feeding (Eras et al., 2013; Aytekin, Albayrak, Küçükoğlu, & Caner, 2014).

Applications for Hygiene Requirements

The main purpose of skin care in prematüre infant is to reduce traumatic injuries, to prevent dryness, to avoid contact with toxins, to support immature protective function, to protect skin integrity.

Initiatives for this purpose; massage, oil to protect the moisture of the skin, vernix absorption after bathing can be counted as (Arısoy, 2010; Karabulut, 2011; Cimete et al. 2018).

Therapeutic Positioning

The fetal position, which is one of the therapeutic positions, is defined as the process of placing the baby in the nest and closing the body close to the midline by keeping the baby's upper and lower extremities flexed by hand. The baby may be given lateral, supine or prone position (Çağlayan & Balcı, 2014; Tutar Güven & İşler Dalgıç 2017).

Ensuring Mother-Baby Attachment

The unit should have appropriately arranged mother-baby rooms, family training rooms and family-centered care (Salihoğlu et al., 2011; Gözen & Aykanat Girgin, 2017; Conk et al. 2018).

Correction of NICU Conditions

Unit format; number of employees, bed head area, unit operation should be arranged in a plan that includes issues such as. NICU temperature 22-26 C and humidity should be between 30-60%. In order to reduce noise in the intensive care environment; all measures should be taken such as talking at low bed and soft tone, closing the incubator lids slowly, muting alarms, designing rooms to absorb noise, and ensuring that instant sound does not exceed 45-60 dB / h. There should be separate rooms for all infectious measures, hand washing area, clean and dirty tank, self-closing doors, effective negative air pressure and regular ventilation, and all areas used should be suitable for frequent cleaning (Salihoğlu et al. 2011; Sarı & Çiğdem, 2013).

Stress Management

To ensure the comfort of the premature baby, after the stressful procedures, to hold the baby, to provide skin contact, to talk with soft tone, to shake gently, to make baby massage or loose swaddle, oral feeding together with stressful procedures, to use the pacifier to reduce the tension of the baby provides relaxation (Sarı & Çiğdem, 2013; Cimete et al.2018).

Pain Management

Pain in the NICU should be assessed using appropriate scales. The use of pharmacological (sedation, analgesics) and non-pharmacological methods (swaddling, therapeutic touch, positioning, infant massage, pacifier, kangaroo care, oral sucrose administration) in the management of pain is important for increasing the comfort level of premature infants (Çalık, Işık, & Tufan, 2015; Turan & Erdoğan, 2018; Büyükgönenç ve Kılıçarslan Törüner 2018).

Supporting Sleep

Sound, heat, light and noise factors should be regulated effectively to improve sleep quality. Newborn day and night sleep periods should be supported. Adequate rest time should be ensured with minimal touch and clustered care (Küçük, 2015).

CONCLUSIONS AND RECOMMENDATIONS

Clustered care refers to the application of individually planned care for the premature baby to the same time as the baby's tolerance. The main purpose of clustered care is to allow the baby to rest longer without being disturbed. Clustered care has positive effects such as decreasing oxygen demand in preterm infants, decreasing stress reactions, increasing comfort level with decreasing stress, decreasing the frequency of apnea, decreasing energy consumption, increasing weight gain, and improving physiological, sensory, mental, emotional and social development. Regulation of nutrition, fulfillment of hygiene requirements, providing therapeutic position, ensuring mother-infant attachment, pain, stress management, touch control, regulation of unit conditions can be evaluated in this context. Nurses working in the NICU are required to provide clustered care to premature infant within the extent of ındividualized developmental care. Clustered care given within the scope of ındividualized developmental care is inadequate. This study will be useful for explaining the concept of clustered care to nurses who care for premature infants supported in the NICU, and it is necessary to carry out studies with high level of evidence of clustered care.

References

1- *Als H.(1982).Toward a synactive theory of development: promise for the assessment and support of ınfant ındividuality. Infant Mental Health Journal. 3, 229-243.*
2- *Arısoy, E. S. (2010). Yenidoğan sepsisi: tanı ve tedavi yaklaşımları. ANKEM Derg, 24(2), 168–175.*
3- *Arpacı, T., Altay, N.(2017). Yenidoğan yoğun bakım ünitelerinde bireyselleştirilmiş gelişimsel bakım: güncel yaklaşımlar. Türkiye Klinikleri Hemsirelik Bilimleri, 9(3):245-254.*
4- *Aydın, D. Karaca Çiftçi, E. (2015). Yenidoğan yoğun bakım hemşirelerinin preterm yenidoğanlara uygulanacak terapötik pozisyonlar hakkındaki bilgi düzeyi. Guncel Pediatri, 13(1), 21–30. https://doi.org/10.4274/jcp.26349.*
5- *Aytekin, A., Albayrak, E. B., Küçükoğlu, S. Caner, İ. (2014). Erken doğmuş bebeklerde kaşık ve biberonla beslenme yöntemlerinin tam anne memesine geçiş süreci ve emme başarısı üzerine etkisi. Turk Pediatri Arsivi, 49(4), 307–313. https://doi.org/10.5152/tpa.2014.1904*
6- *Büyükgönenç L, Kılıçarslan Törüner E. (2018). Çocukluk yaşlarda ağrı ve hemşirelik yönetimi. Pediatri Hemşireliği içinde. Ed: Conk Z, Başbakkal Z, Bal Yılmaz H, Bolışık B. Ankara:Akademisyen.*
7- *Cabral, L. A.,Velloso, M. (2014). Comparing the effects of minimal handling protocols on the physiological parameters of preterm infants receiving exogenous surfactant therapy. Brazilian Journal of Physical Therapy, 18(2), 152–164. https://doi.org/10.1590/s1413-35552012005000154.*
8- *Cimete G. Kuğuoğlu S. Dede Çınar N. (2018) Çocuk, hastalık ve hastane ortamı. Pediatri Hemşireliği içinde. Ed: Conk Z, Başbakkal Z, Bal Yılmaz H, Bolışık B. Ankara:Akademisyen.*
Conk Z, Başbakkal Z, Yardımcı F.(2018). Çocuk Sağlığına Genel Bakış. Pediatri Hemşireliği içinde. Ed: Conk Z, Başbakkal Z, Bal Yılmaz H, Bolışık B. Ankara:Akademisyen.
Çağlayan, N., Balcı, S. (2014). Preterm yenidoğanlarda ağrının azaltılmasında etkili bir yöntem: cenin pozisyonu. Florence Nightingale Hemşirelik Dergisi, 22(1), 63. https://doi.org/10.17672/fnhd.28974
9 *Çalık, C., Işık, F.,Tufan, A. (2015). Yenidoğan yoğun bakım ünitelerinde çalışan hemşirelerin kanguru bakımı uygulama durumları ve engeller. Hemşirelikte Araştırma Geliştirme Dergisi, 9557(1), 1–9.*
10 *Eras, Z., Atay, G., Şakrucu, E. D., Bingöler, E. B.,Dilmen, U. (2013). Yenidoğan yoğun bakım ünitesinde gelişimsel destek. Şişli Etfal Hastanesi Tıp Bülteni The Medical Bulletin of Sisli Hospital, (3), 97–103. https://doi.org/10.5350/semb2013470301.*
11 *Gözen, D., Aykanat Girgin, B. (2017). Preterm bebeklerde oral beslenmeyi destekleyici kanıta dayalı girişimler. Clinical and Experimental Health Sciences, 7(4), 171–174. https://doi.org/10.5152/clinexphealthsci.2017.327.*
12 *Holsti, L., Grunau, R. E., Whifield, M. F., Oberlander, T. F.,Lindh, V. (2006). Behavioral responses to pain are heightened after clustered care in preterm infants born between 30 and 32 weeks gestational age. Clinical Journal of Pain, 22(9), 757–764. https://doi.org/10.1097/01.ajp.0000210921.10912.47.*
13 *Holsti, L., Weinberg, J., Whitfield, M. F. ve Grunau, R. E. (2007). Relationships between adrenocorticotropic hormone and cortisol are altered during clustered nursing care in preterm infants born at extremely low gestational age. Early Human Development, 83(5), 341–348. https://doi.org/10.1016/j.earlhumdev.2006.08.005.*
14 *Karabulut, A. A. (2011). Yenidoğanda deri fizyolojisi ve topikal ilaç kullanimi. Turkderm Deri Hastaliklari ve Frengi Arsivi, 45(SUPPL. 2), 60–67. https://doi.org/10.4274/turkderm.45.*
15 *Kardaş Özdemir, Funda; Güdücü Tüfekçi, F. (2012). Bireyselleştirilmiş gelişimsel bakım uygulamalarının prematürelerin fizyolojik belirtiler büyüme ve hastanede kalış sürelerine etkisi.Doktora tezi.Atatürk Üniversitesi. Erzurum.*
16 *Küçük Alemdar, D., Güdücü Tüfekci, F. (2015). Prematüre bebek konfor ölçeği'nin türkçe geçerlilik ve güvenilirliği. Hemşirelikte Eğitim ve Araştırma Dergisi, 12(2), 142–148. https://doi.org/10.5222/head.2015.142.*
17 *Küçük, S. (2015). Yenidoğan yoğun bakım ünitelerinde kaliteli uyku. Dokuz Eylül Üniversitesi Hemşirelik Fakültesi Elektronik Dergisi 8(3), 214–217.*
18 *Leonard, J. (2008). Exploring neonatal touch. Wesley J Psychol, 3, 39–47.*
19 *Pereira, F. L., de Góes, F. dos S. N., Fonseca, L. M. M., Scochi, C. G. S., Castral, T. C., Leite, A. M. (2013). Handling of preterm infants in a neonatal intensive care unit. Revista Da Escola de Enfermagem, 47(6), 1272–1278. https://doi.org/10.1590/S0080-623420130000600003.*

20 *Salihoğlu, Ö., Akkuş, C. H., Hatipoğlu, S. (2011). Yenidoğan yoğun bakım ünitesi standartları. Medical Journal of Bakirkoy, 7(2), 45–51. https://doi.org/10.5350/BTDMJB201107201*

21 *Sarı, H. Y., Çiğdem, Z. (2013). Gestasyon haftalarına göre bebeğin gelişimsel bakımının planlanması. Dokuz Eylül Üniversitesi Hemşirelik Fakültesi Elektronik Dergisi, 6(1), 40–48.*

22 *Turan, T., Erdoğan, Ç.(2018). Yenidoğan yoğun bakım ünitesindeki prematüre bebeğin gelişiminin desteklenmesi. JAREN, 2018;4(2):127-132.*

23 *Tutar Güven, Ş., İşler Dalgıç, A. (2017). An ındividualized supportive developmental care program developed for premature newborns. International Refereed Journal of Gynaecological Diseases and Maternal and Child Health, 9(0), 41–61. https://doi.org/10.17367/jacsd.2017.1.004.*

24 *Valizadeh, L., Avazeh, M., Bagher Hosseini, M. ve Asghari Jafarabad, M. (2014).Comparison of clustered care with three and four procedures on physiological responses of preterm infants: randomized crossover clinical trial. Journal of Caring Sciences, 3(1), 1–10. https://doi.org/10.5681/jcs.2014.001.*

25 *Westrup B, Kleberg A, Von Eichwald K, Stjernqvist K, Lagercrantz H. (2000). A randomized, controlled trial to evaluate the effects of the newborn ındividualized developmental care and assessment program in a swedish setting.* Pediatrics*.105(1).*

World Health Organization (WHO). Preterm Birth. Erişim adresi: http://www.who.int/mediacentre/factsheets/fs363/en/ (Erişim tarihi: 10.10.2019).

FT82

Evaluation of Childhood Immune Thrombocytopenic Purpura Cases: 184 Case Experience of a Single Center

Mine KIRAÇ[1], Hüseyin TOKGÖZ[2], Ümran ÇALIŞKAN[3]

[1]Dr. Ali Kemal Belviranlı Kadın Doğum ve Çocuk Hastalıkları Hastanesi, Pediatrik immunology and allergy, Konya

[2]Necmettin erbakan university Meram Medical Faculty Pediatric Hematology, Konya

[3]KTO Karatay University Medical Faculty Pediatric Hematology,

Abstract

Purpose:

Immune thrombocytopenic purpura is the most frequently seen acquired bleeding disorder of childhood. It generally progresses with good prognosis and high spontaneous remission rate. Our study aims to evaluate the general characteristics of the patients followed at our clinic.

Material and Method:

Patients, who were diagnosed between 2000 and 2008 and whose follow-up periods exceeded six months at NEU Meram Medical Faculty Pediatric Hematology Department, were evaluated in this study.

Findings:

A total of 184 cases were taken under evaluation in this study. The male and female ratio was 1 (M/F: 1), and the age group in this patients were most frequently seen 1 to 10. The history of infection in acute ITP group was 49% and chronic ITP group was 17.9%. The most frequently observed history was the upper respiratory tract infection (67%). No difference was discovered among groups in terms of the distribution of symptoms. Application age and number of thrombocytes was significantly low in the acute group. The number of thrombocytes at the time of application of 63% of the patients with acute ITP was <10.000/mm3. The number of serologically proven infections was 30 (16.3%), with the most frequently encountered being EBV positive. The rate of becoming chronic in patients applying with acute ITP was 36.4%. Even though the number of acute cases was higher in the Infantile ITP group, there was no difference in terms of gender distribution.

Result:

It is possible to exclude history, examination, and laboratory as well as other causes of thrombocytopenia in patients applying with the ITP clinic. Morbidity and mortality due to ITP will have been prevented with the preference of effective and economic treatment methods. Prospectively planned comprehensive case studies are needed in order to determine the risk factors that might cause this disorder to reach a chronic state.

Key words: *Childhood, thrombocytopenia,*

Introduction And Purpose

Idiopathic thrombocytopenic purpura thrombocytopenia is characterized by shortened thrombocyte life, existence of anti-thrombocyte antibodies in the plasma, and existence of increased or normal number of megakaryocyte in the bone marrow. Mucocutaneous bleeding is the most frequently encountered symptom. The rate of life-threatening bleeding is quite low (0.2-0.9%), however, it may be fatal if it emerges in vital organs (1, 2). ITP in childhood is generally a benign condition that

progresses with moderate symptoms, 80% of the cases enters spontaneous remission without treatment within six months (3).

It is classified as acute ITP if the number of thrombocytes becomes normal and the condition does not recur within six months following diagnosis and as chronic ITP if it remains below 150.000/mm^3 for a period longer than six months. While chronic form is prevalent in adults, acute form is more frequently seen in children (4).

Since the disease is most frequently temporary, its real incidence is not known. Its estimated incidence is 1/10,000 child in a year. Such incidence depends on the age and gender. The incidence is high below the age of two in boys and after the age of fourteen in girls (5). Symptoms may develop following infection and vaccination (6).

Acute ITP is generally seen among children between the ages of 1 to 9 and the peak incidence is around the ages of 2 to 5, during which infectious diseases are frequently observed. It is seen at equal rates in both genders (7).

The aim of this study was to perform the retrospective evaluation of the pediatric patients with ITP, who were diagnosed and being followed at the Pediatric Hematology Clinic of the NEU Meram Medial Faculty, to identify demographic findings, to determine and compare the characteristics of patients with acute and chronic ITP, and to research into the risk factors that might cause this disorder to reach a chronic state.

MATERIAL AND METHOD

Files of 184 patients, who applied to the Pediatric Hematology Clinic of the NEU Meram Medical Faculty and were diagnosed with ITP between 2000 and 2008 and whose follow-up periods were at least six months, were evaluated on a retrospective basis in this study. All patients were subjected to a complete blood count, a peripheral smear evaluation, a direct Coombs' test, kidney and liver function tests, a PT, an APTT, and a fibrinogen evaluation at the time of application and bone marrow evaluations of all patients except two, the consents of whose families could not be obtained, were realized.

Genders, ages, application times of the patients covered within the scope of the study as well as durations of their complaints, their application seasons, complaints for which they applied to the hospital (mucosal bleeding, dermatological signs, intracranial bleeding, other), their infections or histories of vaccinations, application thrombocyte values, viral serologies, progressions (acute, chronic), prognoses were evaluated. Patients with their thrombocyte numbers being <150,000/mm^3 for at least six months from the beginning of the disorder, were considered as having chronic ITP.

While the data obtained during the study were being evaluated, Excel 2000 and SPSS 12.0 programs were used for statistical analysis. The value $p< 0.05$ was considered to be significant. Parameters were expressed in average values, ± standard deviations, and percentages. The chi-square test was used in evaluating categorical data. In evaluating continuous variables, on the other hand, the t-test was used for normally distributing groups and the Mann Whitney U test was used for those not normally distributing.

FINDINGS

From the 184 patients covered within the scope of the study, 92 were girls (50%) and 92 were boys (50%). 67 (36.4%) of the patients were described to be with chronic ITP and 117 (63.6%) of them answered to the description of acute ITP. The ratio of girls was higher in cases with chronic ITP but no statistical difference was discovered ($p>0.05$). The average age was found to be 7 ± 4.47 year (3 month – 17 year). The average age of the chronic group was significantly higher compared to that of the acute group ($p<0.05$). When the distribution of patients was evaluated according to their age group, 134 (72.9%) of the cases were between 1 and 10 years of age. There were 10 (5.4%) cases below the age of one (between 3 months and 12 months). 40 (21.7%) of the cases were between the

ages of 11 and 17. The number of infantile cases, that is, those below the age of two, was 24 (13%) (Table 1).

The most frequently encountered application symptom was dermatological signs (petechia, purpura) in both acute and chronic ITP groups. There was no statistically significant difference between the patients with acute and chronic ITP in terms of the distribution of their application symptoms (Table 1).

There was a history of infection suffered from at the time of the diagnosis in 60 (51.2%) of the 117 cases with acute ITP, 10 (18%) of the 67 cases with chronic ITP and 70 (39.1%) patients in total. The history of infection was significantly higher in the patient group with acute ITP (p=0.001). Vaccination history existed in a total of nine (5%) children being one in the group with chronic ITP and eight in the group with acute ITP. Since the number was low, a statistically significant difference could not be found between the two groups in terms of the vaccination history (Table 1).

The application thrombocyte numbers of the acute group was determined to be lower and this difference was found to be statistically significant (p=0,004) (Table 1) .

When the patients at the age of twenty four months and younger, that is, infantile patients with ITP were compared with older patients, the number of acute cases was higher (p=0.001), there was no difference in terms of gender distribution (p=0.43), there was no difference in the history of infections suffered from, and clinical symptoms starting with fever were significantly higher (p=0.007) (Table 2).

DISCUSSION

Idiopathic thrombocytopenic purpura is a hematological table characterized by the destruction of thrombocytes in the reticuloendothelial system by the autoantibodies that develop against thrombocytes and it is the most frequently encountered acquired bleeding disorder of childhood.

The rate of becoming chronic was found to be 36.4% in our study. The rate of becoming chronic in children was reported to range between 10 to 20% in the literature (1, 3, 4, 6, 7, 8). The reason for finding the rate of becoming chronic higher in our study may result from the fact that acute cases may enter spontaneous remission, thus causing the rate of application to hospital to be lower.

2/3 of cases with acute ITP are triggered with infection or vaccination (3, 9). Infection history was determined to be 60/117 (51%) in cases with acute ITP and 12/67 (18%) in those with chronic ITP. The existence of increased infection history in patients with acute ITP suggests that triggering by infection might be one of the indicators of remission.

Clinical characteristics in patients younger than two years of age ((infantile ITP) have been reported to be; increased boy/girl rate, lower rate of infection history prior to ITP, lower rate of chronic ITP, poor response to treatment, and severer clinical course (4, 10-11). In our cases, acute ITP was observed more frequently in patients below the age of two (p=0.0019), there was no difference in terms of gender distribution, infection symptoms in diagnosis were more frequent in terms of infection history (p=0.007), and there was no difference in terms of history of infections suffered from. Vaccination history was also found to be higher in this group due to the concentration of the routine vaccination schedule during the first two years.

Early remission indicators have been reported to be acute outset, triggering with infection, male gender, being below the age of 10, wet purpura, and the number of thrombocytes being below 5,000/mm^3 in the literature (12). It was also found in our study, as consistent with the literature, that the average age of application was lower in acute ITP, the rate of becoming chronic was higher in girls, the application thrombocyte number was below 10,000/mm^3 in 63.2% of the cases among children with acute ITP, and triggering by infection was significantly higher in the group with acute ITP. However, no association could be found between the symptoms and the disorder becoming chronic (13).

It is possible to exclude history, examination, and laboratory as well as other causes of thrombocytopenia in patients applying with the ITP clinic. Morbidity and mortality due to ITP will

have been prevented with the preference of effective and economic treatment methods. Prospectively planned comprehensive case studies are needed in order to determine the risk factors that might cause this disorder to reach a chronic state.

References

1. *Diane J. Nugent immune thrombocytopenic purpura of childhood American Society of Hematology 2006; 97-102*
2. *Lilleyman JS. Intracranial haemorrhage in idiopathic thrombocytopenic purpura. Arch Dis Child 1994; 71: 251-3*
3. *Blanchette, Bolton-Maggs. Chilhood Immune Thrombocytopenic Purpura: Diagnosis and Management, Pediatr Clin N Am 2008; 55:393-420*
4. *Lanzkowsky P. Disorders of Platelets. Manual of Pediatric Hematology and Oncology, Fourth Edition. Elsevier Inc, 2005;250-63.*
5. *Sutor AH, Harms A, Kaufmehl K. Acute immune thrombocytopenia in chilhood, retrospective and prospective survey in Germany. Semin thromb Hemost 2001; 27:253-7*
6. *Lileyman J S. Management of childhood idiopatic thrombocytopenic purpura. Br J Haematol 1999; 105:871-5*
7. *D.J Nugent Childdhood immune thrombocytopenic purpura Blood rewievs 2002; 16:27-9*
8. *Nathan DG, Oski FA Haematology of Infancy and Childhood, Acquired Platelet Defects. Sixth Edition. Saunders Company, Philadelphia, 2003;1597-1609*
9. *Black C, Kaye JA, Jick H. MMR vaccine and idiopathic thrombocytopenic purpura. Br J Clin Pharmacol 2003;55:107-11.*
10. *Scott J. Paul, Montgomery R.R. Hemorrhagic and thrombotic diseases In: Kliegman RM, Behrman RE, Jenson HB, Stanton, Nelson Essentials of Pediatrics 18th edition, Saunders Company 2007:2066-89*
11. *Kühne T, Imbach P, Buchanan GR, Zimmerman S. A prospective comparative study of 2540 infants and children with newly diagnosed idiopathic thrombocytopenic purpura (ITP) from the Intercontinental Childhood ITP Study Group. J Pediatr 2003;143:605-8.*
12. *Edslev PW, Rosthoj S, Treutiger I. A clinical score predicting a brief and uneventful course of newly diagnosed idiopathic thrombocytopenic purpura in children. Br J Haematol 2007;138:513-6.*
13. *Akbayram S, Dogan M, Ustyol L, Akgun C, Peker E, Bilici S et all. The Clinical Outcome of 260 Pediatric ITP Patients in One Center Clinical and Applied Thrombosis/Hemostasis 2011;17(6): E30-E35.*

Table 1. General characteristics of the diseases

		acute	chronic	P
Gender	Girls	54 (46.2%)	38(56.7%)	>0.05
	Boys	63(53.8%)	29(43.3%)	>0.05
Age				
	Average age (months)	71.3(±54.6)	104.8(±44.7)	0.001
Symptom				
	Epistaxis	13(11%)	11(16.4%)	>0.05
	Gingival bleeding	5(4.3%)	2(3%)	>0.05
	Petechia purpura	74(64.2%)	29(43.3%)	>0.05
	Mucosal + dermatological bleeding	18(15.4%)	15(22.3%)	>0.05
	İntracranial bleeding	1(0.9%)	1(1.5%)	>0.05
	Asymptomatic	2(1.8%)	6(9%)	>0.05
	Other	4(3.4%)	1(1.5%)	>0.05
History of infections suffered from		60(51.2%)	10(18%)	0.001
Vaccination		8	1	
Number of platelets ($x10^9$/lt)		14.6(±20.5)	26(±28)	0.004
	<10	74 (63.2%)	24(35.8%)	**0.001**
	10-19	19 (26.2%)	15(22.4%)	>0.05
	20-49	15 (12.8%)	15 (22.4%)	>0.05
	50-99	7 (6%)	11 (16.4%)	>0.05
	100-149	2(1.7%)	2 (3%)	>0.05
Viral serology		20	9	<0.05
	CMV	6	2	
	EBV	7	5	
	Rubella	6	0	
	Parvovirus	1	2	

Table 2. Comparison of the infantile group with other patients.

Characteristics	**≤ 24 months (N:34)**	**> 24 months (N:150)**	**P**
Acute	31(91%)	87 (58%)	**<0.05**
Chronic	3 (9%)	63 (42%)	**<0.05**
Infection(+)	14 (41%)	45 (30%)	>0.05
Infection(-)	14 (41%)	96 (64%)	>0.05
Girls/boys	16/18	76/74	>0.05
Infection at diagnosis	6 (18%)	7 (6%)	**<0.05**

Evaluation of Internet Addiction and Digital Game Addiction in Adolescents with Anxiety Disorder

Hasan Ali GULER[1], Sevde Afife DURAN[1], Kübra KILINC[1], Halit Necmi UCAR[1], Fatih Hilmi CETIN[1], Serhat TURKOGLU[1]

[1] Department of Child and Adolescent Psychiatry, Faculty of Medicine, Selcuk University, Konya, Turkey.

Introduction:

Anxiety disorders (AD) are quite common disorders which associated with severe loss of function, causing high economic cost in children (1). AD, which manifest as separation anxiety disorder and specific phobia in childhood, appear as social phobia as the age progresses. The prevalence of AD is reported to be between 15-20% for children and adolescents (2).

Today, the Internet is increasingly being used as a means of information sharing, access to information, rapid communication and interaction among all age groups. In our country, Turkey Statistical Institute, according to data from 2016, where nearly eight of ten households have internet access opportunity and the proportion of individuals using the Internet was reported to be 61.2%. In addition to the advantages of increasing internet usage in our country along with the world, the negative effects on the life of some users were pointed out. In DSM-5, " internet gaming disorder "is located under the title of 'Conditions for Further Study'(1, 3). In the literature, terms such as online addiction, cyber addiction, pathological internet use, excessive internet use, internet addiction disorder, net addiction, cyber domain addiction, problematic internet use, technological addiction, compulsive internet use, internet behavior addiction are included (4). In a study conducted in seven different provinces in Turkey in 2009 internet addiction rate in the sample aged 14-20 was 10.1% (5). Internet addiction has been shown to have harmful effects on neurobiological, psychological and emotional development of adolescents in general (6). In a systematic review, internet addiction can have serious mental and emotional effects, but may also occur as a result of ongoing mental health problems, and there is a potential correlation between impulsivity, depression, anxiety, psychosis, obsessive compulsive symptoms, and internet addiction (7).). In the literature, there are studies investigating the relationship between social anxiety disorder and internet use (8). However, it is reported that almost all ADs can be comorbid to internet addiction (9). In this study, it was aimed to share the results of a clinical sample by comparing internet addiction and digital game addiction to adolescents diagnosed with AD with healthy adolescents. According to our knowledge; this is the first study in the literatüre evaluating internet and digital game addiction in adolescent patients diagnosed with AD after a formal process.

Materials and Methods:

The study included 28 adolescents diagnosed with anxiety disorder after a semi-structured diagnostic interview among adolescents who applied to the Child and Adolescent Psychiatry Outpatient Clinic of Selçuk University. The control group consisted of volunteers who agreed to come to our outpatient clinic as a result of the announcement made in the schools of Konya Provincial Directorate of National Education. As a result of the organic and psychiatric evaluations of these volunteers, 39 were found suitable for inclusion in the study. Consent was obtained from all participants and their parents that they agreed to participate in the study. All participants included in the study completed the sociodemographic data form. Afterwards, a semi-structured interview was conducted using Turkish Version of Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version (K-SADS-PL). Revised Children's Anxiety and

Depression Scale (RCADS) were used to assess anxiety levels of the patients, Internet addiction levels were assessed using the Internet Addiction Scale (IAS) and digital game addiction levels were evaluated using the Digital Game Addiction Scale (DGAS-7).
For statistical analysis; the data of the study were evaluated using IBM SPSS v.22 statistical software program. In descriptive statistical evaluation, mean ± standard deviation values are presented for continuous data. Chi-square test was used to compare categorical data. Student's t-test was used for the data that fit the normal distribution and Mann-Whitney U Test was used for the data that did not fit the normal distribution. Pearson correlation analysis was performed to evaluate the correlation between IAS and RCADS scores. Statistical significance was accepted as p value <0.05.

Results:

The mean age of AD group (14.46 ± 1.37) and control group (14.41 ± 0.49) was similar and no statistically significant difference was found. 67.9% (n = 19) of the AD group and 48.7% (n = 19) of the control group were girls, and there was no significant difference in gender distribution between the groups. Similarly, no significant difference was found between the two groups in terms of educational level and working status of the parents and socioeconomic level.
Sixteen of the adolescents with anxiety disorder were diagnosed with GAD and 12 with SF. As a comorbidity, it was found that 10 adolescents had a diagnosis of SF.
In the context of clinical evaluation scales, RCADS anxiety and depression scores were found to be significantly higher in the AD group compared to the control group. In addition, there was a significant difference between the AD and control groups in terms of IAS and DGAS-7 scores. The scale scores of the AD group and the control group are shown in Table 1.
Table 1. Scale scores of the AD and control groups

	AD Group		Control Group		p	t/z
	Mean	SD	Mean	SD		
RCADS anxiety scores	48,64	19,98	21,61	9,40	<0,001*	6,448
RCADS depression scores	12,42	6,56	4,51	3,10	<0,001*	5,920
IAS scores	35,64	22,54	18,51	19,75	0,003**	-2,944
DGAS-7 scores	15,03	6,64	11,12	4,61	0,010*	2,681

AD: Anxiety disorder. SD: Standard deviation * Student's t test p value, ** Mann-Whitney U test p value
Internet usage time of the AD group was also significantly higher than the control group. In the AD group, there were 15 adolescents with more than 4 hours of internet usage per day, whereas in the control group only 1 adolescent had more than 4 hours of internet usage per day. ($p<0,001$, x^2: 25,720). In addition, a moderate correlation was found between RCADS anxiety scores and IAS scores. (p: 0,016, r: 0,451).

Discussion:

The aim of this study was to investigate the levels of internet and digital game addiction in adolescents with AD and to compare the data with the control group. Internet and digital game addiction scores of adolescents with AD were higher than control group. To our knowledge; our study is the first study in the literatüre on this issue.
Today's adolescents were born into the Internet age, and therefore Maslow's hierarchy of needs could be redefined to include the existence of the Internet in the pyramid. In addition more than 90% of adolescents have internet access (10, 11). The prevalence of internet addiction is between 4% and 18% in screening studies conducted in adolescents and young adults in different cultures (12, 13). Internet addiction is often associated with psychiatric disorders. Mood disorders, AD, substance abuse and attention deficit hyperactivity disorder; comorbid conditions commonly seen in internet addiction. In a study which included 60 Internet addicts aged between 10-18 years, anxiety disorder

comorbidity was found 71.7%. (9). In another study involving 300 university students, a positive relationship was found between internet addiction and anxiety levels. In addition; Internet addiction was found to be associated with decreased social interaction. (14). At the same time, the Internet provides a non-face-to-face communication environment for individuals with low social skills. In this context, internet is defined as "Prozac of social communication" by some authors. (15). As a result, internet addiction and anxiety disorders appear in a reciprocal relationship. In our study, a correlation was found between anxiety scores and internet addiction scores, consistent with the literature. In addition, the duration of ınternet usage time was significantly higher in the AD group compared to the control group.

The most important limitation of the present study is that it is a cross-sectional study, so a causal relationship could not be established. Other limitations of the study are the clinical sample and the small sample size. All these factors prevent the generalization of the results to the larger society. One of the strengths of our study is that it includes a control group. Other strengths; the study is the first study in the literatüre on the subject.

Conclusion:

In conclusion, this study demonstrates the importance of evaluating problems related to internet and digital game addiction in adolescents with AD. Internet and digital game addiction are important factors in both treatment selection and treatment follow-up. In this context, holistic evaluation of adolescents diagnosed with AD is required.

References:

1. *Association AP. Diagnostic and statistical manual of mental disorders (DSM-5®): American Psychiatric Pub; 2013.*
2. *Göker Z, Güney E, Dinç G, et al. Çocuk ve ergenlerde anksiyete ile ilişkili bozuklukların klinik ve demografik özellikleri: Bir yıllık kesitsel bir örneklem. Klinik Psikiyatri. 2015;18(1):7-14.*
3. *Ceyhan E. Ergen ruh sağlığı açısından bir risk faktörü: İnternet bağımlılığı. Çocuk ve Gençlik Ruh Sağlığı Dergisi 2008;15(2):109-16.*
4. *Ögel K. İnternet bağımlılığı: İnternetin psikolojisini anlamak ve bağımlılıkla başa çıkmak: İş Bankası Kültür Yayınları: Ankara; 2012.*
5. *Gunuc S, Kayri M. The profile of internet dependency in Turkey and development of internet addiction scale: study of validity and reliability. Hacettepe University Journal of Education 2010;39(39):220-232.*
6. *Adalıer A, Balkan E. The relationship between internet addiction and psychological symptoms. Int J Glob Educ 2012;1(2).*
7. *Carli V, Durkee T, Wasserman D, et al. The association between pathological internet use and comorbid psychopathology: a systematic review. Psychopathology. 2013;46(1):1-13.*
8. *Shepherd R-M, Edelmann RJ. Reasons for internet use and social anxiety. Pers Individ Dif. 2005;39(5):949-958.*
9. *Bozkurt H, Coskun M, Ayaydin H, e al. Prevalence and patterns of psychiatric disorders in referred adolescents with Internet addiction. Psychiatry Clin Neurosci 2013;67(5):352-359.*
10. *Lenhart A, Duggan M, Perrin A, et al. Teens, social media and technology overview 2015: Smartphones facilitate shifts in communication landscape for teens. Pew Research Center. 2015.*
11. *Norris ML. HEADSS up: Adolescents and the Internet. Paediatr Child Health. 2007;12(3):211-216.*
12. *Mythily S, Qiu S, Winslow M. Prevalence and correlates of excessive Internet use among youth in Singapore. Ann Acad Med Singapore 2008;37(1):9.*
13. *Whang LS-M, Lee S, Chang G. Internet over-users' psychological profiles: a behavior sampling analysis on internet addiction. CyberPsychology and Behavior 2003;6(2):143-150.*
14. *Akin A, Iskender M. Internet addiction and depression, anxiety and stress. International Online Journal of Educational Sciences 2011;3(1):138-148.*
15. *Morahan-Martin J, Schumacher P. Incidence and correlates of pathological Internet use among college students. Computers in Human Behavior 2000;16(1):13-29.*

FT84

Üçüncü Basamak Bir Hastanede Çocukların Büyümelerine Etkili Faktörlerinin Retrospektif Değerlendirilmesi

Ayşe KAMAN[1], Emine POLAT[2], Can Demir KARACAN[3]

[1]Dr Sami Ulus Kadın Doğum Çocuk Sağlığı Ve Hastalıkları Eğitim Araştırma Hastanesi, Çocuk Enfeksiyon Kliniği

[2]Dr Sami Ulus Kadın Doğum Çocuk Sağlığı Ve Hastalıkları Eğitim Araştırma Hastanesi, Çocuk Kliniği

[3]Dr Sami Ulus Kadın Doğum Çocuk Sağlığı Ve Hastalıkları Eğitim Araştırma Hastanesi, Çocuk Acil Kliniği

Amaç:
Büyüme ve gelişmenin en hızlı olduğu 0–5 yaş arası dönem, sağlıklı gelişimi olumsuz etkileyen çok sayıda etmene karşı oldukça duyarlı bir dönemdir. Bu çalışmada 5 yaş altındaki hastaların beslenme öyküleri, büyüme parametrelerini belirlemek ve bu parametreleri etkileyebilecek faktörlerin tespiti amaçlandı.

Gereç-yöntem:
Çalışmaya 6 aylık dönemde hastanede yatırılarak tedavi edilen 5 yaş altındaki çocuklar dahil edildi. Yaş, cinsiyet, boy ve vücut ağırlıkları (persantilleri), yatış tanıları, kronik hastalık ve hastanede yatış öyküsü, aşılanma durumu, ebeveyn yaşları, ebeveynlerin eğitim durumu ve ortalama gelirleri ile anne sütü alım süreleri ve ek gıdaya geçiş zamanları ile ilgili verileri geriye dönük olarak kaydedildi.

Bulgular:
Çalışmaya ortanca yaşları 8 ay (1-59 ay) olan 344 hasta (%54,7erkek) dahil edildi. Doğum sonrası hastaların %97,1'i anne sütü ile beslenmeye başlanmışken, çalışma sırasında bir yaştan büyük olanların %18'i 1 yıldan kısa süre emzirilmişti. Hastaların 6. ayda tek başına anne sütü ile beslenme oranı %30,8'di. Hastaların annelerinin eğitim durumu ve ailelerin aylık gelir düzeyleri Türkiye ortalamasından düşük bulundu. Anne-baba yaşı, ebeveyn eğitim düzeyi ve ailenin aylık geliri ile kilo ve boy persantilleri arasında ilişki saptanmadı. Anne yaşı ve annenin eğitim düzeyi ile tek başına anne sütü ile beslenme süresi arasında ilişki bulunmazken, ailenin aylık geliri arttıkça tek başına anne sütü alım süresini uzadığı tespit edildi ($p<0.05$). Anne yaşı, annenin eğitim düzeyi ve ailenin aylık geliri ile toplam anne sütü ile beslenme süresi arasında ilişki saptanmadı. Hastaların tek başına anne sütü alımı süreleri arttıkça kilo ve boy persantillerinin istatistiksel olarak arttığı tespit edilirken ($p<0.05$) toplam anne sütü alım süresi ile kilo ve boy persantil değerleri arasında ilişki bulunmadı.

Sonuç:
Ülkemizde erkek ve kadın arasındaki eğitime katılım farklılığı halen devam etmektedir. Ailenin aylık geliri tek başına anne sütü ile beslenme süresi üzerine etkilidir. Anne sütü alım süresi büyüme parametreleri üzerine en etkili faktördür.

Keywords:*Büyüme, emzirme, süt çocuğu, yetersiz beslenme*

Introduction:

Growth follow-up of a child is the best and easiest indicator for assessing the health status. Child growth may be influenced by environmental factors as well as genetic factors. Inadequate food intake and frequent infections are the two most important causes of growth retardation in many developing countries. Knowledge of normal growth and development of children is essential for identifying deviations from normal conditions and preventing diseases. During the first five years of life, children are highly sensitive against factors that adversely affect development. Monitoring of the growth and development of children is an important component of primary health care services (1). It is an important issue that the records including measurements of height and weight in health institutions are completely kept in order to make the follow-up of patients complete. The aim of this study was to determine the nutritional history and growth parameters of patients under 5 years of age and the factors that might affect these parameters in a tertiary care hospital.

Material-methods:

The study included children who were hospitaized under 5 years of age at a tertiary care pediatric hospital in a six-month period. Data regarding age, sex, residence city, height and wieght measurements and percentiles, reason for hospitalization, comorbid disease, previous hospitalization history, vaccination status, age of parents, education levels of parents, average monthly familiy income, smoking exposure history, duration of total breastfeeding, and the duration of exclusive breastfeeding were recorded retrospectively. Weight for age and height for age percentile values calculated by the curves of Neyzi et al was used to determine the growth status of patients (2). The patients were classified according to ≤25 percent, 25-50 percent, 50-75 percent and ≥75 percent in order to make comparisons in binary analyzes.

Data were entered to a database and statistical analyses were performed using IBM SPSS Statistics, Version 16.0. The variables were investigated using visual and analytical methods (Kolmogrov-Simirnov/Shapira-Wilk test) to determine whether or not they are normally distributed. Descriptive analyses were presented using means ± standard deviations for normally distributed variables and as medians (minimum-maximum) for the non-normally distributed and ordinal variables. The Chi-square test or Kruskal Wallis test were used to compare twoe groups. A p-value less than 0.05 was considered as statistically significant result.

Results:

Three-hundred and forty-four patients (54.7% male) under five-years of age were included in study. One hundred and eighty-eight (54.7%) of the patients were male and 156 (45.3%) were female. The median of patients age was 8 months (range; 1-59 months) and mean age was 15,5±16 months. Most common hospitalization reasons were acute lower respiratory tract infection by 47% (n=162), soft tissue infection by 13.3% (n=46), acute fever without a focus by 8.1% (n=28), respectively.

According to gestational week, 11% of the patients were born <37 weeks, 86.3% were born 37-42 weeks, and 2.7% were born ≥42 weeks. Seven patients (2%) had a history for delivery at home. Fifty-three percent (n=179) of the patients were born by normal spontaneous vaginal route and 23.4% (n=75) had kinship between their parents. The median number of living siblings of patients was 1 (range:0-7) and mean sibling number was 1.17±1.3. Eigtheen (5.4) patients had a history of sibling death. According to the vaccination program, 96.2% (n=329) of the patients were fully vaccinated according to their age. Twelve patients had incomplete vaccines for their age, while one patient had no vaccines. The age distribution and the educational level of the parents, and the average monthly family incomes are shown in Table 1. The distribution of patients according to body weight and height percentiles is shown in Figure 1. No significant relationship was found between the age and education level of the mother, the age and education level of the father and the weight and height percentiles (p>0.05). In addition, no statistically significant difference was found between

the monthly average income of the family and the weight and height percentiles of the patients (p> 0.05). There was no statistically significant relationship between the number of living siblings and weight and height percentile values (p> 0.05). Seventy percent (n=243) of the patients included in the study had data on tobacco exposure and 45.7% (n=111) of these patients had history for tobacco exposure with least one person living with home. There was no significant correlation between the weight and height percentile values of the patients and tobacco exposure (p> 0.05). While 3.8% (n=13) of the patients had comorbid disease, 38.1% (n=130) had a previously history of hospitalization for various reasons. While there was no significant relationship between body height percentiles and previously hospitalization history (p> 0.05), body weight percentiles were significantly lower in patients with a previously hospitalization history than those without hospitalization history (p <0.05).

Eighty-eight percent of the patients data about breastfeeding were achieved from medical records while 66.9% and 43.3% of the patients had records about vitamin D prophylaxis and iron prophylaxis, respectively (Table 2). While 97.1% of the mothers were initiated breastfed after the delivery, 18% of those older than 1 years were breastfed for less than 1 year. However, the rate of exclusively breastfeeding at the 6 months of age was 30.8% in patients older than 6 months during the study. There was no correlation between age of parents, parental education level, family income and weight and height percentile. There was no correlation between age and educational level of mother and the duration of exclusive breastfeeding (p>0.05), but the duration of exclusive breastfeeding was positive correlated with the monthly family income (p=0,018). It was found that wieght and hight percentages were statictically positive correlated with exclusive breastfeeding duration (p=0.046 and p=0.021), but there was no correlation with total breastfeeding duration. There was no statistically significant difference between age of onset of complementary feeding and weight and height percentile values (p> 0.05). As the education level of the mother increased, the duration of vitamin D usage was found to be longer (p <0.001).

Discussion

The immune system uses a broad nutritional requirement during infection to combat the pathogen, and infections can result in a reduction in the positive effect of nutrition on child growth (3) In our study, which included patients under 5 years of age, the most common diagnosis was lower respiratory tract infections and the majority of patients were younger than 1 year of age. Approximately one third of the patients had been hospitalized previously for various reasons and their weight percentiles were significantly lower. It has been reported that educational level of both parents has an effect on the growth parameters of children (4). In a study conducted in our country, it was found that weight and height percentiles do not differ according to gender and education of the mother(5). In a study conducted in Nepal, maternal age at birth, birth interval, father's education level, socioeconomic status and monthly income of the family, bottle feeding,total breastfeeding time, exclusive breastfeeding time, and time to start complimentary food have been reported to be determinants of acute malnutrition in children under 5 years of age (6). In our study, there was no correlation between age, education level of the parents and the average monthly income of the family and the weight and height percentiles of the patients.

According to data from Turkey, it is known that approximately 97% of mothers started breastfeeding after birth. It has been shown that 58% of babies are exclusively breastfed in the first two months of life, but it has decreased over the years. Although the number of babies who have never been breastfed is very low, it is reported that ready-made formula is used extensively in the first months of life. Although breastfeeding initiation widespread in Turkey, exclusively breastfeeding habit is not at the desired level [7,8]. According to World Health Organization 2005 data, breastfeeding rates of young, unmarried mothers with low educational level and low monthly income were found to be lower (9). In a study conducted in our country, it was found that the education level, age and income

of the familiy did not affect the duration of exclusively breastfeeding (10). In our study, there was no correlation between maternal age and education level and duration of exclusively and total breastfeeding. However, as the monthly income of the family increased, the duration of exclusively breastfeeding was prolonged. It was found that exclusively breastfeeding duration and weight and height percentages of the patients were directly proportional, but total breastfeeding duration and age of onset of additional food were not correlated with weight and height percentile values

In conclusion, lower respiratory tract infections are the most common cause of hospitalization in childhood, and infections that require hospitalization cause poor weight gain. In our study group, the difference in participation to education between men and women still continues. Monthly income of the family maybe effective on the duration of breastfeeding alone. Parental education level, age of parents and monthly average income of the family may not affect the growth parameters, but the duration of exclusively breastfeeding alone is the most effective factor on growth parameters.

References

1- *Evliyaoğlu N. Sağlam çocuk izlemi. Türk Pediatri Arşivi 2007;42:6-10.*
2- *Neyzi O, Günöz H, Furman A, et.al. Türk çocuklarında vücut ağırlığı, boy uzunluğu, baş çevresi ve vücut kitle indeksi referans değerleri. Çocuk Sağlığı ve Hastalıkları Dergisi 2008; 51: 1-14.*
3- *Dewey KG, Mayers DR. Early child growth: how do nutrition and infection interact? Matern. Child Nutr 2011;3:129-42.*
4- *Mushtaq MU, Gull S, Khurshid U, et.al. Prevalence and socio-demographic correlates of stunting and thinness among Pakistani primary school children. BMC Public Health 2011;11:790.*
5- *Akova S, Yazar AS, Güven Ş, et.al. Anne sütü alan bebeklerin 0-36 ay arası büyüme ve gelişmelerinin değerlendirilmesi. Dicle Tıp Dergisi 2012; 39: 542-546.*
6- *Pravana NK, Piryani S, Chaurasiya SP, et.al. Determinants of severe acute malnutrition among children under 5 years of age in Nepal: a community-based case-control study. BMJ Open. 2017;7: e017084.*
7- *Hacettepe Üniversitesi Nüfus Etütleri Enstitüsü (2009). "2008 Türkiye Nüfus ve Sağlık Araştırması". Hacettepe Üniversitesi Nüfus Etütleri Enstitüsü, Sağlık Bakanlığı Ana Çocuk Sağlığı ve Aile Planlaması Genel Müdürlüğü, Başbakanlık Devlet Planlama Teşkilatı Müsteşarlığı ve TÜBİTAK, Ankara, Türkiye.*
8- *Hacettepe Üniversitesi Nüfus Etütleri Enstitüsü (2014), "2013 Türkiye Nüfus ve Sağlık Araştırması". Hacettepe Üniversitesi Nüfus Etütleri Enstitüsü, T.C. Kalkınma Bakanlığı ve TÜBİTAK, Ankara, Türkiye.*
9- *Centers for Disease Control and Prevention (CDC). Int. Progress in increasing breastfeeding and reducing racial/ethnic differences - United States, 2000-2008 births. MMWR Morb Mortal Wkly Rep 2013. Available from https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6205a1.htm.*
10- *Gün İ, Yılmaz M, Şahin H, et. al. Kayseri Melikgazi Eğitim ve Araştırma Bölgesi'nde 0-36 aylık çocuklarda anne sütü alma durumu. Çocuk Sağlığı ve Hastalıkları Dergisi 2009; 52: 176-182.*

Table 1. Age distribution of parents and educational levels of parents

Study variable	Data	n (%)
Mother age		
<18 y	7	2.1
18-25 y	102	30.4
25-35y	188	56.1
≥35 y	38	11.3
Father age		
<18 y	1	0.3
18-25 y	33	10
25-35 y	206	62.2
≥35 y	91	27.5

Educational level of mother		
Illiterate	13	5,9
Elementary school graduate	67	74
High school graduate	18	14.2
Graduated from a Universty	13	5.9
Educational level of father		
Illiterate	4	1.8
Elementary school graduate	132	60.3
High school graduate	64	29.2
Graduated from a Universty	19	8.7
Aylık Ortalama Gelir		
≤MW	74	33.3
MW-1.5 fold of MW	98	44.1
1.5 fold of MW-2 fold of MW	29	13.1
>2 fold of MW	21	9.5

MW: minimum wage

Table 2. Duration of breastfeeding, time to start complementary food , duration of vitamin D and iron prophylaxis

Study variable	n	(%)
Exclusively breastfeeding duration	304	88,4
None	10	2,9
0-1 month	41	11,9
1-6 month	56	16,3
6 month	95	27,6
6-12 month	11	3,2
Still exclusively breastfeeding	91	26.5
Total breastfeeding duration	306	89
None	10	2.9
0-1 month	9	2.6
1-6 month	27	7.8
6-12 month	26	7.6
>12 month	49	14.2
Still breastfeeding	185	53.8
Time to start complementary food	303	88
<6 month	33	9.3
At 6th month	119	34.5
6-12 month	14	4
>12 month	4	1.1
Not yet started	133	38.6
Duration of vitamin D prophylaxis	230	66.9
None	18	5.2
0-1 month	2	0.6
1-6 month	12	3.5

6-12 month Still taking prophylaxis	43 155	12.5 45.1
Duration of iron prophylaxis 0-6 month 6-12 month >12 month Not yet started	149 13 17 4 115	43,3 3.7 4.9 1.1 33.4

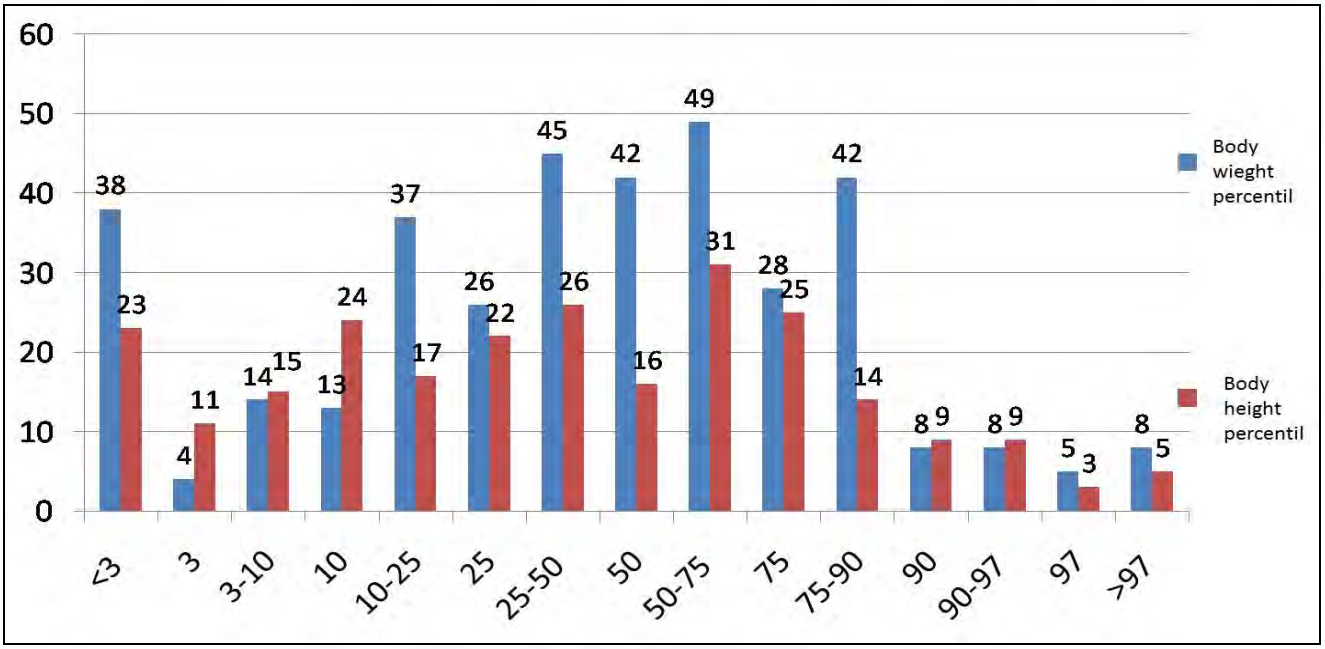


Figure 1. Distribution of weight and height percentiles of patients

FT85

Kommerell's Dıvertıculum Assocıatıon Of Aberrant Left Subclavıan Artery And Rıght Arcus Aorta In An Adolescent

Adolesan Olguda Kommerell Divertikülü, Aberran Sol Subklaviyen Arter Ve Sağ Arkus Aorta Birlikteliği

Hüseyin Yılmaz[1] , Mehmet Burhan Oflaz [1], Emin Ünal[1] ,Muhammed Güneş[1], Fatih Şap[1], Tamer Baysal[1]

[1]Necmettin Erbakan University, Meram Medical Faculty, Department of Pediatrics, Division of Pediatric Cardiology, Konya, Turkey

Özet:
Konjenital aortik ark anomalileri brakiyal arkın embriyolojik gelişiminde ki hatalardan kaynaklanmaktadır. Sağ aortik ark ve aberran sol subklaviyan arter hastalarında Kommerell divertikülü, arka sol dördüncü aortik arkın embriyolojik bir kalıntısıdır. Trakea veya özefagusa basıya bağlı havayolu darlığı ya da disfaji belirtileri gösterebilir. Asemptomatik olan vakalar bazen farklı görüntülemelerin yapıldığı esnada tanı alabilir. Burada tonsillektomi yapılması planlanan hastanın bradikardilerin olması nedeni ile bakılan ekokardiyografisinde subkostal görüntülemede aortada çift akım paterni izlenmesi üzerine çektirilen torakal BT anjiyografi sonucunda Sağ arkus aorta,aberran sol subklaviyen arter (ASSA) ve Kommerell divertikülü anomalisi olduğu tespit edilen bir olgu sunulmaktadır. Belirgin bir şikayeti olmayan hastalar erken anevrizma oluşumunu tespit etmek ve mediastinal yapılara olabilecek bası nedeniyle yakından izlenmelidir.

Anahtar Kelimeler: *Disfaji, sağ arkus aorta, Kommerel divertikül, aberran sol subklaviyan arter*

Abstract:
Congenital aortic arch anomalies are caused by errors in the embryological development of the brachial arch. In patients with right aortic arch and aberrant left subclavian artery, Kommerell diverticulum is an embryological residual tissue of the posterior left fourth aortic arch. This anomaly may present with signs of airway stenosis or dysphagia due to compression of the trachea or esophagus. Asymptomatic cases can be diagnosed at the time of different imaging. Here, a case is presented, aberrant left subclavian artery and Kommerell diverticulum in the right arcus is depicted in thoracic CT angiography imaging after an subcostal echocardiographic examination revealed a double-flow pattern in aortic view due to bradycardia was detected in patient's evaluation for pre-op tonsillectomy. Patients without significant complaints should be monitored closely to detect early aneurysm formation and compression to the mediastinal structures.

Keywords: *Dysphagia, right aortic arch, Kommerell diverticulum, aberrant left subclavian artery*

Introduction

Aortic arch anomalies can be seen alone or with congenital heart anomalies or genetic syndromes (1). Congenital aortic arch anomalies result from abnormal development of the aortic arch and its branches, and encompasses a wide heterogenous spectrum with or without a vascular ring (2). The association of right aortic arch and aberrant left subclavian artery (LSCA) is rare and is an anatomic feature observed in approximately 0.06% to 0.1% of the healthy population. The Kommerell diverticulum in patients with right aortic arch and aberrant LSCA is an embryologic remnant of the

posterior left fourth aortic arch (3). We present a case of Kommerell diverticulum, LSCA and right aortic arch who diagnosed while evaluation of pre-operatively for adenoidectomy.

Case

A 12-year-old male patient was referred to our clinic because of bradycardia on ECG before adenoidectomy. All systemic examination findings were normal. ECG was in sinus rhythm, normal QRS axis, rate: 60/min, PR: 120ms, QTc: 400ms. Echocardiographic examination revealed normal cardiac cavities and functions (EF:77%, FS:45%). Patient with right aortic arch showed at subcostal imaging a double flow pattern in the aorta view. Thoracic CT angiography was performed for the differential diagnosis of vascular anomalies and right aortic arch, aberrant LSCA and Kommerell diverticulum was detected (Figure 1). When the patient's history was questioned again with these findings, it was learned that he had occasional swallowing and sore throat problems while eating. Barium esophageal examination revealed compression of the posterior-left side at the proximal level of the esophagus (Figure 2).

Discussion

Clinical appearance of aortic arch anomalies are variable due to compression of vascular anomaly. Infants and children may present with signs related to compression of mediastinal structures such as the trachea or the esophagus or anomalies can be found incidentally during imaging studies obtained for other reasons (2). In normal embryologic development, the right 4th arch regresses while the left 4th arch gains continuity and forms a normal left arch (4). If the arcus anomaly, which arises as a result of insufficient regression of aortic arches and forms ring formation, these cases become symptomatic at neonatal and early infant periods. Respiratory distress and feeding problems can be seen due to compression of the trachea and esophagus.

In our case, aortic arch was enlarged as a diverticulum in the transverse aortic line from the descending aorta to the right (Kommerell diverticulum) and it was seen that the left subclavian artery was separated aberrantly from the top of this structure. Barium esophageal x-ray showed vascular compression from the left posterior aortic arch in the proximal part of the esophagus. In his history, he had a feeling of stuck in the throat from time to time but did not describe clinically significant respiratory symptoms. Pediatric gastroenterological evaluation revealed that the patient's symptoms are mild and did not require surgical intervention and clinical follow-up was taken.

Conclusion: Patients without surgical correction of aortic arch anomalies and Kommerell diverticulum should be closely monitored to detect early aneurysm formation and pressure to the mediastinal structures.

References

1. *Guron N, Oechslin E, .Congenital Aortic Arch Anomalies: Lessons Learned and to Learn; Canadian Journal of Cardiology 2019;35:373-375*
2. *Jadranka Stojanovska J. Cascade P. , Suzanne Chong S. , et all. Embryology and Imaging Review of Aortic Arch Anomalies J Thorac Imaging 2012;27:73–84*
3. *Luciano D., Mitchell J., Fraisse A., et All Kommerell Diverticulum Should Be Removed in Children With Vascular Ring and Aberrant Left Subclavian Artery Ann Thorac Surg 2015;100:2293–7*
4. *Matherne GP, Lim DS. Double aortic arch. In: Allen HD, Driscoll DJ, Shaddy RE, Feltes TF, editors. Moss & Adamsheart disease in infants, children & adolescents: including the fetus and young adults. Philadelphia: Lippincott Williams & Wilkins; 2008. p. 749-52*

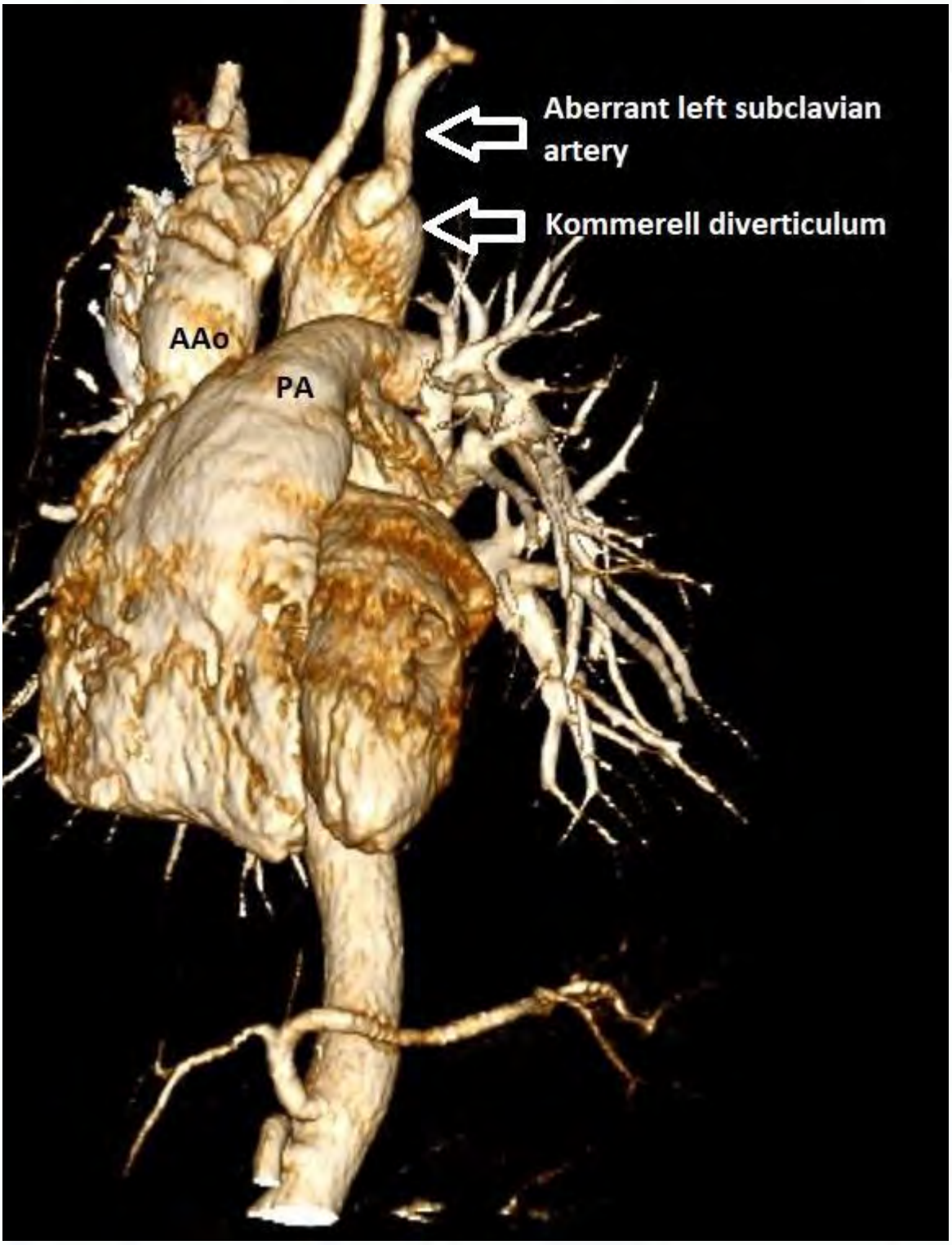


Figure1: CT angiographic examination of the thoracic aorta reveals the right aortic arch extending from the descending aorta to the transverse aorta line (Kommerell diverticulum) and aberrant left subclavian artery was separated from the top of this structure.
AAo: Aorta Ascendens PA: Pulmoner artery

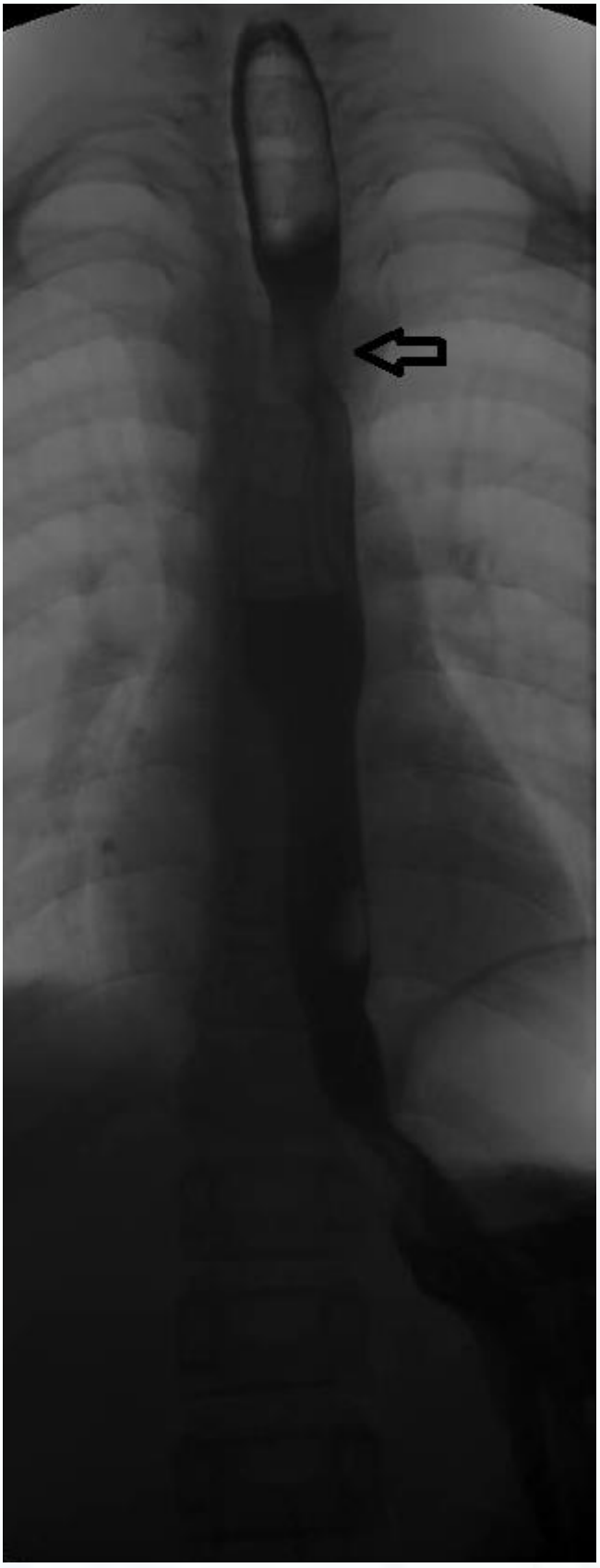


Figure 2: Esophageal x-ray with barium shows vascular compression (arrow) in the proximal part of the esophagus due to aortic arch.

FT86

Assessment Of Neonatal Morbidity And Maternal Risk Factors İn Term And Small For Gestational Age (SGA) Babies

Hasret Ayyıldız Civan, MD

Consultant of Pediatric Gastroenterology, Hepatology and Nutrition

Dr.Sadi Konuk Training and Research Hospital/Istanbul

Introduction and Objective:
Small for gestational age (SGA) births with multiple aetiologies may lead to short and long term morbidities in babies. In current study we aimed to assess the rate of SGA births, morbidity rates, postnatal complications and maternal risk factors.

Methods and Materials:
A group of 110 babies born in between 38th and 42nd gestational weeks with a birth weight below 10th percentile of their gestational age and other 110 babies, as control group, having similar gestational ages with a birth weight between 10th and 90th percentile were included in our study retrospectively. Forms to find out potential maternal and fetal risk factors for SGA births were filled up during face to face interviews. All of the babies were assessed in compliance with Lubchenko's maturity and intrauterine growth curves. Accordingly, babies with a birth weight below 10th percentile of their gestational age were classified as SGA whereas those between 10th and 90th percentile were regarded as appropriate for gestational age (AGA)

Results:
SGA prevalance in the study population was 6% and the ratio of female/male was found to be 2.05. SGA babies had 2,57 times higher risk of having SGA siblings compared to control group. The most common cause of SGA births was oligohydramnious with a rate of 50%, which was followed by preechlampsia (25,5%) and fetal causes (7,2%), respectively. In addition, the rate of hypoglycemia and polycytemia (14,5% and 14,5%) in SGA group was significantly higher than that of control (0,9% and 1,8%) group (p values; 0,0001 and 0,001, respectively). The risk of developing hypoglycemia in SGA babies was increased by 18,55 times and polycytemia 9,19 times.

Discussion and Conclusion:
SGA births were significantly related to morbidity and mortality. Therefore, pregnant women should be meticulously screened in terms of serious risk factors such as preterm labour and intrauterine growth retardation (SGA in particular) and prenatal surveillance should be performed carefully to avoid adverse events of birth.

Key Words: *small for gestational age, morbidity*

Introduction

Annually, almost 20 million babies are born small for their gestational age (SGA) worldwide (1). While low birth weight occuring frequently in relation with preterm birth and intrauterine growth retardation (IUGR) escalates into a severe public health issue, every year almost 29.7 million SGA babies reaching the full-term (>37 weeks) are born, additionally (2). SGA was defined by World Health Organisation and American Association of Obstetrics and Gynecology as the birth weight being below the 10th percentile of population and gender specific intrauterine growth curves for

gestational age (3,4). In SGA and preterm birth with low birth weight, coexistence of low birth weight and SGA makes the presentation more serious(2). Prevalance of low birth weight in communities is an important predictor to survey neonatal health associated with socioeconomical state. Thus, prevalance of SGA varies widely based on populations chosen in epidemiologic studies and international studies predict it in between 8.6% and 9.6%. Moreover, this rate rises in underdeveloped or developing countries and goes beyond 50% in some countries(2). Although many factors such as fetal (chromosomal anomalies), maternal (socioeconomical state, nutrition, smoking, alcohol, preeclampsia, multiple pregnancies, placental insufficiency) and environmental (infections, intoxications) effects are thought to have a role in multifactorial occurence patterns, its etiology is still ambiguous (5,6). In addition, increased mortality and morbidity is noted in neonatal and postnatal period of SGA babies. Being SGA has also some lifelong consequences (2,5). In this context, being SGA was reported to be accompanied by a lifelong broad spectrum of clinical presentations, namely cardiovascular diseases, neurodevelopmental and growth failure, insulin resistance, hypertension, metabolic syndrome and obesity as well as neonatal infections and perinatal respiratory disease (7,8). In our study we aimed to evaluate SGA birth rates, morbidities, postnatal complications and maternal risk factors of full-term SGA babies.

Methods

In the study, 110 SGA babies born from May 1st, 2009 to May 1st, 2010 in between 38th and 42nd gestational weeks with a birth weight below 10th percentile of their gestational age were included. For the control group, 110 AGA neonates born on the same days in similar gestational weeks with a birth weight between 10th and 90th percentile were included. Written and verbal informed consents were obtained from the mothers of both study and control groups before the research enrolment. Forms created in compliance with the study goals, which contained various parameters to find out potential prenatal risk factors for SGA births were filled up during face to face interviews with mothers. Maternal obstetric history (gravidity, parity, abortus etc.), smoking during the pregnancy, presence of chronical illness such as diabetes mellitus(DM) type I, DM type II, gestational DM (diabetes of pregnancy), hypertension, hyperthyroidism and hypothyroidism, drugs taken during pregnancy and former delivery of SGA infants were questioned and recorded along with regular demographic data including age, height and weight. From the neonatal risk factors; gender, birth weight, birth length, head circumference at birth, mode of birth (caesarean/ vaginal delivery) , other risk factors leading to SGA births, any hospitalization to the neonatal intensive care unit (NICU), diagnosis and follow-up length in case of hospitalization to a NICU and presence of issues commonly encountered in SGA babies such as hypoglycemia, polycytemia, hypothermia, hypocalcemia, jaundice, difficulty of nutrition were also questioned and put on file. Babies were examined after the delivery and their anthropometric assessments(weight, length, head circumference) were carried out. The gestational age of each neonate was determined by using Dubowitz Scoring Method. Birth weights and their gestational age were evaluated by using Lubchenko's maturity and intrauterine growth curves. Babies with a birth weight below 10th percentile of their gestational age were regarded as SGA whereas those between 10th and 90th percentile were classified as appropriate for gestational age (AGA) and those above 90th percentile as large for gestational age (LGA). Stillbirths and LGA babies were excluded from the study and control groups. The whole set of data collected throughout the study was recorded, filed and compared between groups.

Statistical Analysis

In our study, the version 21.0 of SPSS (Statistical Package ort he Social Sciences, IBM, Armonk, NY, USA) software was used. Definitive statistics was expressed as mean±standard deviation or median (minimum-maximum) for discrete and continuous numerical variables and as number of

cases with percentage for categorical variables. Cross table statistics were used in comparison of categorical variables (chi-square, Fisher). Normally distributed parametric data were analyzed with Student t-test and ANOVA, whereas abnormally distributed non-parametric data were compared by using Mann Whitney U and Kruskal Wallis tests. Comparisons between multiple groups were performed with Post Hoc Tukey analysis. Taking the distribution of variables into account, correlation between measurements was evaluated with Spearman's Rho and Pearson tests. Statistical significance was defined as $p<0.05$ in results.

Results

During the study period, a total of 2582 live births of 38 to 42 gestational weeks occured in our hospital. The prevalence of single and live born SGA babies was found to be 6% (n=154). 110 of those with parents who gave consent were recruited to the study group. From the SGA born babies, 74 were female (67,3%) and 36 male (32,7%), where the ratio of female/male was 2,05. The control group was composed of 57 female (51,8%) and 53 male (46,4%) neonates. The rate of female neonates in the study group 67,3%) was noted to be significantly higher than that of control group (52,7%) (p=0,028). Overall, birth weights in 3,6% (n=4) of our sample group were below 2000gr. In the study group, mean birth weight was 2272,45±132,35 gr, mean birth length 48,33±0,84 cm and mean head circumference 33,84±0,85 cm, while they were 3110,55±349,58 gr, 49,29±0,81 cm and 34,56±0,43 cm in the control group, respectively. Unsurprisingly, mean values of birth weight, birth length and head circumference measured in SGA group were found to be significantly lower than that of control group.(p=0,0001, 0,0001 and 0,0001, respectively)(Table 1.). Although no statistically significant difference was detected between groups in terms of SGA siblings, the probability of having a SGA sibling was measured to be 2,57 times higher in SGA study group compared to AGA babies. In addition, 25 of SGA babies (22,7%) were born by cesarean section and 85 (77,3%)by normal spontaneous vaginal delivery. No significant difference was observed between SGA-born study group and AGA-born control group upon mode of delivery.(p=0,221)(Table 2).

In our study, mean age of mothers from the case group was 27,98±5,81 years and that from the control group 28,1±5,26 years (p=0,874). Additionally, no significant difference was noted between groups regarding mean parity and duration of hospitalization (p values; 0,304 and 0,595 respectively)

Oligohydranmnios was determined as the most common prenatal cause of SGA with a frequency of 50%, which was followed by preeclampsia with a rate of 25,5% and fetal causes in 7,2% (chromosomal abnormalities in 0.9% of patients, TORCH infections in 1,8% and fetal malnutrition in 4,5%).

When comparing causes of hospitalization between groups, no significant difference (p>0,05) was found regarding presence of respiratory distress syndrome (RDS), hyperbilirubinemia and transient tachypnea of the newborn (TTN), whereas RDS frequency of SGA group was found to be 2,52 times higher than that of controls.

In addition, hypoglycemia (8,2%) and polycytemia (7,3%) rates in SGA group were shown to be significantly higher than those in AGA group (1,8% and 1,8%)(p values; 0,027 and 0,049 respectively)

No significant difference (p>0,05) was detected between SGA and AGA groups regarding presence of infections, hypothermia, respiratory problems and mode of treatment for jaundice. In contrary, the rate of hypoglycemia in SGA group (14,5%) was found to be significantly higher than that in AGA group (p=0,0001). In SGA-born babies, the risk of developing hypoglycemia was determined as 18,55 times higher. Similarly, polycytemia rate of SGA group (14,5%) was significantly higher than that of AGA group (1,8%)(p=0,001). Risk of developing polycytemia in SGA-born babies was increased by 9,19 times. While no significant difference was observed between groups regarding difficulties of nutrition and occurence of convulsion, risk of developing nutritional problems and occurence of convulsion were calculated as being 4,23 and 3,2 times higher in SGA babies.

Additionally, no significant difference was observed between groups regarding presence of hypocalcemia and maternal smoking, whereas risk of developing hypocalcemia in SGA neonates is increased by 7,19 times and the risk of developing SGA in babies of smoking mothers by 1,5 times.(Table 3).

Discussion

Being born SGA carries increased lifelong morbidity and mortality risk covering perinatal, chilhood and adulthood period. In addition to many diseases such as nutritional, cardiovascular, metabolic and neurodevelopmental issues defined so far, these risks may also rise to serious levels in case of failed catch-up growth. High insidence rates and adverse results documented for SGA births obligate analysis of risk factors as correctly and precisely as possible together with efficacious screening programs and treatment procedures (9). Neonatal morbidity risk is directly associated with gestational age and birth rate (10). Preterm labour, preterm delivery and SGA are intersecting definitions due to their etiological, pathophysiological and adverse outcomes and presence of low birth weight leads to further complications. More than half of the low birth weight deliveries are caused by preterm birth (11). Thus, premature neonates born before 38th week were excluded from our trial.

The prevalence of SGA babies is closely related to the socioeconomic status of the countries. In a research from United States, the frequency of SGA births in the population was 2,3%.(12). In asian countries, however, it ranged between 5,3% and 41,5% in different studies.(2).

Moreover, birth weights of female babies are reported to be 118-121 gr less in avarage than those of males. Also, female gender is associated with an 20% increased risk of SGA births and reported as having 2,5 times increased risk of IUGR (13). When considering all single and live births during our research, the prevalence of SGA births was determined as 6%.

On the other hand, the ratio of female babies in SGA group was noted to be significantly higher than that of controls and female to male ratio was calculated as being 2.05 in the study population. Variations in mitochondrial genome may play a major role influencing neonatal birth weight, as some recent studies could strongly relate birth weight of the baby as an inherited feature to the maternal birth weight (9). In addition, there are reports suggesting an elevated risk of SGA birth for women with a sister who gave a SGA birth (14).

Although no statistically significant difference was detected in our study between groups in terms of SGA siblings, the probability of having a SGA sibling was found to be 2,57 times higher in SGA study group compared to AGA babies,, supporting formerly published data.

The influence of maternal age on SGA birth is one of the most debated issues investigated. In fact, women from 20 to 29 years old are believed to constitute the group with the lowest maternal and perinatal mortality and morbidity. Though a series of research reported an elevated risk of SGA birth in women of 35 years and above, there are also other authors defending that advanced age is not among risk factors of SGA birth.(15,16). While low birth weight(LBW), very low birth weight(VLBW), early preterm labour, anemia and IUGR are more frequent in adolescent pregnancies, advanced age (>35 years) pregnancies lead to more common LBW babies, birth weights above 4000gr, stillbirths and increased perinatal mortality.(17)

In their meta analysis covering 14 published studies on SGA birth risk associated with maternal age, Kozuki et al.reported that the highest risk of SGA birth was in mothers of 18 years and below along with an increased risk also in mothers above 35 years.(18). In our study, no statistically significant difference was found between mothers of SGA group and controls in terms of age. However, in SGA group 7 mothers were below 20 years and 13 were above 35 without any case below 15 years. There was only one mother above 35 years in control group.

Currently, lots of maternal risk factors leading to SGA births have been identified. Some major factors among them are smoking, alcohol, nutirional issues, past preterm or SGA births, multiple

pregnancy and maternal chronic illnesses.(19). No doubt, smoking is one of the most important SGA birth risk factors being dose-dependent and putting back the fetal growth (20). Smoking is blamed for 15% of preterm births, 20-30% of LBW babies and for a 50% increase in perinatal mortality (21). Wang et al. concluded that smoking during pregnancy is associated with a drop of 377gr in birth weight(22). Maternal nutrition has also well-known effects on birth weight. Limitation of calorie intake and inadequate maternal body weight is also associated with LBW (9).

Mitchell et al. revealed that mothers of AGA babies are nourished with a rich diet which contains significantly more fruits, vitamin supplementations and higher amounts of carbohydrates, meat and fish compared to those of SGA babies (23). Additionally, past obstetric history is also closely related to adverse birth outcomes. Kleijer et al. reported that past history of SGA birth increases the SGA risk by 4 times(15).

Multiple pregnancies are regarded as a risk factor for both LBW and preterm birth. Many studies reported that mean birth weight drops progressively with multiple deliveries (9). In the research of Blondel et al., twin births in particular were found to increase the risk of preterm birth and LBW more than triple births (24). Similarly, the findings of our study analyzed together with whole data showed a 1,5 fold increase in SGA birth risk while smoking during pregnancy and 2,57 fold increase in SGA birth for mothers with past SGA birth.

Maternal chronic diseases and hypertension, in particular, were found to be associated with increased perinatal mortality in SGA and preterm births. In pregnant women with chronic hypertension, the rate of giving SGA births is increased compared to normal population, whereas the rates of preterm birth and perinatal mortality did not differ significantly.(25)

In babies of hypertensive mothers, the frequency of IUGR was reported as 45.4% in literature (26). As hypertension is one of the major risk factors of SGA births, the risk is increased by 2.9 fold in case of hypertension and by 18.7 fold in preeclamptic pregnancies with an attributed risk of 28,4%. Grisaru et al declared that there was no significant difference between groups in terms of hypertension in their study, however mothers of SGA births with hypertension had significantly more past history of SGA birth and that was a result of negatively affected fetal growth factors due to hypertension.(27)

In compliance with the published data, our study showed that rate of hypertension is increased by 6,4 fold in mothers of SGA babies.

In the study of Hadders et al. comparing full term and preterm SGA neonates to AGA neonates, 19% of full term SGA births were associated with preeclampsia whereas it was 59% in preterm SGA births(28). Ley et al. found the rate of preeclampsia as 8% in mothers of AGA babies and 44,4% in mothers of SGA babies, which bears a significant difference in SGA group (29).

In another study, preeclampsia being among the risk factors of SGA births was found to increase the development of SGA by 4 fold(30). Also in compliance with these data, our study revealed that presence of preeclamsia is a statistically significant risk factor of SGA birth and 25,5% of the study group had preeclampsia. There was no case of preeclamsia in control group.

Oligohydroamnios was also significantly associated with IUGR and SGA(31). Thus, in a meta analysis of Chauhan et al. evaluating 18 studies , pregnant women with an antepartum or intrapartum diagnosis of oligohydramnios were shown to have an elevated risk of SGA birth due to fetal distess (32). In the trial of Casey et al. carried on 6423 pregnant women above 34.gestational week, the rate of oligohydramnios was 2.3% and there revealed a significant relationship between oligohydramnios and stillbirth along with impairment on fetal monitors, neonatal mortality and SGA birth(33).

LBW in term and preterm births are suggested to be in close relation to neonatal complications such as polycytemia and hypoglycemia (34). Onyiriuka et al detected significantly higher rates of polycytemia in SGA born babies(8,2%) compared to controls(2,2%) (35). Bhat et al, on the other hand, reported a hypoglycemia rate of 25,2% in SGA births (36).In compliance with the published data, our study showed that oligohydramnios is the most common prenatally diagnosed cause of

SGA birth with a rate of 50%. In addition, the rate of hypoglycemia and polycytemia were significantly elevated in SGA neonates and the risk of developing hypoglycemia in SGA born babies was increased by 18,55 fold along with an elevated risk of polycytemia by 9,19 fold.

Conclusion

SGA birth was significantly associated with higher morbidity and mortality, supported also by the findings of our study. Therefore, pregnant women should be screened meticulously for important risk factors including preterm labour, IUGR and history of SGA birth and prenatal surveillance should be performed delicately to prevent adverse birth events. Additionally, both health professionals and families should be informed regularly about prenatal and postnatal diagnosis, follow-up and treatment.

References

1- *Black RE. Global prevalence of small for gestational age births. InLow-Birthweight Baby: Born Too Soon or Too Small 2015;81:*

2- *Lee AC, Katz J, Blencowe H, Cousens S, Kozuki N, Vogel JP, Adair L, Baqui AH, Bhutta ZA,Caulfield LE, Christian P. National and regional estimates of term and preterm babies born small for gestational age in 138 low-income and middle-income countries in 2010. The Lancet Global Health. 2013;1(1):e26-36.*

3- *WHO Expert Committee on Physical Status. Physical status: the use of and interpretation ofanthropometry, report of a WHO expert committee. Geneva: World Health Organization, 1995*

4- *American College of Obstetricians and Gynecologists. ACOG Practice bulletin no. 134: fetal growth restriction. Obstetrics and gynecology. 2013;121(5):1122.*

5- *Nam HK, Lee KH. Small for gestational age and obesity: epidemiology and general risks. Annals of pediatric endocrinology & metabolism. 2018;23(1):9.*

6- *Mericq V, Martinez-Aguayo A, Uauy R, Iñiguez G, Van der Steen M, Hokken-Koelega A. Long term metabolic risk among children born premature or small for gestational age. Nature Reviews Endocrinology. 2017;13(1):50.*

7- *Ludvigsson JF, Lu D, Hammarström L, Cnattingius S, Fang F. Small for gestational age and risk of childhood mortality: A Swedish population study. PLoS medicine. 2018;15(12):e1002717.*

8- *Lee AC, Kozuki N, Cousens S, Stevens GA, Blencowe H, Silveira MF, Sania A, Rosen HE,Schmiegelow C, Adair LS, Baqui AH. Estimates of burden and consequences of infants born small for gestational age in low and middle income countries with INTERGROWTH-21st standard: analysis of CHERG datasets. bmj. 2017;358:j3677.*

9- *Saenger P, Czernichow P, Hughes I, Reiter EO. Small for gestational age: short stature and beyond. Endocrine reviews. 2007;28(2):219-51.*

10- *Goldenberg RL. The management of preterm labor. Obstetrics & Gynecology. 2002;100(5):.1020-37.*

11- *Raine T, Powell S, Krohn MA. The risk of repeating low birth weight and the role of prenatal care. Obstet Gynecol 1994;84.: 485–9.*

12- *Talge NM, Mudd LM, Sikorskii A, Basso O. United States birth weight reference corrected for implausible gestational age estimates. Pediatrics. 2014;133(5):844-53.*

13- *Kramer MS. Determinants of low birth weight: Methodological assesment and metoanalysis. Bull WHO 1987; 65: 663- 757.*

14- *Svensson AC, Pawitan Y, Cnattingius S, Reilly M, Lichtenstein P. Familial aggregation of small-for-gestational-age births: the importance of fetal genetic effects. American journal of obstetrics and gynecology. 2006;194(2):475-9.*

15- *Kleijer ME, Dekker GA, Heard AR. Risk factors for intrauterine growth restriction in a socio-economically disadvantaged region. The Journal of Maternal-Fetal & Neonatal Medicine. 2005;18(1):23-30.*

16- *Spinillo A, Capuzzo E, Piazzi G, Nicola S, Colonna L, Iasci A. Maternal high-risk factors and severity of growth deficit in small for gestational age infants. Early human development.1994;38(1):35-43.*

17- *Verrier M, Spears W, Ying J, Kerr GR. Patterns of birth weight in relation to gestational age, maternal age, parity, and prenatal care in Texas' triethnic population, 1984 through 1986. Tex Med.3351993; 89(12):51- 6.*

18- *Fawzi W, Humphrey J. The associations of parity and maternal age with small-for-gestational-age, preterm, and neonatal and infant mortality: a meta-analysis. BMC public health. 2013;13(3):S2.*

19- *McCowan L, Horgan RP. Risk factors for small for gestational age infants. Best practice &research clinical obstetrics & gynaecology. 2009;23(6):779-93.*

20- *Cnattingius S. The epidemiology of smoking during pregnancy: smoking prevalence, maternal characteristics, and pregnancy outcomes. Nicotine Tob Res 2004; 6(2): 125–S140.*

21- *Gomez C, Berlin I, Marquis P, Delcroix M: Expired air carbon monoxide concentration in mothers and their spouses above 5 ppm is associated with decreased fetal growth. Preventive Medicine 2004;40:10- 15.*

22- *Wang X, Tager IB, van Vunakis H, Speizer FE, Hanrahan JP. Maternal smoking during pregnancy, urine cotinine concentrations, and birth outcomes. A prospective cohort study. Int j Epidemiol 1997; 26:978–987*

23- *Mitchell EA, Robinson E, Clark PM, Becroft DM, Glavish N, Pattison NS, Pryor JE, Thompson JM, Wild CJ. Maternal nutritional risk factors for small for gestational age babies in a developed country: a case-control study. Archives of Disease in Childhood-Fetal and Neonatal Edition. 2004;89(5):F431-5.*

22- *Blondel B, Kogan MD, Alexander GR, Dattani N, Kramer MS, Macfarlane A, Wen SW. The impact of the increasing number of multiple births on the rates of preterm birth and low Birth weight: an international study. American journal of public health. 2002;92(8):1323-30.*

22- *Tuntiseranee P. Geater A., Chongsuvivatwong V., Koranantakul O. The effect of heavy maternal workload on fetal growth retardation and preterm delivery. A study among southern Thai women. J Occup Environ Med 1998; 40 (11): 1013- 21.*

23- *McCowan LM, Buist RG, North RA, Gamble G. Perinatal morbidity in chronic hypertension. Br J Obstet Gynaecol. 1996; 103(2):123- 9 64.*

24- *GrisaruGranovsky S, Halevy T, Eidelman A, Elstein D, Samueloff A. Hypertensive disorders of pregnancy and the small for gestational age neonate: not a simple relationship. American journal of obstetrics and gynecology. 2007;196(4):335-e1.*

25- *Hadders-Algra M, Huisjes HJ, Touwen BC. Preterm or small-for-gestational-age infants. European Journal of Pediatrics. 1988;147(5):460-7.*

26- *Ley D, Wide Swensson D, Lindroth M, Svenningsen N, Marsal K. Respiratory distress syndrome in infants with impaired intrauterine growth. Acta Pædiatrica. 1997;86(10):1090-6.*

27- *Blumenstein M, McCowan LM, Wu S, Cooper GJ, North RA. Plasma clusterin increased prior to small for gestational age (SGA) associated with preeclampsia and decreased prior to SGA in normotensive pregnancies. Reproductive Sciences. 2012;19(6):650-7.*

28- *Johnson JM, Chauhan SP, Ennen CS, Niederhauser A, Magann EF. A comparison of 3 criteria of oligohydramnios in identifying peripartum complications: a secondary analysis. Am J Obstet Gynecol 2007;197(2):207.e1-7.*

29- *Chauhan SP, Sanderson M, Hendrix NW, Magann EF, Devoe LD. Perinatal outcome and amniotic fluid index in the antepartum and intrapartum periods: a meta-analysis. American journal of obstetrics and gynecology. 1999;181(6):1473-8.*

30- *Casey BM, McIntire DD, Bloom SL, Lucas MJ, Santos R, Twickler DM, Ramus RM, Leveno KJ. Pregnancy outcomes after antepartum diagnosis of oligohydramnios at or beyond 34 weeks' gestation. American journal of obstetrics and gynecology. 2000;182(4):909-12.*

31- *Singh G, Chouhan R, Sidhu K. Maternal factors for low birth weight babies. Medical Journal Armed Forces India. 2009;65(1):10-2.*

32- *Onyiriuka AN, Okolo AA. Small-for-gestational age, ponderal index and neonatal polycythaemia: a study of their association with maternal hypertension among Nigerian women. Annals of African Medicine 2005;4(4):154-159*

33- *Bhat MA,Kumar P, Bhansali A, Majumdar S, Narang A. Hypoglycemia in small for gestational age babies. The Indian Journal of Pediatrics. 2000;67(6):423-428*

Tables

Table1. Comparison of anthropometric measurements between study and control groups.

	Control Group (Mean±SD)	SGA Group (Mean±SD)	p- value
Birth weight (gr)	3110,55±349,58	2272,45±132,35	**0,0001***
Birth length	49,29±0,81	48,33±0,84	**0,0001***
Head circumference	34,56±0,43	33,84±0,85	**0,0001***

SD= Standard deviation

* = p<0.05 statistically significant

Table 2. Comparison of gender, mode of birth and history of SGA born sibling in SGA neonates and controls.

		Kontrol Grubu n:110		SGA Grubu n:110			OR (%95 GA)
SGA Kardeş	Yok	105	95,50%	98	89,10%	χ^2:3,12	2,57
	Var	5	4,50%	12	10,90%	p=0,077	0,87-7,56
Cinsiyet	Kız	58	52,70%	74	67,30%	**χ^2:4,85**	1,84
	Erkek	52	47,30%	36	32,70%	**p=0,028**	1,06-3,18
Doğum Şekli	NSVD	77	70,00%	85	77,30%	χ^2:1,50	1,45
	C/S	33	30,00%	25	22,70%	p=0,221	0,79-2,66

***= p<0.05 is statistically significant**

Table 3. Common neonatal morbidities and maternal smoking in study and control groups

		Kontrol Grubu		SGA Grubu			OR (%95 GA)
Beslenme Problemi	Yok	108	98,20%	102	92,70%	χ^2:3,77	4,23
	Var	2	1,80%	8	7,30%	p=0,052	0,87-20,4
Hipoglisemi	Yok	109	99,10%	94	85,50%	**χ^2:14,34**	18,55
	Var	1	0,90%	16	14,50%	**p=0,0001**	2,41-142
Konvülziyon	Yok	110	100,00%	109	99,10%	χ^2:1,00	3,2
	Var	0	0,00%	1	0,90%	p=0,316	0,12-75
Polistemi	Yok	108	98,20%	94	85,50%	**χ^2:11,86**	9,19
	Var	2	1,80%	16	14,50%	**p=0,001**	2,05-41,03
Hipokalsemi	Yok	110	100,00%	107	97,30%	χ^2:3,04	7,19
	Var	0	0,00%	3	2,70%	p=0,081	0,36-14,1
Sigara	Yok	84	76,40%	75	68,20%	χ^2:1,84	1,5
	Var	26	23,60%	35	31,80%	p=0,175	0,83-2,73

***= p<0.05 is statistically significant**

FT86

Parental relationships and delinquent behaviors of adolescents that were abused in childhood

Çocukluk çağında örselenen ergenlerin ebeveyn ilişkileri ve kuraldışı davranışları

Çağatay Özcan, Medine Ayşin Taşar, İlyas Çakır, Rukiye Ünsal Saç

Sağlık Bakanlığı Ankara Eğitim ve Araştırma Hastanesi

Abstract

Aim:

The study investigates the correlation of childhood traumatic experiences on parent-adolescent relations and delinquent behaviors, in adolescents that admitted to our Hospital, which serves to a low socioeconomic region, in Ankara.

Material and methods:

Adolescents (n:1007, range: 14-18 years old) were asked to fill a booklet including three sections: "Childhood trauma questionnaire" (CTQ), "Parent-adolescent relationship ınventory" (PARI) and "Illegal behavior scale" (IBS).

Results:

Median age was 16 years (62.3% girls), all the adolescents had low income. A history of physical abuse was reported in 25%, sexual abuse was reported in 3.5%. A positive correlation between CTQ and PARI (p=0.001, r=0.444); CTQ and DBS (p=0.001, r=0.400); PARI and IBS (p=0.001, r=0.831) were determined.

Conclusions:

In correlation to childhood traumatic experiences, adolescents who were abused had defective parental relationships and have increased tendency to delinquent behaviors. While adolescents who are describing their own family environment, indicating that there is no peace and love, there is a greater risk of traumatic experiences, negative relationships with parents and delinquent behavior.

Keywords: *Abuse, Adolescent, Child, Delinquent behavior, Neglect, Parent*

Özet

Amaç: Bu çalışmada, Ankara ilinde, düşük sosyoekonomik bir bölgede bulunan hastanemize başvuran ergenlerin, çocukluk çağındaki örselenme yaşantıları ile ebeveyn ilişkileri ve kuraldışı davranışları arasındaki bağıntıyı araştırmak amaçladı.

Greç ve yöntem: Çalışmaya alınan ergenlerden (n: 1007, yaş aralığı: 14-18 yaş) üç ayrı bölümden oluşan bir kitapçığı doldurmaları istendi: "Çocukluk örselenme yaşantıları ölçeği" (ÇÖYÖ), "Ana-baba-ergen ilişki envanteri'" (ABEİE), ve "Kuraldışı davranış ölçeği" (KDÖ).

Sonuçlar: Ortanca yaş 16 yıl olup (% 62,3 kız), tüm ergenler düşük gelire sahipti. Fiziksel istismar öyküsü %25, cinsel istismar öyküsü %3,5 sıklıkta bildirildi. ÇÖYÖ ve ABEİE arasında (p=0,001, r=0,444); ÇÖYÖ ve KDÖ (p=0,001, r=0,400) arasında; ABEİE ve KDÖ arasında (p=0,001, r=0,831) pozitif korelasyon tespit edildi.

Sonuç: Çocukluk çağında örselenme yaşantıları ile bağıntılı olarak ana-baba-ergen ilişkilerinde bozulma ve ergenlerin kuraldışı davranış eğilimlerinde artma olmaktadır. Kendi aile ortamını tariflerken, huzur ve sevgi olmadığını belirten ergenlerde, örselenme yaşantısı, ebeveynlerle olumsuz ilişki ve yasadışı davranışlara eğilim riski daha fazladır.

Anahtar Kelimeler: *Çocuk, Ebeveyn, Ergen, İstismar, İhmal, Kuraldışı davranış*

Introduction

Physical, emotional and sexual abuse in the childhood negatively effects the emotional and physical development, socialization, education, and all the normal development processes (1, 2). Compared to non-abused children, children who were abused have much higher rates of the multiple psychopathologic and physical problems (3, 4). The abuse experienced during the childhood damages the self-esteem. Such people shows anxiety, depression, suicide, antisocial disorders, eating problems, sexual disorders, use of substance, low impulse control and self-destructive behavior patterns (1, 5-8). At present, no fully satisfactory theory exists to account for the association between a history of childhood abuse and psychiatric outcomes, but the scientific literature suggests several potential mechanisms as likely candidates (9). Unhealthy attachment with the family, presence of abuse in the family, inadequate and unhealthy perception of family relations by adolescents were found to be the factors related to adolescents' inclination to crime (7, 10-15).

The objective of this study is to examine the effects of childhood traumatic experiences on the parent-adolescent communications and illegal behaviors in the adolescents living in a low socioeconomic level, by using “Childhood Trauma Questionnaire” (CTQ), “Parent-Adolescent Relationship Inventory” (PARI) and “Illegal Behavior Scale” (IBS).

Materials and Methods:

A cross-sectional study including 1007 healthy adolescents (14-18 years-old ages) was conducted at pediatrics outpatient clinics between April 2013-July 2014.

A personal information form was used to collect the sociodemographic data (gender, age, whether abused physically and/or sexually). “Childhood Trauma Questionnaire” was used for the data on the childhood abuse variable (emotional, physical, and sexual), PARI was used for the data about the parent-adolescent communication variables, and IBS was used to determine the illegal behaviors.

Childhood Trauma Questionnaire was developed to detect the childhood abuse before the age of 18 (16, 17). Higher results in the questionnaire indicate specific abuse during childhood and adolescence. Parent- Adolescent Relationship Inventory tests the parent-child relationships and the supervision of the parents over the kids using the answers of adolescents (18). The higher results of the inventory show an inadequate quality of parent-adolescent relationship and supervision. Illegal Behavior Scale is a self-reported form for 15-18 age year old adolescents (19) which aims to determine the misbehavior that was not reported to the government agencies, but which requires a punishment by law, if detected. Higher scores of the scale indicate the tendency to illegal behavior.

The data from the Turkey Labor Union Confederation was used to determine the income status (20).

This research was performed under permission by Local Education and Coordination Committee (Number: 4216). An informed consent was obtained from the adolescents and parents.

Statistical package for the social sciences (SPSS) 15.0 was used for the statistical analysis of the data. Results were accepted significant for $p<0.05$. Whether the distribution of the continuous and discrete numeric variables was close to normal was investigated by Kolmogorov Smirnov test. Adolescent’s ages and distribution of the scales' results were different from normal, so descriptive statistics were given as median (lowest-highest). Descriptive statistics were shown in the median form for continuous and discrete variables, and in percentage form for categorical variables. Importance of the significance of differences in terms of median values between groups was searched by Mann Whitney U and Kruskal Wallis tests. Spearman correlation test was performed to evaluate the correlation between median values. Categorical variables were evaluated by using Pearson’s chi-square or Fisher’s exact chi-square test.

Results

Median age of 1007 adolescents that completed the study were 16 (14-18) years, 62.3% (n=628) were females, and all had low income levels.

Of the adolescents describing the family environment, 71% stated that there was no love and peace. In addition, adolescents stated that alcohol was consumed (30%) and drug addicted (7%) in the family, 19% had imprisoned and 13% had physically disabled family members. History of physical abuse in childhood was reported by 25% (n=251) and sexual abuse by 3.5% (n=35) of the adolescents.

The median score of CTQ was 96 (40-176). Median score was 93 in adolescents who stated peace and love in the family and 110 in those who did not (p=0.001). Overall, 549 (54.5%) of the adolescents had a higher CTQ score (>96).

The median score of PARI was 101 (71-219). The median score was found 102 in those whose mothers were housewives, 98 in those whose mothers were employed (p =0.030), 103 in those with extended families and 98 in those with nuclear families (p=0.003).

Adolescents who had drug addicting and inprison family members, who were subjected to domestic violence, sexual harassment, and that there was no atmosphere of peace and love had a high median PARI score (p<0.05). The median PARI score was high in 506 (50.2%) cases (>101).

The median score of IBS was 51 (38-118), and the median score was higher in adolescents who had drug addicting, physically disabled, in prison family members, who were sexually abused, had violence in the family, and lack of peace and love (p<0.05). In 510 (50.6%) of the cases, the median score of IBS was higher (>51).

A positive correlation was found between CTQ and PARI (p=0.001, r=0.444) **(Figure 1A) (Table 1)**, between CTQ and IBS (p=0.001, r=0.400) **(Figure 1B) (Table 1)** and between PARI and IBS (p=0.001, r=0.831) **(Figure 2) (Table 2)**.

Discussion:

The child abuse and neglect is an important public health problem in all over the world. It causes harm on cognitive, behavioral, social, and emotional functions beside the physical injury on the child, and its effects continue throughout lifetime (4, 21). The pediatricians must diagnose the abuse situation at the first stage, before the child's physical and mental health gets damaged, and the necessary measures be taken properly (22).

In this study, childhood traumatic experiences, adolescent-parent relationship and the illegal behaviors of adolescents were evaluated in a low socioeconomic region in Ankara. The childhood and adolescent's abuse and neglect, deficiency in family relationships, and family conflicts are seen as one of the main reasons of illegal behaviors in adolescence (23, 24). Established relationship and the quality of connection to parents are important for the healthy development of an adolescent, and it also effects friendship relations of adolescent. Adolescents who have a trustful attachment to their parents and have a loving environment, have higher self-respect, life satisfaction, school success, less psychological disorders and are less prone to crime (5,17, 25, 26).

It is important to determine the risk groups for the illegal behaviors in adolescence. The risky behaviors constitute the most important dangers for the health and security in the period of adolescence and youth. In USA, the causes of deaths at the ages 10-24 are; 23% motor vehicle accidents, 18% accidental injuries, 15% murder, and 15% suicide (27). The violence has an increased tendency among the children and teenagers, and become a social problem according to a research conducted among the students in Turkey (28).

There is a very strong relationship between the child abuse potential and the family conflicts, family ties, marital satisfaction, parents' personal problems, and positive interaction patterns (29-31). Kaya et al. (2) stated that physical, emotional abuse-neglect can be estimated at a good level by looking at the family functions. In our study, a significant relationship was detected between CTQ and PARI. According to these results, childhood traumatic experiences can be reduced through improvements to the family functions. Therefore, we want to emphasize the importance of identifying the children and adolescents at risk, and taking the required preventive/remedial steps.

A significant relationship was found between CTQ and IBS in our study. Erel and Gölge (3) reported that increased exposure to sexual, physical and emotional abuse increases the rates of risky behaviors. People exposed to trauma in childhood, uses more stabs, conducts violence, and experience sexual intercourse at an early age (5, 6, 32).

Adolescent violence behaviors are associated with the lack of child-parent relationship, antisocial behaviors of parents, alcohol and drug use, wrong discipline and auditing practices and inadequate family functions (5, 9). However, the level or adequacy of social support received from family and friends can prevent the illegal behaviors (5, 33). Totan and Yöndem (34) found that the probability of violence and being a bully or victim decreases with the increase of the parent-adolescent relationship.

The abuse and neglect of adolescents' experience in childhood is effective on their inclination to illegal behaviors in later stages of life. Therefore, child abuse and neglect prevention is extremely important for the protection of child and adolescent health. In this study, we intend to show the importance of the early recognition of the abuse and neglect behaviors, and the devastating effects in future periods, and raise awareness among pediatricians. This is a preliminary study, and there is a need for further research.

A national registration system and a repository that is specially designed for child abuse-neglect cases must be established in Turkey. Epidemiological studies for the determination of the characteristics of abusers and victims, and of the risk factors for child abuse-neglect are necessary. National policies should be developed to avoid the disastrous consequences of the child abuse-neglect, and to protect children at high risk.

References:

1. *Mertin P, Mohr PB. Incidence and correlates of posttrauma symptoms in children from backgrounds of domestic violence. Violence Vict. 2002; 17(5):555-67.*
2. *Kaya İ, Çeçen-Eroğul AR. Ergenlerde çocukluk dönemi istismar yaşantılarının yordalayıcısı olarak aile işlevlerinin rolü. Eğitim ve Bilim. 2013; 38(168):386-97.*
3. *Erel Ö, Gölge ZB. Üniversite öğrencilerinde riskli davranışlar ile çocukluk çağı istismar, dürtüsellik ve riskli davranışlar arasındaki ilişki. Journal of Psychiatry. 2015; 16(3):189-97.*
4. *Taner Y, Gökler B. Çocuk istismarı ve ihmali: psikiyatrik yönleri. Hacettepe Tıp Dergisi. 2004; 35:82–6.*
5. *Zoroğlu SS, Tüzün Ü, Şar V, Öztürk M, Eröcal Kora M, Alyanak B. Çocukluk döneminde ihmal ve istismarın olası sonuçlarının incelenmesi. Anadolu Psikiyatri Derg. 2001; 2(2):69–87.*
6. *Smith CA, Ireland TO, Thornberry TP. Adolescent maltreatment and its impact on young adult antisocial behavior. Child Abuse Negl. 2005; 29(10):1099–119.*
7. *Ayan S. Aile içinde şiddete uğrayan çocukların saldırganlık eğilimleri. Anadolu Psikiyatri Derg. 2007; 8(3):206-14.*
8. *Karakuş Ö. Relation between childhood abuse and self esteem in adolescence. Journal of Human Sciences. 2012: 9(2):753-63.*
9. *Araújo AXG, Fontenelle LF, Berger W, et al. Pre-traumatic vs post-traumatic OCD in PTSD patients: Are differences in comorbidity rates and functional health status related to childhood abuse? Compr Psychiatry. 2018; 87:25-31. doi: 10.1016/j.comppsych.2018.08.012.*
10. *Bal S. Çocukluk örselenme yaşantıları, ana-baba-ergen ilişki biçimleri ve sosyal destek algısının kuraldışı davranışlarla ilişkisi. Yüksek lisans tezi. Çukurova Üniversitesi Eğitim Fakültesi. 2010. Adana.*
11. *Aras Ş, Günay T, Özan S, Orçın E. İzmir İlinde lise öğrencilerinin riskli davranışları. Anadolu Psikiyatri Derg. 2007; 8:186–196.*
12. *Muyibi AS, Ajayi IO, Irabor AE, Ladipo MA. Relationship between adolescents' family function with socio-demographic characteristics and behaviour risk factors in a primary care facility. PHCFM. 2010; 2:2-7.*
13. *Bayraktar F. The importance of parent/peer relationships in positive adolescent development. Turk J Child Adolesc Ment Health. 2007; 14(3):157-66.*

14. *Deniz ME. Ergenlerde bağlanma stilleri ile çocukluk istismarları ve suçluluk-utanç arasındaki ilişki. Eurasian Journal of Educational Research. 2006; 22:89-99.*
15. *Smith C, Thornberry TP. The relationship between childhood maltreatment and adolescent involvement in delinquency. Criminology. 1995; 33:451–481.*
16. *Bernstein DP, Fink L, Handelsman L, Foote J, Lovejoy M, Wenzel K, et al. Initial reliability and validity of a new retrospective measure of child abuse and neglect. Am J Psychiatry. 1994; 151(8):1132-6.*
17. *Aslan SH, Alparslan ZN. Çocukluk Örselenme Yaşantıları Ölçeği'nin bir üniversite öğrencisi örnekleminde geçerlik, güvenirlik ve faktör yapısı. Turk Psikiyatri Derg. 1999; 10(4):275-85.*
18. *Kaner S. Akran kuramına dayalı ana-baba-ergen ilişkileri ölçeği geliştirme çalışması. Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi. 2000; 33(1):67-76. DOI: 10.1501/Egifak_0000000025*
19. *Kaner S. Akran ilişkileri ölçeği ve akran sapması ölçeği geliştirme çalışması. Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi. 2000; 33(1):77-89. DOI: 10.1501/Egifak_0000000024.*
20. *Limit of Hunger and Poverty. Ankara: Confederation of Turkish Trade Unions; 2016 (http://www.turkis.org.tr, accessed 27 July 2016).*
21. *Gökler I. Child abuse and neglect: Effect of early stress on neurobiological development. Turk J Child Adolesc Ment Health. 2002; 9(1):47–57.*
22. *Lawrence LL, Brannen SJ.The impact of physician training on child maltreatment reporting:a multi-specialty study. Mil Med. 2000; 165(8):607-11.*
23. *Higgins DJ, McCabe MP. Maltreatment and family dysfunction in childhood and the subsequent adjustment of children and adults. J Fam Violence. 2003; 18:107-20.*
24. *Herrenkohl TI, Herrenkohl RC. Examining the overlap and prediction of multiple forms of child maltreatment, stressors, and socio economic status: a longitudinal analysis of youth outcomes. J Fam Violence. 2007; 22:553-62.*
25. *Karaca Gül S, Barlas Ü, Onan N, Öz YC. 16-20 yaş grubu ergenlerde aile işlevleri ve kişilerarası ilişki tarzının incelenmesi: Bir üniversite örneklemi. Balıkesir Sağlık Bilimleri Dergisi. 2013; 2(3):139-46.*
26. *Kızmaz Z. Sosyolojik suç kuramlarının suç olgusunu açıklama potansiyelleri üzerine bir değerlendirme. C.Ü. Sosyal Bilimler Dergisi. 2005; 29(2):149-74.*
27. *Kann L, Kinchen S, Shanklin SL, Flint KH, Kawkins J, Harris WA, et al.; Centers for Disease Control and Prevention (CDC). Youth risk behavior surveillance--United States, 2013. MMWR Suppl. 2014; 63(4):1-168.*
28. *Türkiye'de ortaöğretime devam eden öğrencilerde ve ceza ve infaz kurumlarında bulunan tutuklu ve hükümlü çocuklarda şiddet ve bunun etkileyen etkenlerin saptanması araştırma raporu. Ankara: 2007. Meclis Araştırması Komisyonu; 2007 (https://www.tbmm.gov.tr/sirasayi/donem22/yil01/ss1413_Ek_Arastirma_Raporu.pdf, accessed 27 July 2016).*
29. *McCullough M, Scherman A. Family-of-origin interaction and adolescent mothers' potential for child abuse. Adolescence. 1998; 33(130):375-84.*
30. *Doğan Önen Ö. Cinsel istismara uğrayan ergenlerde bireysel, ailesel ve istismara ait özelliklerin tanımlanarak, istismara uğrama ve psikiyatrik bozukluk oluşumu üzerine etkilerinin araştırılması: kontrollü bir çalışma. İzmir: Dokuz Eylül University; 2009.*
31. *Yılmaz, G. Cinsel istismara uğramış ve uğramamış 6-12 yaş grubundaki çocukların aile resmi çizimleri, davranış sorunları ve ailelerin işlevsel özelliklerinin incelenmesi. Ankara: Hacettepe University; 2009.*
32. *Narvaez JC, Magalhães PV, Trindade EK, Vieira DC, Kauer-Sant'anna M, Gama CS, et al. Childhood trauma, impulsivity, and executive functioning in crack cocaine users. Compr Psychiatry. 2012; 53(3):238-44.*
33. *Dilek H, Aksoy AB. Ergenlerin benlik saygısı ile anne-babalarının benlik saygısı arasındaki ilişkinin incelenmesi. Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi. 2013; 14(3):95-109.*
34. *Totan T, Yöndem ZD. Ergenlerde zorbalığın anne, baba ve akran ilişkileri açısından incelenmesi. Ege Eğitim Dergisi. 2007; 8(2):53–68.*

Table 1. The relationship between the groups with high and low scores in CTQ and PARI and IBS [n (%)] *

Comparison of the relationship between scales		Childhood trauma questionnaire		
		Lower scores (n=458)	Higher scores (n=549)	**p**
Parent- Adolescent Relationship Inventory	Lower scores (n=501)	268 (53.5%)	233 (46.5%)	**0.001**
	Higher scores (n=506)	190 (37.5%)	316 (62.5%)	
Illegal Behavior Scale	Lower scores (n=497)	274 (59.8%)	223 (40.6%)	**0.001**
	Higher scores (n=510)	184 (40.2%)	326 (59.4%)	

*Column percentage

Table 2. Relationship between high and low scores between PARI and IBS [n (%)] *

Comparison of the relationship between scales		Parent- Adolescent Relationship Inventory		
		Lower scores (n=501)	Higher scores (n=506)	**p**
Illegal Behavior Scale	Lower scores (n=497)	427 (%85,2)	70 (%13,8)	**0,001**
	Higher scores (n=510)	74 (%14,8)	436 (%86,2)	

*Column percentage

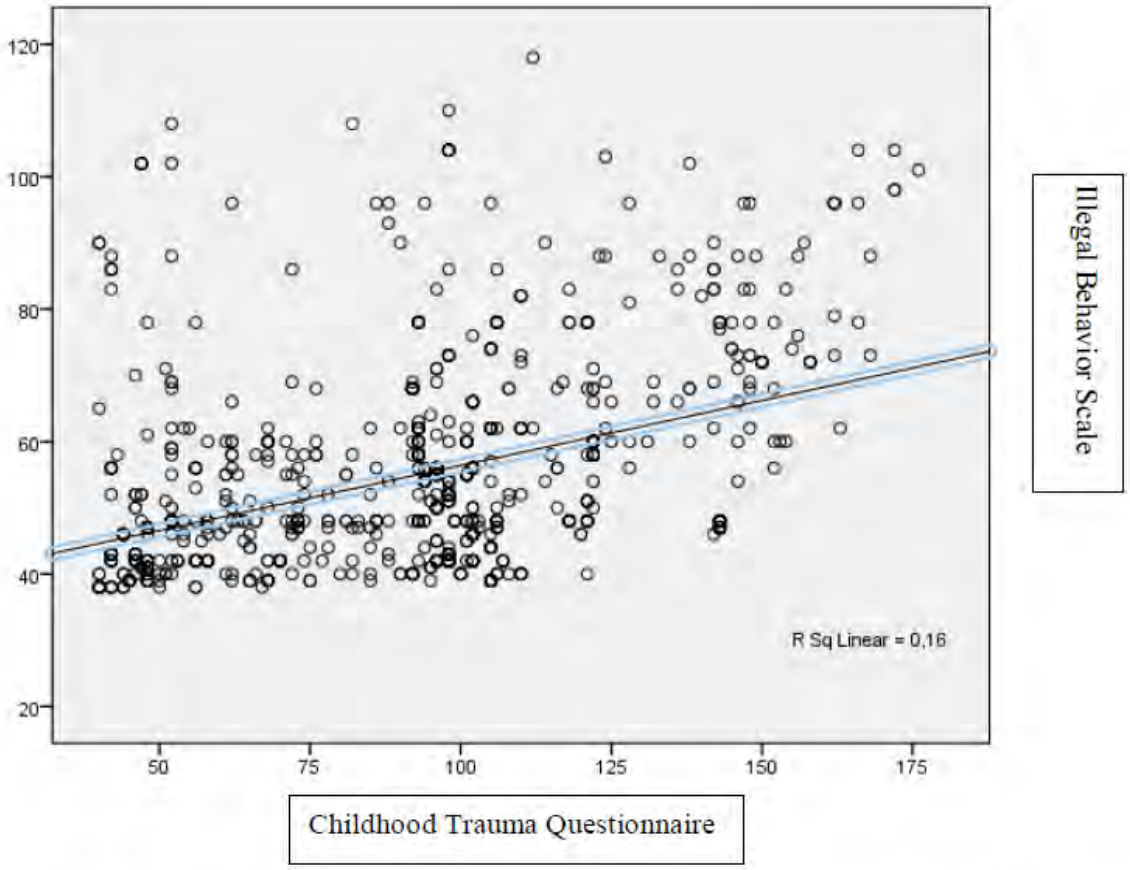


Figure 1 B: The relationship between 'Childhood Trauma Questionnaire' and "Illegal Behavior Scale" (p=0.001, r=0.400)

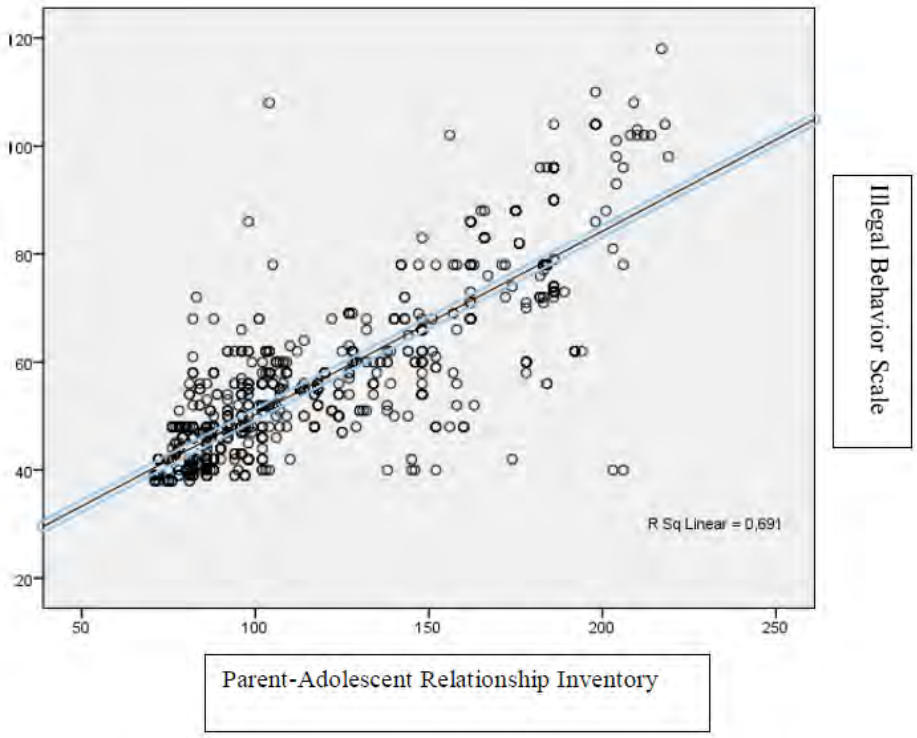


Figure 2: The relationship between 'Parent-Adolescent Relationship Inventory' and "Illegal Behavior Scale" (p=0.001, r=0.831).

FT87

Çocuklara Göre Aile İlişkileri Ne Durumda?

How Are Family Relations According to Children?

Dilara ŞAHİN[1], Ayşe Sonay TÜRKMEN[1]

[1]Karamanoglu Mehmetbey University, Child Health Nursing Department, Karaman, TURKEY

Amaç:
Bu çalışma çocukların ebeveyn-çocuk ve aile ilişkileri ile ilgili görüşlerini belirlemek amacı ile yapıldı.

Gereç ve Yöntem:
Tanımlayıcı olarak yapılan bu araştırmanın evrenini Karaman ili merkez ilçesindeki okulların beşinci sınıfına devam eden öğrenciler oluşturdu. Örnekleme, küme örnekleme yöntemi ile belirlenen iki okulda öğrenim gören, toplam 200 öğrenci alındı. Veriler araştırmacılar tarafından geliştirilen anket formu ve "Çocuklar İçin Aile İlişkileri Ölçeği" kullanılarak sınıf ortamında toplandı. Verilerin analizinde sayı, yüzde, ortalama, standart sapma, bağımsız gruplarda t testi, Mann Whitney U, Kruskal Wallis, ANOVA ve Tukey testleri kullanıldı.

Bulgular:
Çocukların yaş ortalaması 11,11±0,66 yıl olup cinsiyetlere göre dağılımları benzerdi. Annelerin %44,5'i ilkokul, %28,5'i ortaokul, %27'si lise ve üzeri okullardan mezun idi. Annelerin çalışma durumu değerlendirildiğinde %67'sinin ev hanımı olduğu belirlendi. Babaların eğitim durumlarına göre dağılımları benzer oranlarda idi. Çocukların yarıya yakını ilk çocuk (%47) idi. Çocukların aile ilişkileri ölçeği alt boyut puan ortalamaları destekleyici alt boyutu için 26,75±3,14, engelleyici alt boyutu için 14,87±3,34 olarak belirlendi. Ölçek alt boyutlarından alınan puanları açısından annenin eğitim durumu (F=3,604; p=0,029), çocukların cinsiyeti (t=-2,774; p=0,007), çocuk sırasına (F=4,506; p=0,012) göre gruplar arasında farklılık olduğu belirlendi. Annesi lise ve üzeri okullardan mezun olan öğrencilerin aile ilişkilerini daha destekleyici buldukları belirlendi. Ayrıca erkek çocukların (15,49 ± 3,50) ve ailenin ikinci çocuğu olan öğrencilerin (15,67±3,72) aile ilişkilerini daha engelleyici buldukları belirlendi (p<0,05).

Sonuç:
Çocukların aile ilişkilerini destekleyici bulma oranları engelleyici bulma oranlarından daha yüksek olup bu puanlar bazı demografik özelliklere göre değişmekte idi.

Anahtar kelimeler: *aile ilişkileri, çocuk, ebeveyn, çocuk-ebeveyn ilişkileri*

ABSTRACT
Aim:
The aim of this study was to determine the views of children about parent-child and family relations. Materials and Methods: The universe of this descriptive study consisted of students attending fifth grade of schools in central district of Karaman province. A total of 200 students from two schools were selected by sampling method. The data were collected in the classroom by using the questionnaire and The Family Relationship Scale for Children developed by the researchers. Data were analyzed by number, percentage, mean, standard deviation, independent samples t test, Mann Whitney U, Kruskal Wallis, ANOVA and Tukey tests.

Results: The mean age of the children was 11.11 ± 0.66 years and the distribution according to gender was similar. 44,5% of mothers graduated from primary school, 28,5% from secondary school, 27% from high school and above. When the working status of the mothers were evaluated, it was found that 67% were housewives. The distribution of fathers according to their educational status was similar. Nearly half of the children were the first child (47%). The mean scores of the children's family relationship subscale were 26.75 ± 3.14 for the supportive subscale and 14.87 ± 3.34 for the discouraging subscale. It was determined that there were differences between the groups according to the educational status of the mother (F = 3,604; p = 0.029), gender of the children (t=-2,774; p=0,007), and the order of the children (F=4,506; p=0,012). It was determined that the students whose mother graduated from high school and above found the family relations more supportive. In addition, it was determined that male children (15.49 ± 3.50) and students who were the second child of the family (15.67 ± 3.72) found that family relationships were more obstructive (p <0.05).
Conclusıon: The rate of finding supportive of family relationships of children was higher than the rate of finding inhibitor, and these scores varied according to some demographic characteristics.

Keywords: *family relations, child, parent, child-parent relations*

Introduction

The phenomenon of family has always been the subject of research for science such as anthropology, sociology and psychology. In the field of psychology, especially with Freud, the concept of family was emphasized. The family is a social unit with many responsibilities (1,2). According to Gladding (2006), the family is composed of people who are connected to each other by biological and/or psychological, historical, emotional or economic ties and see themselves as part of the household. This definition of Gladding draws attention to the emotional functions of the family and is important in this respect (3).

Although more biological factors come into prominence in family definitions, another important function of the family is that it responds to the emotional needs of family members (2). When family is mentioned, an institution that positively affects the development of individuals in general comes to mind. However, families may not always have positive effects on family members (4). Therefore, families are divided into healthy (functional) and unhealthy (non-functional) families. According to Satir (2001), communication in healthy families is clear, distinct, direct and honest; eigenvalue is high. Moreover, the social bond in such families is open, promising and based on the right to choose; the rules are appropriate, flexible, humanly and variable according to the circumstances (5). There are similar definitions for healthy families in the literature (6-8). Unhealthy family relationships can negatively affect the development of the individual (9). In terms of children, the family is generally considered to be a structure that is assumed to have a positive effect on the child and is thought to have a protective function (10).

In the studies conducted, perception of family functions as unhealthy shows that individuals; increase tendency to show violence (11), affect the sense of trust and therefore avoid individuals close relationships (12), affect the control focus (13), that their learned resourcefulness of are high (14), increase problematic and unwanted behavior (15-17), being pushed to loneliness and ıt shows that the individual has difficulty in establishing a relationship in social life because of the relationship that the family cannot establish (18). In this study, it is aimed to determine family relations from the perspective of children.

Material and Methods

The universe of this descriptive study consisted of students attending the 5th grade of schools in the central district of Karaman province (transition period to adolescence). A total of 200 students from

two schools were selected by sampling method. The data were collected in the classroom by using the questionnaire and the Family Relationship Scale for Children developed by the researchers.
Survey form; It consists of 25 questions in which the sociodemographic characteristics of the students and their family relations are questioned.
The Family Relationship Scale for Children (FRSC); it is a three-point Likert-type scale consisting of two sub-dimensions (discouraging family relations and supportive family relations) that measures attitudes towards family relations. In both dimensions, question items are scored as "1" never, "2" sometimes, "3" always. Items 2-6, 10, 14, 16, 18, 19 constitute the sub-dimension of discouraging family relations. The discouraging family relations sub-dimension includes the unhealthy elements of the family elements and prevents the development of the child. The high score in this dimension indicates that the child perceives the relationships in the family as obstructive. Items 1, 7-9, 11-13, 15, 17, 20 constitute the subscale of supportive family relations. The supportive family relations sub-dimension includes healthy elements of family members and supports the development of the child. The high score in this dimension indicates that the child perceives the relationships in the family as supportive. The Cronbach alpha coefficient of the FRSC, which gives two different points due to its theoretical structure, is .82 and .84 for the first sub-dimension, and .76 and .78 for the second sub-dimension (2).
Written and ethical permissions were obtained from the relevant units in order to carry out the study. Data were analyzed by number, percentage, mean, standard deviation, independent samples t test, Mann Whitney U, Kruskal Wallis, Anova and Tukey tests.

Results and Discussion

Half of the children were 11 years old (55.5%) and their distribution by gender was similar. While 44.5% of the mothers were primary school graduates and 67.5% were housewives, all of the fathers were employed in any job and 53% graduated from high school and above. Half of the children reported that they had two children in their family (51%) and that they had a first child (47%). The majority of the parents were alive (97.5%) and living together (89%).
The majority of the children were found to have no long-term disease (87%) and no continuous medication (90%). The first three reasons for hospitalization in the last year were examination (66%), treatment (25%) and emergency treatment (21.5%). 28.5% (n = 57) of the children stated that they were hospitalized for a long time. It was reported that most of the patients were accompanied by mothers (n = 43; 75%), and others were accompanied by fathers (n = 7; 12.3%) or other relatives (n = 7; 12.3%).
The majority of children did not have any scars (62%), an involuntary habit (67.5%) or a significant disease (78.5%); stated that there was no need for care in the family (95.5%) or that there was no one (89%) who could harm themselves / others when angry. When the children were asked to evaluate their family communication, the majority of the children stated that they had good communication with all family members (mother, father, sibling) (n = 181; 90.5%), while others stated that they had poor communication with at least one of them.
When the mean scores of Discouraging (14.87 ± 3.34) and Supportive (26.75 ± 3.14) Family Relations Sub-Dimension of the participants were evaluated, it was seen that the supportive family attitudes were higher. In the correlation analysis, it was found that there was a negative, moderate, statistically significant relationship between the mean scores of both sub-dimensions (r = -, 574; p = 0,000).
In the study, it was found that the mean score of the discouraging family relations sub-dimension was higher in children with involuntary habit, having a significant disease in the family, male and second child in the family. In the study of Sirin et al. (2018) found that males defined their families as more obstructive and that the number of children in the family did not make any difference on their family relations.

In the study, it was seen that 11-year-old children were more supportive of family relations than their 10-year-old children, and those whose mothers graduated from high school and above were more supportive than their secondary school graduates (Table 1). When the literature is analyzed, Ozkurt and Camadan (2018) found that the psychological value given to the child increased with the increase in the education level of the mother; Cerit (2007), on the other hand, found a significant difference between the education level of the mother and the communication which is one of the healthy family function components. This finding of our study is similar to the literature. As the mother's education level increases, it can be thought that mothers can help them raise their perceptions of themselves and their families by giving their children more positive feedback.

It was determined that children's staying with a single parent, long-term hospital stay, and defining poor communication with at least one family member increased the mean score of the discouraging sub-dimension; on the other hand, staying with both parents, not staying in hospital for a long time and having good communication with all family members increased the mean subscale scores of supportive family relations (Table 1). When the literature is examined, McMaster Model, one of the most prominent family functions models, focuses on six foundations: problem solving, communication, roles, emotional responses, emotional participation and behavior control (6). These findings of our study are in parallel with the literature and explain healthy family function according to McMaster Model in line with the principles of emotional reactions, emotional participation, communication and roles.

Conclusion

Children's perception of family relationships varies according to some demographic characteristics and perception of family communication. Therefore, it is important to take these features into consideration in the regulation of family relations.

Supportive family relationships can have a significant impact on the psychological health of children and young people and these effects have been confirmed by many studies (22, 23, 24, 25). From this point of view, having healthy or unhealthy family functions affects individuals in many ways. For this reason, it can be said that having healthy functions of families is very important for the development of the child. In addition, the lack of studies on family relations among secondary school students in our country and in the world is remarkable. New supportive researches are needed in our country.

Table 1. Distribution of mean scores and demographic characteristics of children and comparison between groups

	The Discouraging Family Relations Sub-Dimension Average Score	The Supportive Family Relations Sub-Dimension Average Score
Age of child *		
10	15,08±3,21	25,41±4,21
11	14,93±3,43	27,14±2,94
12	14,60±3,28	26,80±2,53
F	*0,267*	*4,056*
p	*0,766*	*0,019*
Mother education status **		
Primary school	14,97±3,13	26,88±2,91
Middle school	15,28±3,73	25,89±3,86
High school and above	14,25±3,22	27,44±2,42
F	*1,375*	*3,604*
p	*0,255*	*0,029*

Gender		
Female	14,21±3,05	26,79±3,26
Male	15,49±3,50	26,72±3,03
t	*-2,744*	*0,157*
p	*0,007*	*0,875*
Status of living with parents		
Lives with both	14,63±3,24	27,03±2,90
Living with mother or father	18,86±4,38	22,86±5,21
Not living with her parents	14,70±2,16	26,20±3,39
KW	*12,098*	*15,438*
p	*0,007*	*0,001*
Family queue of contributor		
1	14,15±2,83	27,13±2,70
2	15,67±3,72	26,06±3,68
3	15,15±3,48	27,18±2,82
F	*4,506*	*2,808*
p	*0,012*	*0,063*
Status of long stay in hospital		
Stayed	16,30±3,65	25,70±3,58
Not stayed	14,29±3,04	27,17±2,85
t	*3,970*	-3,044
p	*0,000*	0,003
The presence of involuntary habit		
There arent	14,38±3,01	27,00±2,55
There are	15,88±3,77	26,23±4,07
U	*3378,500*	*4171,500*
p	*0,008*	*0,569*
Is there any serious illness in your family?	15,91±3,56	26,42±3,20
There are	14,58±3,23	26,84±3,12
There arent	*2,334*	*-,781*
t	*0,021*	*0,436*
p		
Status of family communication		
Good communication with all family members	14,67±3,36	27,01±3,03
Poor communication with at least one family member	16,68±2,63	24,26±3,11
t	*-2,528*	*3,748*
p	*0,012*	*0,000*

* Destekleyici Aile iLişkileri Alt Boyut $p_{10\text{-}11\ yaş}$ =0,014

$p_{anne\ lise\ ve\ üzeri\ mezun\text{-}ortaokul\ mezunu}$=0,025

References

1- *Epstein NB, Levin S, Bishop DS. The family as a social unit. Canadian Family Physician 1976;22(1411):53-55.*

2- *Demirtaş Zorbaz S, Korkut Owen F. Çocuklar için aile ilişkileri ölçeği'nin geliştirilmesi. Türk Psikolojik Danışma ve Rehberlik Dergisi 2013; 4(39):58-67.*

3- *Gladding ST. Family therapy history, theory and practise (4th. Ed.) Ohio: Pearson; 2006.*

4- *Puff J, Kolomeyer E, McSwiggan M, Pearte C, Lauer BA, Renk K. Depression as a mediator in the relationship between perceived familial criticism and college adaptation. Journal of American College Health 2016;64(8):604-612.*
5- *Satir V. İnsan yaratmak: Aile terapisinin başyapıtı. Beyaz Yayınevi. İstanbul; 2001.*
6- *Epstein NB, Bishop DS, Levin S. The McMaster model of family functioning. Journal of Marital and Family Therapy 1978; 4(4):19-31.*
7- *Bowen, M. Family psychotherapy with schizophrenia in the hospital and in private practice. New York:Jason Aronson; 1965.*
8- *Bulut I. Aile Değerlendirme Ölçeği. Ankara: Özgüzel Matbaası; 1990.*
9- *Smokowski PR, Bacallao ML, Cotter KL, Evans CB. The effects of positive and negative parenting practices on adolescent mental health outcomes in a multicultural sample of rural youth. Child Psychiatry & Human Development 2015;46(3):333-345.*
10- *Trawick-Smith J. Early childhood development: A multicultural perspective. Pearson Higher Ed.;2013.*
11- *Avcı R, Güçray SS. An investigation of violent and nonviolent adolescents' family functioning, problems corcerning family members, anger and aner expression. Educational Sciences: Theory & Practice 2010;10(1):65–76.*
12- *Coll KM, Powell S, Thobro P, Haas R. Treatment family functioning and the development of trust and intimacy among adolescents in residential. The Family Journal 2010;18:255–262.*
13- *Doğan M, Ceyhan E. Genel lise öğrencilerinin aile işlevlerinin ve denetim odaklarının incelenmesi. Aile ve Toplum Dergisi 2008; 4(15):67–82.*
14- *Coşkun Y. Ortaöğretim öğrencilerinin öğrenilmiş güçlülük düzeyleri ve aile içi ilişkileri. Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi 2009;18(2):104-118.*
15- *Saydam RB, Gençöz T. Aile ilişkileri, ebeveynin çocuk yetiştirme tutumu ve kendilik değerinin gençler tarafından belirtilen davranış problemleri ile olan ilişkisi. Türk Psikoloji Dergisi 2005; 20(55):61–74.*
16- *Ateş FB, Akbaş T. Ergenlerde görülen kural dışı davranışların aile işlevselliği ve yaşam kalitesi açısından incelenmesi. Ç.Ü. Sosyal Bilimler Enstitüsü Dergisi 2012;21(2):337- 352.*
17- *Pagani LS, Japen C, Vaillancourt T, Tremblay RE. Links between middle-childhood trajectories of family dysfunction and ındirect aggression. Journal of Interpersonal Violence 2010; 25:2175–2198.*
18- *Johnson HD, LaVoie JC, Mahoney M. Interparental conflict and family cohesion predictors of loneliness, social anxiety, and social avoidance in late adolescence. Journal of Adolescent Research 2001;6:304–318.*
19- *Şirin A, Özgen G, Akca-Erol F, Akça-Koca D. İlkokul 4. Sınıf Öğrencilerinin Aile İlişkilerinin Empatik Eğilimlerine Etkisi. Marmara Üniversitesi Atatürk Eğitim Fakültesi Eğitim Bilimleri Dergisi, 2018;48(48):59-72.*
20- *Özkurt Y, Camadan F. Ortaokul öğrencilerinin aile içi iletişimlerinin ve sosyal uyum durumlarının incelenmesi. Turkish Studies Educational Science 2018; 13(19):347-371.*
21- *Cerit, T. (2007). Ergenlerin Aile İlişkilerini Algılamalarının Bazı Değişkenlere Göre İncelenmesi. Yüksek Lisans Tezi, Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.*
22- *Aypay A, Eryılmaz A. Relationships of high school sdutent'subjective well-being and school burnout. International Online Journal of Educational Sciences 2011; 3(1):181-199.*
23- *Eryılmaz A. Aile yapısı ergeni mutlu eder mi?. Aile ve Toplum 2010; 22(6):21-30.*
24- *Ho-tang W, Mei-ju C, Wei-hung C, Chin-Tang T. Relationship among family support, love attitude, and well-being of junior high school students. Universal Journal of Educational Research 2016;4(2):370-377..*
25- *Türkmen M. Öznel iyi oluşun yapısı ve ana-baba tutumları, özsaygı ve sosyal destekle ilişkisi: Bir model sınaması. Uşak Üniversitesi Sosyal Bilimler Dergisi 2012;5(1):41-73.*

FT88

Obese Boys Wıth Low Concentratıons of Hıgh Densıty Lıpoproteın Cholesterol are at Greater Rısk of Hepatosteatosıs

Uzm. Dr.Elif ÖZSU

University of Ankara, School of Medicine Department of Pediatric Endocrinology and Diabetes

Abstract

Purpose: Non-alcoholic fatty liver disease (NAFLD) and associated morbidities have become a public health problem due to a global three-fold increase in incidence among obese children over the last three decades. Although the gold standard for diagnosis of NAFLD is liver biopsy, it is not widely used in children. Imaging techniques, including magnetic resonance and ultrasound, can provide information on liver fat deposition, with variable sensitivity. Therefore, a number of other predictors are being investigated for pediatric screening and diagnostic purposes. The aim of this study was to assess easily measured parameters to prompt further investigation for NAFLD in obese children. Methods: Obese children/adolescents with a Body Mass Index (BMI) percentile >95 were enrolled in the study (n=353). After a 12-hour fast, venous glucose, insulin, cholesterol, triglycerides (TG), high density lipoprotein (HDL), low density lipoprotein (LDL) and uric acid were measured and full blood count was performed in all subjects. The TG/LDL ratio, the AST/platelet ratio index (APRI score) and the Homeostatic Model of Assessment-Insulin Resistance (HOMA-IR) were calculated. All patients underwent abdominal ultrasound examination to assess heaptosteatosis. Results: Of 353 patients, median age 12.5 (range: 6-17.9) years, 210 (59%) patients had US-proven hepatosteatosis. Female gender reduced the risk of steatosis 2.08 fold (p=0.005), one unit increase in HDL reduced the risk of steatosis 1.02 fold (p=0.042) and one unit increase in the BMI led to a 1.11 fold (p=0.002) increase in the risk of steatosis. Conclusion: Gender, BMI and HDL were found to be predictors of steatosis. Male patients with low HDL and high BMI are at greater risk of steatosis and should be carefully examined for the presence of NAFLD.

Keywords: *Fatty liver, childhood, high density lipoprotein, , hepatosteatosis, obesity*

Introductıon

Non-alcoholic fatty liver disease (NAFLD) is a wide-spectrum metabolic condition characterized by the accumulation of fat in at least 5% of the hepatocytes. It begins as an inflammatory process with steatohepatitis and can progress to fibrosis and end-stage liver disease cirrhosis. Globally, NAFLD is the most frequent cause of chronic liver disease. It is usually associated with obesity, insulin resistance, metabolic syndrome and dyslipidemia (1).

Since definitive diagnosis requires a liver biopsy, which may be associated with increased morbidity and is thus often avoided in pediatric patients, prevalence of the condition among children is unclear. Estimates of the prevalence of fatty liver in obese children has ranged up to 77% while the prevalence of histologically proven NAFLD among obese children in the USA is 38%, the frequency among the normal population is 9% [1,2]. Ethnic, genetic and environmental factors are known to play a role in the development of NAFLD and it is more frequently observed among pubertal males and Hispanic men [3-5]. The pathogenesis of NAFLD may be explained by the well established double-hit hypothesis. The first hit is insulin resistance which leads fat to accumulate in the liver, resulting in increased free oxygen radicals, the second hit, leading to steatohepatitis.

Assessment of liver fat deposition

Magnetic resonance imaging (MRI) can detect hepatosteatosis when fat deposition ≥5% while ultrasound, which is widely used in pediatric patients, has low sensitivity in cases where the fat build up is below 20% [4,5]. A quantitative elastographic ultrasound technique is still under development [5].

Some scoring systems consisting of clinical and biochemical parameters are also used. The non-invasive fibrosis grading score, the aspartate aminotransferase to Alanine aminotransferase (AST)/ALT ratio), AST/platelet ratio and the Fibrosis 4 calculator (FIB-4 using the formula: Age x AST /Platelet x √ALT) score are also in use as non-invasive markers for NAFLD [6,8]. Recently, a model constructed using gamma glutamyl transferase (GGT), Alkaline Phosphatase (ALP) and platelets has also been evaluated [8], though it requires further development for use in routine practice. In our study, routinely used biochemical and hormonal markers and anthropometric measurements were assessed in order to determine a good, non-invasive marker for the diagnosis of NAFLD.

Materıals And Methods

All children and adolescents, aged between 6 and 18 years, attending the pediatric endocrinology outpatients clinic over a two year period (2014-2015) with obesity (as defined by Kurtoglu *et al* [9]; see below) were eligible for this prospective study. Exclusion criteria were: monogenic obesity, type 2 diabetes, patients with secondary obesity syndromes and acute or chronic disease. In addition any patient with an underlying endocrinologic disease and/or those under medication were excluded from the study.

The height and weight of the children included in the study were measured using standard measuring techniques and the same combined stadiometer/weighing scale (Seca 703 sensitive to 1 mm and accurate to 100 g ; SecaGmbH&Co KG, Hamburg, Germany) for all subjects.. The Body Mass Index (BMI) was calculated by dividing the weight in kilograms by the square of the height in meters (weight [kg]/height squared [m2]). The children whose BMI was above the 95th percentile, according to the age, gender and ethnicity were classified as obese for the purpose of this study, as previously described by Kurtoglu *et al* [9].

Following a 12-hour overnight fast, venous blood samples were drawn into plain tubes in the morning. LDL, TG, HDL, total cholesterol, VLDL, glucose and uric acid were tested using a Roche kit on the autoanalyzer. The insulin and thyroid hormone levels were measured by chemiluminescence, using a Bio-DPC kit and the Immulite 2000 device. Complete blood count was measure by automated system.

Oral glucose tolerance test was conducted using 1.75 g glucose/kg with a maximum glucose dose of 75 g.). Subjects with HOMA-IR >3.16 were accepted to be insulin resistant, as previously described by Sahin *et al* [10]. Cumulative total insulin was calculated as previously described [9]. Briefly, the measured insulin at each time point in the OGTT was added together for each patient. If this cumulative value, hereafter referred to as "total insulin", exceeded 300 µU/ml then the patient was considered to have hyperinsulinemia. Those with fasting HDL levels ≤40 mg/dL and fasting TG levels ≥110 mg/dL were considered dyslipidemic [3,4].

All the patients underwent abdominal ultrasound examinations, by the same radiologist, using the SSA-660A Xario Toshiba ultrasound device, (Toshiba Inc., Tokyo, Japan) with a 3.5MHz convex probe for hepatobiliary ultrasound. US-proven hepatosteatosis was graded as follows:

Grade 0: Normal parenchymal liver echogenicity by comparison with the right renal cortex [5]; Grade I: Mild diffuse increase in echogenicity. The diaphragm and the intrahepatic blood vessel walls appear normal. Grade II: Moderate increase in echogenicity. The diaphragm and the intrahepatic blood vessel walls are slightly obscured. Grade III: Distinct increase in echogenicity. The diaphragm, intrahepatic blood vessel walls and the posterior view of the right lobe are severely or totally obscured.

Results

Table 1. Distribution of descriptive characteristics between the patients with or without steatosis

	US-proven Steatosis		P**
	No (n=143)	Yes (n=210)	
Age (years)	12 (6-17.3)	13 (6-17.9)	**0.004**
Gender			
Male	48 (29.8)	113 (70.2)	**<0.001**
Female	95 (49.5)	97 (50.5)	
Birth weight (grams)	3260 (1200-6000)	3300 (1200-5700)	0.286
BMI-SDS	2.49 (1.30-7.90)	2.63 (.120-8.78)	**0.002**

*Continuous variables are presented as "median (min-max)", while the categorical variables are presented as "number (percentage)".

** Pearson's Chi-Square Test or Fisher's Exact Test test was used to compare the patients with and without US-proven steatosis as appropriate.

Body mass Index (BMI)

Table 2. The laboratory results, HOMA-IR values and OGTT status of the study subjects with or without US-proven steatosis

	US proven steatosis		p**
	No (n=143)	Yes (n=210)	
TSH (µIU/ml)	2.20 (0.68-7.97)	2.12 (0.50-11.80)	0.627
Free T4 (µg/dL)	1.06 (0.30-1.88)	1.04 (0.48-1.50)	0.467
Uric Acid (mg/dL)	4.8 (2.5-7.8)	5.4 (2.9-10.0)	**<0.001**
AST (U/L)	20 (11-52)	23.7 (9.9-93.0)	**<0.001**
ALT (U/L)	17 (8-131)	24.4 (7.6-179.0)	**<0.001**
AST/ALT	1.16 (0.40-2.11)	0.92 (0.46-2.89)	**<0.001**
Platelet count (/µL)	319000 (30000-3730000)	310000 (38100-3930000)	0.568
APRI Score	0.006 (0.001-0.137)	0.007 (0.001-0.050)	**<0.001**
HDL (mg/dL)	47 (24.5-92.0)	43 (24.9-86.0)	**0.001**
LDL (mg/dL)	97 (42.3-207.0)	99 (42-339)	0.988

TG (mg/dL)	97 (42-265)	104.8 (31.3-516.0)	**0.027**
TG/HDL	2.11 (0.47-7.08)	2.61 (0.49-16.65)	**0.001**
VLDL (mg/dL)	19 (8.5-53.0)	22 (6.2-103.0)	**0.019**
FBG (mg/dL)	89.8 (73.0-11.1)	88.8 (70.9-158.0)	0.207
Insulin (µIU/ml)	13.6 (2.0-74.5)	18.3 (2-72)	**<0.001**
HOMA-IR	2.98 (0.42-19.50)	4.03 (0.45-26.53)	**<0.001**
OGTT status			
Not tested n(%)	47 (35.6)	85 (64.4)	**0.035**
Tested n(%)	34 (23.9)	108 (76.1)	
Total Insulin (n=142)	485 (109-1198)	481 (114-3745)	0.624
<300 n(%)	9 (47.4)	10 (52.6)	**0.018**
≥300 n(%)	25 (20.3)	98 (79.7)	

*Continuous variables are presented as "median (min-max)", while the categorical variables are presented as "number (percentage)".

****Mann Whitney-U Test was used to compare the measurement data**

Thyroid stimulating hormone (TSH), Fasting blood glucose (FBG), Aspartate Aminotransferase (AST), Alanin Aminotransferase (ALT), Triglycerides (TG), High density lipoprotein (HDL), Low density lipoprotein (LDL), AST/Platelet ratio index (APRI score), Homeostatic Model of Assessment-Insulin Resistance (Homa-IR), Oral glucose tolerance test (OGTT)

Table 3. The logistic regression analysis evaluating the efficiency of a range of factors in predicting steatosis.

	OR	95% CI	p*
Age	1.021	0.908-1.150	0.725
Gender**	0.481	0.288-0.802	**0.005**
BMI	1.109	1.040-1.183	**0.002**
Uric Acid	1.201	0.943-0.1.530	0.138
AST	1.046	0.980-0.1.116	0.175
ALT	1.011	0.978-0.1.046	0.514
HDL	0.977	0.955-0.991	**0.042**
Triglycerides	0.994	0.972-	0.571

		0.1.016	
VLDL	1.042	0.933-0.1.164	0.464
HOMA-IR	0.986	0.892-0.1.090	0.787

OR: Odds ratio; CI: Confidence interval

***The logistic regression analysis was used for prediction and Hosmer-Lemeshow Test was used for model fit**

**Male to female

Body mass Index (BMI), Triglycerides (TG), High density lipoprotein (HDL), Low density lipoprotein (LDL), AST/Platelet ratio index (APRI score), Homeostatic Model of Assessment-Insulin Resistance (Homa-IR), Oral glucose tolerance test (OGTT).

Table 4. The sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of the variables BMI and HDL according to the predetermined cut-off values

	Cut-Off	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)
BMI(kg/m^2)	25.05	87.1	25.9	63.3	57.8
	29.05	62.4	61.5	70.4	52.7
HDL (mg/dL)	47.02	64.8	47.6	64.5	47.9
	49.05	71.4	36.4	62.2	46.4

%: Percentage

Cross table was used for detecting the sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV)

Body mass Index (BMI)), High density lipoprotein (HDL)

References

1. *Chalasani N, Younossi Z, Lavine JE, et al. American Association for the Study of Liver Diseases; American College of Gastroenterology; American Gastroenterological Association. The diagnosis and management of non-alcoholic fatty liver disease: Practice guideline by the American Association for the Study of Liver Diseases, American College of Gastroenterology, and the American Gastroenterological Association. Am J Gastroenterol. 2012;107:811-26.*
2. *Schwimmer JB, Deutsch R, Kahen T, et al. Prevalence of fatty liver in children and adolescents. Pediatrics. 2006;118:1388-93.*
3. *Valerio G, Licenziati MR, Iannuzzi A, Franzese A, Siani P, et al. Insulin resistance and impaired glucose tolerance in obese children and adolescents from Southern Italy. Nutr Metab Cardiovasc Dis 2006;16:279–84.*
4. *Day CP, Saksena S. Non-alcoholic steatohepatitis: definitions and pathogenesis. J Gastroenterol Hepatol. 2002;17:377-84.*

5. *Karlas T, Petroff D, Garnov N, et al. Non-invasive assessment of hepatic steatosis in patients with NAFLD using controlled attenuation parameter and 1H-MR spectroscopy. PLoS One. 2014;17;9:e91987*
6. *Feldstein AE, Alkhouri N, De Vito R, et al. Serum cytokeratin-18 fragment levels are useful biomarkers for nonalcoholic steatohepatitis in children. Am J Gastroenterol. 2013;108:1526-31.*
7. *Lombardi R, Pisano G, Fargion S. Role of Serum Uric Acid and Ferritin in the Development and Progression of NAFLD. Int J Mol Sci. 2016 Apr 12;17(4):548.*
8. *Alkhouri N, McCullough AJ. Noninvasive Diagnosis of NASH and Liver Fibrosis Within the Spectrum of NAFLD. Gastroenterol Hepatol. 2012;8:661-8.*
9. *Kurtoglu S, Hatipoglu N, Mazicioglu M, Kendirci M, Keskin M, Kondolot M. Insulin resistance in obese children and adolescents: HOMA-IR cut-off levels in the prepubertal and pubertal periods. J Clin Res Ped Endo 2010;2(3): 100-6.*
10. *Sahin NM, Kinik ST, Tekindal MA. OGTT results in obese adolescents with normal HOMA-IR values. J Pediatr Endocr Met 2013;26(3-4): 285-291.*
11. *de Ridder CM, Bruning CF, Zonderland ML, Thijssen JHH, Bonfrer JMG, Blankenstein MA, Huisveld IA, Erich WBM. Body fat mass, body fat distribution and plasma hormones in early puberty in females. J Clin Endocrinol Metab 1990;70(4): 888-893.*
12. *Cohen D, Gonzales-Pacheco D, Myers O. Relationships Between Alanine Aminotransferase, Serum Triglycerides, Body Mass Index and Nonalcoholic Fatty Liver Disease in an Outpatient Pediatric Clinic Population. J Pediatr Nurs. 2016;31:152-8.*
13. *Arslan N, Büyükgebiz B, Oztürk Y, et al. Fatty liver in obese children: prevalence and correlation with anthropometric measurements and hyperlipidemia. Turk J Pediatr. 2005;47:23-7.*
14. *Fonvig CE, Chabanova E, Ohrt JD, et al. Multidisciplinary care of obese children and adolescents for one year reduces ectopic fat content in liver and skeletal muscle.BMC Pediatr. 2015;15-196.*
15 *Ozkol M, Ersoy B, Kasirga E, et al. Metabolic predictors for early identification of fatty liver using doppler and B-mode ultrasonography in overweight and obese adolescents. Eur J Pediatr. 2010;169:1345-52.*
16. *Alkassabany YM, Farghaly AG, El-Ghitany EM. Prevalence, risk factors, and predictors of nonalcoholic fatty liver disease among schoolchildren: a hospital-based study in Alexandria, Egypt. Arab J Gastroenterol. 2014;15:76-81.*
17. *Chan DF, Li AM, Chu WC, et al. Hepatic steatosis in obese Chinese children. Int J Obes Relat Metab Disord. 2004;28:1257-63.*
18. *Eminoğlu TF, Camurdan OM, Oktar SO, et al. Factors related to non-alcoholic fatty liver disease in obese children.Turk J Gastroenterol. 2008;19:85-91.*
19. *Fu CC, Chen MC, Li YM, et al. The risk factors for ultrasound-diagnosed non-alcoholic fatty liver disease among adolescents. Ann Acad Med Singapore. 2009 ;38:15-7.*
20. *Sartorio A, Del Col A, Agosti F, et al. Predictors of non-alcoholic fatty liver disease in obese children. Eur J Clin Nutr. 2007 ;61:877-83.*
21. *Uslusoy HS, Nak SG, Gülten M, Biyikli Z. Non-alcoholic steatohepatitis with normal aminotransferase values. World J Gastroenterol. 2009 Apr 21;15(15):1863-8.*
22. *Posadas-Sánchez R, Posadas-Romero C, Zamora-González J, et al. Lipid and lipoprotein profiles and prevalence of dyslipidemia in Mexican adolescents. Metabolism. 2007 ;56:1666-72.*
23. *Ten S, Maclaren N. Insulin resistance syndrome in children. J Clin Endocrinol Metab. 2004 ;89:2526-39.*
24. *Alkhouri N, Eng K, Lopez R, Nobili V. Non-high-density lipoprotein cholesterol (non-HDL-C) levels in children with nonalcoholic fatty liver disease (NAFLD). Springerplus. 2014 Aug 5;3:407.*

FT89

The Evaluation of Visual Evoked Potentials (VEPs) Test in Premature Infants

Erhan AKSOY[1]

Department of Pediatric Neurology, Dr. Sami Ulus Pediatric and Training Hospital, Ankara, Turkey

Abstract

Objective: Visual functions are under-developed in premature infants, as the visual pathways plexus beginning from optic nerves and extending to the visual cortex are affected in parallel with the incomplete myelinization process. Visual Evoked Potential (VEP) is a non-invasive and easily applicable method that provides information about the myelination process. The aim of this paper has been to analyze the evaluation of the VEP results in premature infants, the predictive value and its applicability in clinical practice.

Materials and Method:
Visual evoked potentials (VEPs) refer to the bioelectrical triphasic potentials initiated by flashing light stimulus and recorded by using amplifications and electrodes mounted on the head. It is electrographically based on the measurement of the formation period of the positive wave peak (P100 latency) in terms of milliseconds (ms). In the repeated measurements, as P100 latency gradually shorten; the maturation of visual myelization has been increased at that level. The VEPs tests were performed in our hospital within last 3 years, the premature infants were retrospectively analyzed.

Results:
A total of 197 [102 (51,8%) male, 95 (48,2%) female] premature infants including 75 very preterm, 54 moderately preterm, and 68 late preterm were included in this study. The mean latency (in milliseconds) of P100 wave was 138,94± 21,73; 140,40± 23,85 in the right and left eye respectively. P100 latency was found shorter in the right eye of late preterm as compared to extremely preterm (P:0,04), and in the left eye compared to very preterm and extremely preterm (P:0,02; P:0,03, respectively). P100 latencies of females were found to be shorter as from 18 months of (corrected) age (p: 0.02). In addition, it was seen that late preterm infants approached closer to normal values of P100 latency as compared to others (P> 0.05) after 12 - 18 months of (corrected) age.

Conclusion:
In our study, it was found that visual maturation was better in females; the most prominent maturation began in the period of 3-6 months of (corrected) age, it continued gradually in the following months, and visual maturation generally approached the final adult values by drawing a plateau between 12-18 months of (corrected) age.

Keywords: *Prematurity, VEP*

Introduction

The sense of sight is one of the most important feedback mechanisms for mental-motor development. This mechanism ensures the coordination of various organs (hand, body, feet, mouth, etc.) with the eye and enables learning related to many functions such as recognition and location of objects, sitting, walking, feeding, cognitive interaction, and behavioral profile. It achieves this by sending signals to vestibular and proprioceptive Systems (1,2).

Visual evoked potentials (VEPs) are one of the various parameters that provide objective evaluation of visual function (3,4). VEPs, by providing diagnostic information about the functional integrity of the visual system, help to gain insight into myelinization process of retinal development, cerebral development, synaptogenesis and nerve fibers (1,5,6).
Premature birth takes place before the development of the visual pathways of babies (3). Therefore, visual functions of premature infants are poorly developed since the myelinization process of visual pathways plexus extending from the optic nerves to the visual cortex is not yet complete as in other brain regions. VEPs test providing an idea about this process is non-invasive, cost-efficient and easy to apply method. In this study, it was aimed how VEPs results are evaluated in premature infants without major neurological disorders, the predictive value and its applicability in clinical practice.

Materials and Methods

Patients

The VEPs test performed in 197 premature infants including 75 very preterm, 54 moderately preterm, and 68 late preterm who were examined between 2016 and 2019 in Pediatric Neurology Department of Dr. Sami Ulus Beştepe Hospital was retrospectively analyzed; the data obtained were transferred to the electronic environment where statistical studies would be performed.
Visual Evoked Potentials (VEPs)
Despite the fact that many methods can be feasible in this test, flash-VEP technique is mostly used in infants and children, as the fixation ability of the eye is low (1,4). VEPs are bioelectrical triphasic potentials obtained by recording with the amplification system in a manner similar to electroencephalography (EEG) recording after active electrodes that collect neural signals for a given period of time following a flashing light stimulus given in the dark with the aid of a device (Nihon Kohden is used in our clinic) inserted to the occipital region (Oz, O1 ve O2), reference electrodes that collect non-neural signals to the frontal midline (Fz) and both ears' mastoid region, ground electrodes to the vertex (Cz). Numerous recordings made in this way are electronically averaged. Thus, while random EEG waves, in terms of temporal according to the externally applied signal are removed, evoked potentials (EP), which have temporal relationship to the stimulus, become apparent on the recording track. However, it should be attempted to ensure that the responses obtained by performing at least 2 consecutive averages are true bioelectrical potentials recorded and that it does not originate from any artifact sources. The temporal distance (latency or delay) of the obtained potentials to the stimulus and the amplitude of the subject potentials can be measured. It is electrographically based on the measurement of the formation period of the positive wave peak (P100 latency) in terms of milliseconds (ms) (Figure I) (4). In the repeated measurements, as P100 latency gradually shorten; the maturation of visual myelinization has been increased at that level (4,6).

Statistical Analysis

Data were analyzed via the SPSS 22.0 software; summarized in terms of mean±standard deviation and numbers (percent). X^2 test was used to compare the parameters with each other in terms of percentage as well as the descriptive statistics, t-test and the Mann–Whitney U test was used to compare mean where appropriate, and one-way ANOVA test for premature sub-groups. $P < 0.05$ was accepted as significant after the statistical analysis.

Results

A total of 197 [102 (51,8%) male, 95 (48,2%) female] premature infant including 75 very preterm [average age of gestation 28 weeks, 73±2,44 (23-31)], 54 moderately preterm [average age of gestation 32 weeks, 58±0,60 (32-33,8)], and 68 late preterm [average age of gestation 34 weeks, 75±1,20 (34-37)] were included in this study. The mean latency (in milliseconds) of P100 wave was

138,94± 21,73; 140,40± 23,85 in the right and left eye respectively (mean normal value in adults is approximately 102.3 ± 8). P100 latency was found shorter in right eye of the late preterm as compared to extremely preterm (P:0,04) and in the left eye as compared to very preterm and extremely preterm (P: 0,02; P: 0,03, respectively) (Table I). The latency of P100 waves was found significantly shorter (p:0,02) in females as compared to males after 18 months of (corrected) age (Table II). In addition, it was seen that late preterm infants approached closer to normal values of P100 latency as compared to others (P> 0.05) after 12 - 18 months of (corrected) age.

Discussion

In the study conducted by Kim et al., it is suggested that prolonged VEP latencies may be an indicator of psychomotor retardation (1). In other study, it was reported that VEP abnormality was found more common in premature infants as compared to full-term infants (7). In another study, it is emphasized that developmental delay may be present at the subclinical level in children with visual impairment even whose developmental stages are considered to be normal in the period from birth to 16 months of age (8). At this stage, VEPs test has become important in detecting low visual acuity at subclinical level.

VEP values have prognostic significance in asphyxiated newborns (9). Additionally, it was stated that it may give a clue about the neurodevelopmental process of cerebral palsy as early as 12 - 24 months (10-13). It was indicated that changes in P100 latency in the VEP test were significant in the first 6 months, it usually reaches the adult values around 1 year of age, and premature infants reach these values a little later (14-16). In our study, it was found that VEP P100 latency values were significantly shorter in late premature babies born after 34 weeks as compared to others (very preterm and moderately preterm). It was observed that VEP P100 latency values approached normal levels more especially on late preterm after 18 months of (corrected) age. In our study, it was also seen that females achieved normal values of P100 latency compared to males (p: 0.02) after 18th month of (corrected) age.

In a study similar to ours including 38 premature infants, it has been shown that there is an inverse correlation between VEP P100 latency and the magnitude of the gestational age and the postnatal age within the same gestational age, VEP P100 latency was found to be shorter among these (5). On the other side, in another study, there was no significant shortening of VEP P100 latency with age between premature infants and the control group (17). However, in this study, a rapid decrease in VEP P100 latency in the first 6 months, a gradual decrease between 6 and 12 months and a shortening between 12 and 18 months were reported to be continuous. As a result of this study, it was emphasized that VEP P100 latency was longer in infants with very low birth weight, and this length continues up to 18 months (corrected) age as compared to the control group. In our study, it was found that VEP P100 latency started to shorten in 3-6 months of (corrected) age period, especially in girls, it continued gradually in the following months, and visual maturation generally approached the final adult values by drawing a plateau between 12-18 months of (corrected) age (Figure II).

In conclusion, neurodevelopmental maturation correlates with myelization process in cerebral regions. There is no difference found between the visual pathways and other cerebral regions in terms of myelinization process. From another perspective, delays in myelinization of the visual pathways may give stimulating insight about the myelinization of other cerebral structures. Accordingly, in order to evaluate visual acuity as an indicator of myelinization, VEP test, which is an easily applicable, non-invasive and cost-effective method, should be evaluated. In this respect, VEP studies are one of the important steps in the evaluation of mental and motor developmental stages that are coordinated with vision in all childhood age groups beginning from infancy. Undoubtedly, abnormal VEPs results will shed light on the multidisciplinary approach (neuro-ophthalmological

examination, ergo-therapy, physical therapy, educational therapies) and will serve as a preliminary step towards more expensive tests such as neuroimaging, EEG.

References

Kim JY, Sung IY, Ko EJ, Jung M. Visual Evoked Potential in Children With Developmental

Disorders:
Correlation With Neurodevelopmental Outcomes. Ann Rehabil Med 2018;42:305-312.
Prechtl HF, Cioni G, Einspieler C, Bos AF, Ferrari F. Role of vision on early motor development: lessons from the blind. Dev Med Child Neurol 2001;43:198-201.
Sayeur MS, Vannasing P, Tremblay E, et al. Visual Development and Neuropsychological Profile in Preterm Children from 6 Months to School Age. J Child Neurol. 2015;30:1159-1173.
Susan R.Levy. Visual Evoked Potentials in Pediatrics. In: Chiappa K H, editor. Evoked Potentials in Clinical Medicine, 3rd Ed. Lippincott Williams & Wilkins; 1997: 147-157.
Schwindt E, Giordano V, Rona Z, et al. The impact of extrauterine life on visual maturation in extremely preterm born infants. Pediatr Res. 2018; 84: 403-410.
Mikó-Baráth E, Markó K, Budai A, Török B, Kovacs I, Jandó G. Maturation of Cyclopean Visual Evoked Potential Phase in Preterm and Full-Term Infants. Invest Ophthalmol Vis Sci. 2014; 55: 2574-2583.
Sayeur MS, Vannasing P, Lefrançois M, et al. Early childhood development of visual texture segregation in full-term and preterm children. Vision Res. 2015;112:1-10.
Cass HD, Sonksen PM, McConachie HR. Developmental setback in severe visual impairment. Arch Dis Child 1994;70:192-196.
Kato T, Watanabe K. Visual evoked potential in the newborn: does it have predictive value? Semin Fetal Neonatal Med 2006;11:459-463.
Shepherd AJ, Saunders KJ, McCulloch DL, Dutton GN. Prognostic value of flash visual evoked potentials in preterm infants. Dev Med Child Neurol 1999;41:9-15.
Beverley DW, Smith IS, Beesley P, Jones J, Rhodes N. Relationship of cranial ultrasonography, visual and auditory evoked responses with neurodevelopmental outcome. Dev Med Child Neurol 1990;32:210-222.
Ekert PG, Keenan NK, Whyte HE, Boulton J, Taylor MJ. Visual evoked potentials for prediction of neurodevelopmental outcome in preterm infants. Biol Neonate 1997;71:148-155.
Pike AA, Marlow N. The role of cortical evoked responses in predicting neuromotor outcome in very preterm infants. Early Hum Dev 2000;57:123-135.
Drislane FW. Visual evoked potentials. In: Blum AS, Rutkove SB, editors. The clinical neurophysiology primer. Totowa: Humana Press; 2007: 461-474.
Fulton AB, Hansen RM, Moskowitz A. Assessment of vision in infants and young children. In: Celesia GG, editor. Handbook of clinical neurophysiology: disorders of visual processing. Amsterdam: Elsevier; 2005: 203-230.
Harding GF. Flash visual evoked cortical potential in developmental delay. In: Heckenlively JR, Arden GB, editors. Principles and practice of clinical electrophysiology of vision. St. Louis: Mosby; 1991: 585-588.
Feng JJ, Wang WP, Guo SJ, Liu ZW, Xu X. **F**lash visual evoked potentials in preterm infants. Ophthalmology. 2013; 120: 489-494.

Table I: Demographic features and VEP P100 **latency**

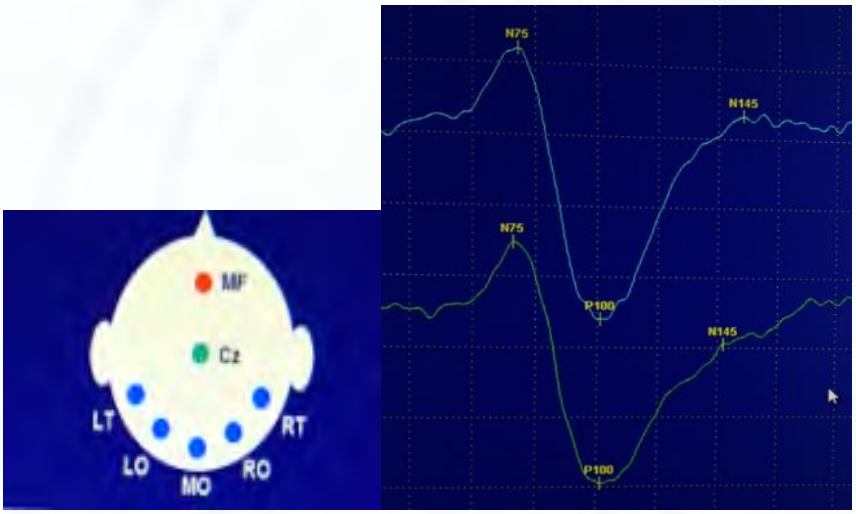
General features				
Gender(F/M) n $_1$(%)/n$_2$(%)	95 (48,2 %) / 102 (51,8 %)			
Birth week (mean±SD)	31,83±3,13			
Birth weight (gr; mean±SD)	1747±592			
VEP P100 latency (ms; mean±SD)	138,94±21,73 (Right eye) 140,40±23,85 (Left eye)			
VEP P100 latency distribution in Preterm subgroup(by ga)	n	%	Right eye (ms)	Left eye (ms)
Very preterm (< 32)	75	38,1	143,69±22,40	145,84±24,29
Moderately preterm (32-34)	54	27,4	140,99±21,08	143,06±23,2
Late preterm (34-36)	68	34,5	132,07±19,97	132,07±21,73
P value			0,04[a],	0,02[b], 0,03[c]

F: Female, M: Male, mean±SD: mean±standard deviation, gr: gram, VEP: Visual Evoked Potential, ms: milliseconds, ga: gestational age,
a and b: significant correlation between late preterm and very preterm, c: between late preterm and moderately preterm

Table II: **Gender distribution in the >18 month of age VEP test**

VEP P100 latency	Right eye (ms)	Left eye (ms)
Female	104,32±1,99	105,37±2,97
Male	127,33±24,07	126,96±23,50
P value	0,02	0,02

VEP: Visual Evoked Potential, ms: milliseconds



A B

Figure I: VEP connection (A) and VEP bioelectrical potential of a patient (B)

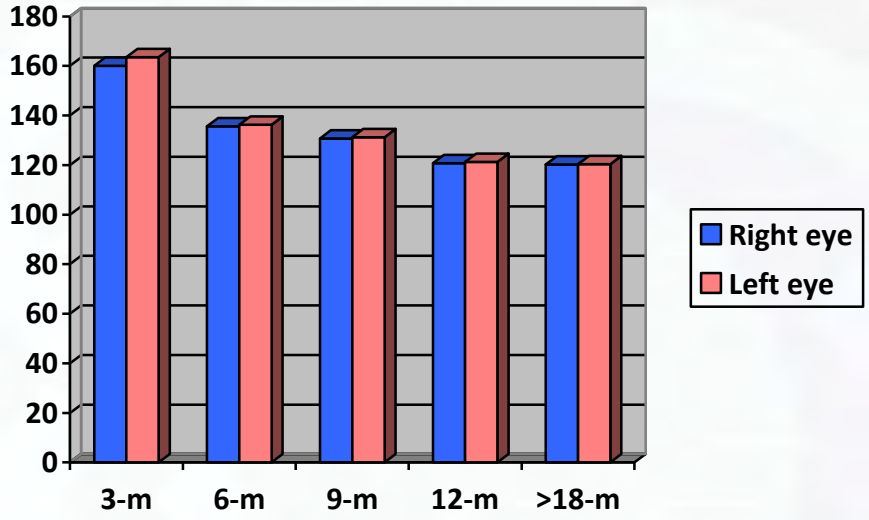


Figure II: VEP P100 latency according to corrected ages (in milliseconds), m:mounth

FT90

Yenidoğanda Epidermolizis Bülloza Dermal Lezyonları Üzerine Topikal Anne Sütü Uygulamasının Yararlı Rolü: Bir Ön Deneyim

The Beneficial Role of Topical Breast Milk Application on Dermal Lesions of Epidermolysis Bullosa in a Newborn: A Preliminary Experience

Esra Damar[1], Ayse S Turkmen[2], Muhammed Y Kilinc [3]

[1]MSc Student of Pediatric Nursing, Karamanoglu Mehmetbey University, Institute of Health Sciences, Karaman,

[2]Karamanoglu Mehmetbey University Health Science Faculty Child Health Nursing Department, Karaman,

[3]Neonatology Fellow, Selcuk University, Division of Neonatology, Konya.

Abstract

Introduction: The nutritional, immunological and psychological effects of breast milk (BM) are well known with it's both nutritional and health benefits on neonates and infants. Additionally, there have been several reports regarding incremental role of BM application in the management of dermatological conditions such as diaper cord rash, atopic eczema, diaper dermatitis and umbilical cord separation. However, according to best of our knowledge BM has not been applied on dermal Epidermolysis Bullosa (EB) lesions to date. Therefore, herein we aimed to report our initial experience with BM on dermal EB lesions in a neonate.

Methods: One-day-old male term newborn was referred to Neonate Intensive Care Unit of our institution with bullous skin lesions overall the body. The baby was diagnosed with EB after Pediatric Dermatology consultation from the same university. Initially, Vaseline oil cream (Unilever, Blackfriars, London, UK) was applied for the skin care. In order to determine the effect of BM on wound healing, parents were informed and potential benefits were discussed, and then their subsequent consent were obtained for BM treatment. To assess wound healing and comparison, face and left hand were covered with BM firstly where Vaseline oil had not been applied. In order to compare the rate of recovery, BM treated regions and Vaseline cream applied areas were analyzed and compared, visually. After application of BM, the neonate was observed for 72 hours in terms for wound healing.

Results:

A noticeable improvement was observed in the areas where breast milk was applied in the third day of treatment in comparison to Vaseline covered areas.

Conclusions: BM was promising in healing process of the skin lesions caused by EB according to our initial impression. However, since the application is only limited with a single case, wider cohorts are needed for better understanding of BM's benefit on wound healing in dermal manifestation of EB lesions.

Keywords: *Epidermolysis bullosa, breast milk, wound healing*

ÖZET

Amaç:

Bu olgu sunumu topikal ilaçların yerine doğal ve bebek için çok değerli olan anne sütünün yara iyileşmesindeki etkisini belirlemek amacı ile yapıldı.

Yöntem:
Konjenital epidermolizis bülloza tanılı bebek A.Ö. anne sütünün yara iyileşmesindeki etkisini belirlemek amacı ile gözlem altına alındı. Çalışmaya başlamadan önce aile ile görüşülerek çalışmaya katılımları için izinleri alındı. Yara iyileşmesini etkin gözlemleyebilmek için bebeğin giysilerinin daha az olduğu ve krem sürülmeyen yüz ve sol el bölgelerine anne sütü uygulaması yapıldı. İyileşme hızını karşılaştırmak amacı ile diğer bölgelerine de krem uygulandı. Bebeğin bakım uygulamaları hastane rutinlerine uygun şekilde yürütüldü. Uygulama sonrası bebekler yara iyileşmesi açısından 72 saat boyunca gözlendi ve görüntüleri karşılaştırıldı.

Bulgular:
Bebek A.Ö'nün uygulamanın üçüncü günündeki değerlendirmesinde anne sütü uygulanan bölgelerinde özellikle yüz bölgesinde gözle görülür bir iyileşmenin olduğu ve dokuların hızla kendini yeniledikleri gözlendi.

Sonuç:
Anne sütünün epidermolizis büllozaya bağlı oluşan yaraların iyileşmesinde etkili bulunmuştur. Ancak uygulama tek vaka ile sınırlı tutulduğundan aynı uygulamanın daha geniş popülasyonla yeniden denenmesi önerilmektedir.

Anahtar kelimeler: *Epidermolizis bülloza, anne sütü, yara iyileşmesi*

Introduction
Epidermolysis bullosa (EB) is a rare genetically transmitted disease characterized by skin fragility and blisters on the skin/mucous membranes as a response to local trauma affecting 8-19 individuals per million (1). It is caused by the lack of structural proteins in the epidermal layer of skin that normally adhere to the epidermis. The EB inheritance pattern is basically divided into three types according to the location of the lesions as well as the level of puffiness of the skin including; simplex, merger and dystrophic (1,2). Specific subgroups of EB are determined by the proteins encoded by abnormal genes (1,2).
There is no definitive cure identified for EB, to date. Supportive treatment is advised to sufferers such as trauma protection and various topical agents as well as genetic counseling in order to monitor the rest of the family members. As a result of skin barrier deterioration, the patients are susceptible to infections as seen in our case. In such circumstances, topical agents are utilized for prophylactic purposes against secondary infections while maintaining skin integrity.
Breast milk (BM) is commonly used for nutritional purposes in infants. However, the benefits are not only limited with alimentation. For example, Kramer and her colleagues have shown that Immunoglobulin A in the content of BM has a preventive effect against skin infections despite they did not (3). The reported forms of topical application of BM are umbilical, diaper and eye care (4,5). Despite the usage of BM on belly care is known as the traditional method of choice, it has now yet taken place in the literature. BM has been shown as an economic alternative to diaper care and it has been shown to be helpful despite the rate of recovery was slightly behind compared to zinc-based creams (6,7). Therefore, we hypothesized that BM may promote healing in the skin manifestation in a neonate with EB.

Case Presentation
A term 1-day-old male newborn was referred to our institution with the preliminary diagnosis of EB due to disseminated bullous lesions covering all over the body. He had a positive family history of the similar skin lesions in his 3 year-old brother. He was weighted 2500 gr in the initial submission. Physical examination revealed an open anterior fontanel, a 3/5 unit of heart murmur, normal two

arteries and one vein in umbilicus, normal range of movements of hips with descended testicles in the scrotum. There were widespread blistering skin lesions in the face, thoracic cage wall, thighs, extremities as well as oral mucosa in the erythematous background some of which showed incrustations.

Umbilical vein and umbilical artery were maintained opened intentionally since the vascular access from the extremities for this baby could be traumatic considering the extensive skin lesions. The lesions were consulted with dermatology and he was prescribed topical creams containing Fucidic acid and Triticum Vulgare extract those applied three times a day to the skin lesions. Additionally, multi-skin cultures and second opinion from ophthalmology and gastroenterology were sought. After topical treatment with the recommended medications, the first tissue cultures were negative. However, there was bacterial growth during the following days of hospitalization in the blood culture. Thus, a second diagnosis of sepsis was made in the follow-up which was managed successfully with parenteral Amicasin and Vancomycin.

After full recovery from sepsis, the patient was treated with topical BM from his mother before each breast feeding. The physicians and nurses were aware of skin regions where Vaseline oil cream (Unilever, Blackfriars, London, UK) were applied and where BM were administrated (fascial and left hand skin surface).

The findings of the study were evaluated through photographs before (Fig. 1) and after 72 hours (Fig. 2) application of BM or Vaseline oil cream.

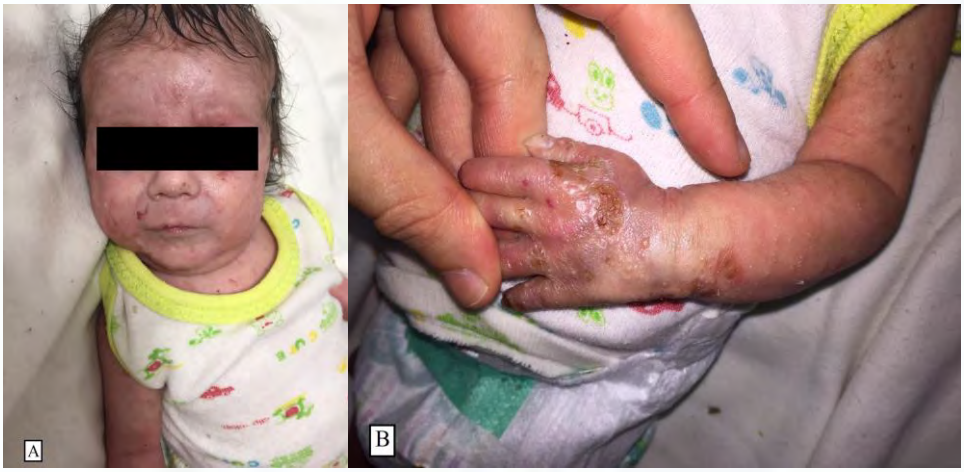


Figure 1. (A) Picture depicting fascial status before treatment. (B) The photographic image taken from dorsal side of left hand.

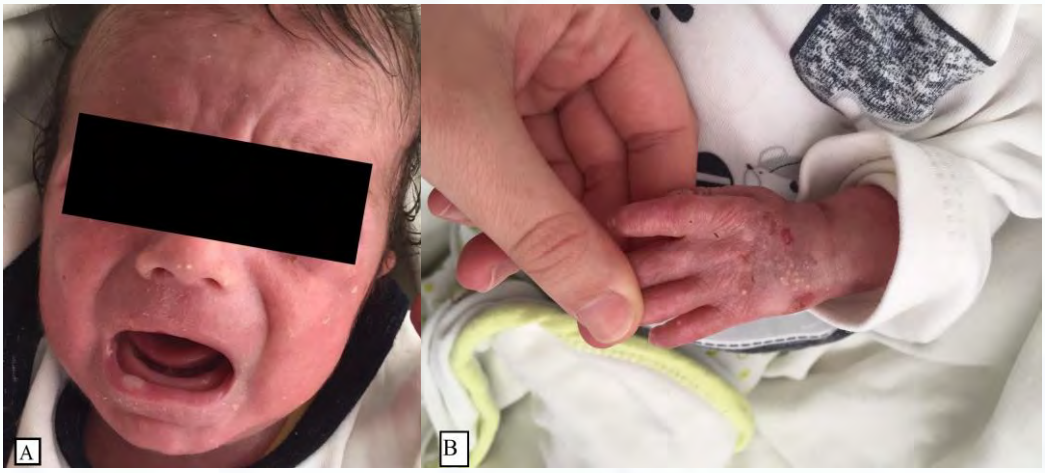


Figure 2. Photographic images obtained after 72 hours following breast milk application. (A) fascial and left hand (B) status.

There was a significant healing best appreciated after 72 hours. Since venous access was supplied dorsal side of the left hand, we stopped topical BM treatment, consequently. Interestingly, there was a relapse of blisters on the left hand adjacent to needle insertion region which was stimulated by local trauma.

Discussion

EB is a serious dermatologic condition primarily caused by gene mutation that leads lack of adhesive protein in epidermal layer of the skin. It is not only seen in congenital form in neonates or infants, but may also be observed in elders secondary to drug reactions. Since local skin irritation precipitates blisters and bullous lesions, as seen in the presented case, cases diagnosed with congenital EB should be protected against dermatologic trauma. Moreover, a skin lesion caused EB may lead to a security/integrity breach which may be further progress to secondary infections. Unfortunately, the present case suffered from sepsis that had to be managed with parenteral antibiotics.

Breast milk has been proven to reduce infection by oral intake thanks to secretory Immunoglobulin A and other various ingredients. Apart from oral intake, there was no difference in the comparison of topical diaper rash, belly care and eye care with pomade and sprays that are normally routinely applied. Based on these evidences, it was considered that breast milk may have positive effects on wound healing with topical application.

Interestingly and thankfully, the mother of our baby had plenty of BM which did not interfere with the nutritional status of the remaining BM. Our responsive and knowledgeable mother kept her BM under the right conditions by storing it in a refrigerator after each milking making BM every time available and fresh.

In the presented case, we have successfully achieved visible improvement after topical application of BM on EB skin lesions. One major drawback resides in the methodology that we did not frequently monitor skin changes with photography. Second limitation is that we lack histopathological confirmation. Since the patient has already diagnosed with EB given the positive family history and trauma induced blistering skin lesions, there was no doubt about the primary underlying pathology. We refrained from skin biopsy due to the septic condition of our case. Histologic confirmation from the BM and Vaseline applied different skin regions would be undoubtedly great adjunct and would have provided better insight about the incremental role of BM application. Thirdly, this is a preliminary impression from a one case based experience. Further studies with larger cohorts are needed for a robust results. Finally, the glucose content of breast milk could have been a source for bacterial overgrowth and subsequent skin infection. However, we as a whole team, kept hygienic measures too tightly and fortunately no secondary skin infection was observed.

Conclusion

The constellation of these findings gave as the preliminary impression that breast milk application of Epidermolysis Bullosa skin lesions are promising. Undoubtedly, higher number of the cases with histologic confirmation is mandatory in order to find a robust correlation.

References

1- *Has, C., & Fischer, J. (2019). Inherited epidermolysis bullosa: new diagnostics and new clinical phenotypes. Experimental dermatology, 28(10), 1146-1152.*

2- *Kulalı, F., Özbakır, H., Kundak, S., Kalkanlı, O. H., Eriş, D., Çolak, R., ... & Çalkavur, Ş. (2019). Epidermolizis Bülloza: Olgu Serisi. Jinekoloji-Obstetrik ve Neonatoloji Tıp Dergisi, 16(2).*

3- *Kramer, M. S., Chalmers, B., Hodnett, E. D., Sevkovskaya, Z., Dzikovich, I., Shapiro, S., ... & Shishko, G. (2001). Promotion of Breastfeeding Intervention Trial (PROBIT): a randomized trial in the Republic of Belarus. Jama, 285(4), 413-420.*

4- *Allam, N. A., Wafa, A., & Talat, A. M. (2015). The effect of topical application of mother milk on separation of umbilical cord for newborn babies. American Journal of Nursing, 4(5), 288-296.*

5- *Ahmadpour-Kacho, M., Zahedpasha, Y., Hajian, K., Javadi, G., & Talebian, H. (2006). The effect of topical application of human milk, ethyl alcohol 96%, and silver sulfadiazine on umbilical cord separation time in newborn infants. Arch Iran Med, 9(1), 33-38.*

6- *Kasrae, H., Amiri Farahani, L., & Yousefi, P. (2015). Efficacy of topical application of human breast milk on atopic eczema healing among infants: a randomized clinical trial. International journal of dermatology, 54(8), 966-971.*

7- *Seifi, B., Jalali, S., & Heidari, M. (2017). Assessment effect of breast milk on diaper dermatitis. Dermatology reports, 9(1).*

FT91

İnsan İnsana İlişki Modeli İle Trakeostomili Çocuk Hastanın Ailesine Yaklaşım: Olgu Sunumu

Tracheostomy Child's Family Approach with Human Relationship Model: Case Report

Esra DAMAR[1], Ayşe Sonay TÜRKMEN[2]

[1]Karamanoğlu Mehmetbey Üniversitesi Sağlık Bilimleri Enstitüsü Çocuk Sağlığı ve Hastalıkları Hemşireliği Yüksek Lisans Öğrencisi

[2]Karamanoğlu Mehmetbey Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Bölümü, Karaman

ÖZET

Amaç:
Bu olgu sunumu Travelbee'nin insan insana ilişki modelinin pediatride servislerinde veya yoğun bakımlarında yatan küçük çocuklara nasıl kazandırabiliriz düşüncesi ile yola çıkılmış olup bu modelin en etkili şekilde pediatride kullanımı amacı ile yapılmıştır.

Yöntem:
Eve taburculuğu planlanan trakeostomi ve gastrostomi açılmış olan çocuk yoğun bakım ünitesinde yatmakta olan bir çocuğun ailesine verilecek olan eğitimde travelbee'nin insan insana ilişki modelinin basamakları uygulanmıştır. Değerlendirme olarak hastanın annesinin bakım sürecindeki gelişimi göz önüne alınmıştır.

Bulgular:
Hemşire açısından bakıldığında bu uygulama bakım veren birey hakkında daha çok bilgiye ulaşmayı, bakım veren annenin bilgi ve yeteneklerini daha iyi nasıl kullanabileceğini görmeyi sağladı. Bakım veren anne yönünden insan insana ilişki kuramının basamaklarında sırayla ilerledikçe bakım konusunda kendine güveni arttı, bilgi bakımından öğrenme isteği, A.S.'ye bakma ve bakıma katılma isteğinin artmış olduğu gözlendi.

Sonuç:
Joyce Travelbee'nin oluşturduğu insan insana ilişki modelinin pediatride, bakım hastalarının ailelerine uygulanması aile ile hemşire arasındaki bağı güçlendirerek ailenin bu durumla baş etmesini kolaylaştırmaktadır. Annenin, çocuğun bakımının önemini kavrama ve bakımda istekli olmasını bu olguda arttırmıştır.

Anahtar Kelimeler: *Joyce Travelbee, İnsan İnsana İlişki Modeli, Pediatri*

ABSTRACT

Objective:
This case report was set out with the idea of how we could bring travelbee's human relationship model to young children in pediatric services or intensive care units and with the aim of using this model most effectively in pediatrics made.
Methods: The steps of travelbee's human-to-human relationship model were applied in the training to be given to the family of a child who was in the pediatric intensive care unit with a tracheostomy and gastrostomy who had been discharged home. As an evaluation, the development of the patient's mother in the care process was taken into consideration.
Results: From the nurse's point of view, this practice provided access to more information about the caregiver and how the caregiver could better use his/her knowledge and abilities. As the mother who

cared took turns in human relationship theory, his confidence in care increased, the desire to learn in terms of knowledge, the desire to look after A.S. and to participate in care were observed.

Conclusion:
Applying the human-to-human relationship model created by Joyce Travelbee to the families of care patients in pediatrics strengthens the bond between family and nurse, making it easier for the family to cope with this situation. In this case, the mother's willingness to comprehend and care for the importance of the child's care has increased in this case.

Keywords: *Joyce Travelbee, Human Relationship Model, Pediatric*

Giriş
Travelbee'nin insan insana ilişki modelinde hastanın hastalığından anlam bulması amaçlanmaktadır (1). Bu modelde hemşirenin hasta ile kurduğu iletişimin verimli bir sonuca ulaşabilmesi için beş basamak vardır. Bu basamaklar sırasıyla, ilk karşılaşma, hemşire ile bireyin önceki deneyimlerinden faydalanarak oluşturdukları ilk izlenimlerin ortaya çıkış aşamasıdır, kimliklerin ortaya çıkması, bireyin hemşireyi sadece hemşire kimliği ile değil yavaş yavaş kişiliği ile karşılaması, hemşire açısından da bireyi hasta olarak değil kişi olarak algılamaya başladığı ve kişiliğini keşfettiği basamaktır. Empati, bireyin içerisinde bulunduğu durumu anlama basamağıdır. Sempati, bireyin içinde bulunduğu durumu algıladıktan ve anladıktan sonra ona yardım edici eylemde bulunulan basamaktır. Dostça ilişki kurma son basamak olup karşılıklı güven duygusunun oturduğu basamak olarak açıklanmaktadır (1,2,3).
Bu modelin çocuk hastalara hatta bu olguda olduğu gibi küçük yaş çocuklara uygulanması zordur. Ancak oldukça etkili olabileceği de gözlenmiştir.
Olgu
28 hafta+6 günlük prematüre doğum öyküsüne sahip A.S. yenidoğan yoğun bakım ünitesinde akciğerlerinin tam gelişmemesi sebebiyle ve diğer sistemlerin prematüre olmasından dolayı bir süre kalmış, vital bulgular ve gelişimi iyileşince sürekli oksijenle yenidoğan bakım ünitesinden eve taburcu edilmiş. Evde 1 hafta geçiren A.S. solunum sıkıntısı ile dış merkeze başvurmuş, yoğun bakım ihtiyacından dolayı çocuk yoğun bakıma yatırılmıştır. Düzeltilmiş yaşı 3 ay 3 hafta iken yatışı yapılan A.S. mekanik ventilatörden ayrılamadığı için halen daha yoğun bakım ünitesinde yatmakta. Kronik akciğer gelişen hastada entübasyon ve extübasyon sık uygulanmasından ve akciğerlerinin kötüleşmesinden dolayı trakeostomi açılması planlandı.

İnsan İnsana İlişki Modeline Göre Dostça İlişki Süreci
Bu süreçte iletişim en büyük rolü oynamaktadır. Bakımın amacını yerine getirmesinde, hemşire ile iletişim kurarak ailelerin hastalık ve acı çekme durumları ile başa çıkmalarına yardım eder. (Travelbee 1963)
İletişimde hedeflere ulaşabilmek için, ilk karşılaşma, kimliklerin ortaya çıkması, empati, sempati ve dostça ilişki bulma aşamalarını olması gerekmektedir. (Turan ve Vural 2017)

İlk Karşılaşma Aşaması
Bu aşamada geçmişte yaşadıkları deneyimlerle birlikte hasta ve hemşire birbirlerine yaklaşırlar. Bu aşamada ön yargı önemlidir. Hasta ile hemşire arasında bu aşamada profesyonel bir ilişkinin kurulmaması hastayla etkileşimi etkilediği gibi çocuk hastalarda hasta yakınıyla da etkileşimi etkilemektedir.
Kronik akciğer gelişen hastada entübasyon ve extübasyon sık uygulanmasından ve akciğerlerinin kötüleşmesinden dolayı trakeostomi açılması planlanan A.S.'nin ailesinden onam alındı. Annesi ziyaretlerine fazla gelememekte idi. İki haftada bir babası ihtiyaçlarını getirip gidiyordu. Onam için

annesi de geldiğinde doktorlar sık entübasyonun risk oluşturacağını, akciğerlerinin havalanmasının düşük olmasından dolayı basınca ihtiyacı olduğunu, bu durumda mekanik ventilatörden ayrılamayacağını ve bundan sonra bakım hastası olarak yaşayabileceğini aileye açıkladılar. Anne biraz endişeliydi, baba ise "Ne gerekiyorsa yapalım." diyordu.

Kimliklerin Ortaya Çıkması Aşaması

Hasta ile hemşire birey olarak birbirlerini tanımaya başladığı aşamadır. Bu aşamada hemşireyi normal bir insan olarak, hemşirede hastayı normal bir insan olarak tanımayı öğrenir ve öyle yaklaşmaya başlar. Kişilik olarak birbirlerini tanıyan hemşire hasta, bizim olgumuzda hasta yakını kendini daha rahat ifade edebilir duruma gelmektedir.

Bu aşamada, taburculuk planlaması hastanın hastaneye yatışıyla beraber başladığı ve bu hastanın bakımında anneye ve babaya büyük bir rol düşeceği için anneyi tekrar bilgilendirdim.

Trakeostomi bakımını, aspirasyon bakımını öğreteceğimizi ve tam anlamıyla öğrenmeden eve taburcu etmeyeceğimizi, herhangi bir durumda nasıl müdahale edebileceğini, evde sağlık bakımı ve aile hekimliğinin bu konuda bilgilendirileceğini anlattım. *Annenin tepkisi, "Ya bakımını iyi yapamazsam yanlış bir şey yaparsam onu tehlikeye atarım."* oldu.

Empati Aşaması

Hemşire ve hasta veya olgumuzsa hasta yakını ile arasında empati kurabileceğimiz aşama olarak ifade edilir. Bu aşamada hemşire hasta veya hasta yakınının yerine kendisin, koyar ve onun neden öyle hissettiğini, neden bu davranışları gerçekleştirdiğini öğrenir.

Annenin kendini ifade edebilmesiyle endişelerini anlayabildim. Kendimi annenin yerine koyduğumda, ilkokul mezunu olduğunu, ev hanımı olduğunu, tıbbi açıdan birçok şey hakkında bilgisi olmadığını ve bu bakımı öğrenmekte çok zorluk yaşayıp doğru bir şekilde bakım veremeyeceğini düşündüğünün farkına vardım

Sempati Aşaması

Bu aşamada hemşire bireyin sıkıntılarını anlamaktadır ve onu rahatlatmak için yarımcı olabileceği eylemleri gerçekleştirir (Özcan 2006). Empatide kişinin stresi algılanır, stres kaynağı tespit edilebilir fakat sempatide bunların dışında stresi azaltma için istek duyulur. Hastanın ihtiyacı da budur. Empati sadece olayların nedenlerinin farkına varmamızı sağlarken sempati nedene yönelik girişim yapmamızı sağlar.

Sempati aşamasında bu korkularının normal olduğunu açıkladım ve öncesinde trakeostomi açılan bir hastanın annesi ile görüştürdüm. Daha eskiden trakeostomi açılan hasta da bakım hastası olup eve taburculuğu planlanmaktadır. Annesinin endişelerinin normal olduğunu diğer hastanın annesinin de aynı sıkıntılar yaşadığını ama eğitimlere katıla katıla yapabildiği bir şey olduğunu ve iyi bir bakım verdiğini anlattım ve o anne ile görüşmesini sağladım. A.S.'nin annesi onun yaşadığı kaygıları anladığımı hissedince daha rahat bir şekilde sormak istediklerini sordu, yapabileceği ne varsa öğrenmek istediğini belirtti.

A.S. annesini görünce mutlu olan bir bebekti ama daha önceleri annesini bu kadar göremiyordu, ziyaret saatinde diğer hasta çocukların, bebeklerin annelerinin geldiğini hissedip hüzünleniyordu. Bakıma annenin de destek vermesi A.S. ile anne arasındaki bağı güçlendirdi.

Dostça İlişki Aşaması

Bu aşamada karşılıklı güven duygusu gelişmektedir. Turan ve Vural'a göre bireyin sıkıntılarını azaltmak için uygulanan hemşirelik uygulamasıdır. A.S.'nin annesinin bakımını en iyi şekilde yaptığını ve kendine güvenli bir şekilde yaptığını gözlemledim. Artık bu sürecin başındaki gibi korkmuyor ve taburcu olacakları günü bekliyor.

Kaynakça

1. *Özcan, A., (2006). Hemşire-hasta İlişkisi ve İletişim. Ankara, Türkiye: Sistem Ofset Matbaacılık, ss 84-97*
2. *Travelbee, J., (1963). What Do We Mean by Rapport? American Journal of Nursing, ss 70-72*
3. *Turan, Z. ve Vural, G (2017) Endometrium Kanserli Bir Kadının Joyce Travelbee'nin İnsan İnsana İlişki Modeline Göre İncelenmesi: Olgu Sunumu. Uluslararası Hakemli Kadın Hastalıkları ve Anne Çocuk Sağlığı Dergisi Doi: 10.17367/JACSD.2017.3.11*

FT92

A "Real-time Ultrasound-Guided Percutaneous Renal Biopsy with an Automated Biopsy Gun" Experience in an Incipient Pediatric Nephrology Unit

Behcet ŞİMŞEK

Haydarpaşa Numune EAH Çocuk Nefrolojisi Ünitesi İstanbul

Introduction:

Renal biopsy is an important diagnostic procedure for pediatric nephrologists; however it has added difficulties of patient size and ability to cooperate in children. Percutaneous renal biopsy (PRB) is currently the standard of technique. Although safety of the procedure and diagnostic yield, considerably improved with "automated spring-loaded biopsy device", serious complications might still be observed. There is paucity of data on PRB outcomes in children (1,2,4,5,6.

On the other hand, A renal biopsy is regarded as one of the essential skills to be acquired by pediatric nephrology trainees, however; in recent years PRBs have been taken over by non-nephrologists in many instituitions. Eventually young nephrologists are faced with the risk of missing the technical expertise to perform a renal biopsy due to lack of training and feeling dissatisfaction with their career choice (3).

The aim of this study is to investigate biopsies carried out in an incipient Pediatric Nephrology Unit of a tertiary hospital with regard to sample adequacy and complications.

Methods:

Institutional database from 2015 to November 2019, for records of 27 patients who underwent PRB were retrospectively searched. A standard preparation procedure was followed: before kidney biopsies a complete blood count, international normalized ratio/ prothrombin time, activated partial thromboplastin time, serum creatinine, and a type and screen were obtained. Medications were quized for agents that might increase bleeding risk and signed informed consents from a parent were acquired. Thereafter, a pre-biopsy renal ultrasound, vital signs of each patient were checked and indication for biopsy was confirmed. Adequate intravenous access was provided.

All biopsies were performed using a "Bard automated spring-loaded biopsy gun" loaded with a 16 Gauge needle. Under real-time-ultrasound guidance (RTUG) with a 3.75-MHz transducer, as the patient was kept in prone position, the needle was advanced by a pediatric nephrologist, until reaching the lower pole of the kidney and subsequently fired and removed to check for tissue specimen. Post-PRB, we monitored vital signs according to local practice for 24 hours: we prescribed bed rest for 6 hours, and we monitor vital signs every 15 minutes for 2 hours, every 30 minutes for 4 hours, and then, 2 hourly for the remainder of the observation period. A complete blood count is checked 1-4–8 hours after PRB, and voiding is checked for gross hematuria.

An adequate biopsy is defined as one in which the pathologist could achieve a confident diagnosis, and generally included ≥10 glomeruli (1-5).

IBM SPSS Statistics V22 was used for statistical analysis

Results:

Of 27 patients, 14 were girls (51.9%), 13 were boys (48.1%). Median age was 15 years (3-17 years). Biopsy was performed under sedation with local anesthesia or conscious sedation in 26/27(96.3%) patients, and under general anesthesia in 1/27(3.7%). Median glomeruli number obtained from specimens was 18 (7-54 glomeruli). Median body mass index is 23.1 kg/m^2 (16.1-34.1 kg/m^2). A diagnosis was achieved in all 27 (100 %) cases by a histopathologist, despite 2 cases (7%) having 7 glomeruli each. Only a 16 year old boy who had lost his cooperation at the time the biopsy gun had

fired, suffered from gross hematuria (3%) in only one urination occasion without a hemoglobin (Hb) descent, but 10 mm thick subcapsullar hematoma which resolved spontaneously in a week. All patients were discharged after 24 hours.

Conclusion:

This study shows that, "Real-time ultrasound-guided PRB with an automated biopsy gun" provides superior yield and is a safe consolidated technique in children when performed by nephrologists per se. In addition, this approach is beneficial as it saves the time of shifting from nephrology ward to radiology centre, preventing inappropriate monitoring during transfer between unit and it offers the comfort of continuous visualisation of the needle's position in the renal parenchyma, without posing a risk of radiation for the patient, a shortened biopsy time, and obtaining sufficient diagnostic material. Finally, kidney biopsy has always been considered a characteristic of nephrologist's job description and young nephrologists and trainees should be encouraged for performing.

References:

1. *Hogan JJ, Mocanu M, Berns JS, The native kidney biopsy: Update and evidence of best practice Clin J Am Soc Nephrol 11: 354–362, 2016. doi: 10.2215/CJN.05750515*
2. *Fogo AB,Approach to renal biopsy. AJKD, Vol 42, No 4 (October), 2003: pp 826-836 doi: 10.1053/S0272-6386(03)01054-0*
3. *Esposito V, Mazzon G, Baiardi P et al. Safety and adequacy of percutaneous kidney biopsy performed by nephrology trainees. BMC Nephrology (2018) 19:14 doi: 10.1186/s12882-017-0796-y*
4. *Golay V, Roychowdhury A. The percutaneous native kidney biopsy: a nephrologist's perspective. OA Nephrology 2013 May 27;1(1):8.*
5. *Pendón-Ruiz de Mier MV, Hernández ME, Cristian Rodelo-Haad CR, et.al. Prospective study of the complications associated with percutaneous renal biopsy of native kidneys Nefrologia 2014; 34(3):383-7doi:10.3265/Nefrologia.pre2014.Jan.12323*
6. *Hussain F, Mallik M, Marks SD et.al. on behalf of the British Association of Paediatric Nephrology. Renal biopsies in children: current practice and audit of outcomes. Nephrol Dial Transplant (2010) 25: 485–489 doi: 10.1093/ndt/gfp434*

FT93

Evaluatıon Of Clınıcal And Laboratory Fındıngs Of Children And Adolescent Patıents Wıth Hashımoto Thyroıdıtıs

Abdulvahit Aşık [1], Semih Bolu [2,]

[1]Adıyaman Üniversitesi Tıp Fakültesi, Çocuk Sağ. ve Hast. Anabilim Dalı, Adıyaman, Türkiye

[2]Adıyaman Üniversitesi Tıp Fakültesi, Çocuk Endokrinoloji Bilim Dalı, Adıyaman, Türkiye

Abstract

Objective:

The purpose of this study was to evaluate the clinical and laboratory findings of 73 children and adolescents followed-up with a diagnosis of Hashimoto's thyroiditis.

Methods: Seventy-three patients aged between 4 and 18 years followed-up with a diagnosis of Hashimoto's thyroiditis at the pediatric endocrinology clinic between 2016 and 2019 were included in the study. All patients' thyroid function tests, thyroid antibodies, physical examination findings and thyroid ultrasonography results at diagnosis and follow-up were evaluated.

Results:

Fifty-seven (78.1%) patients were girls and 12 (21.9%) were boys, with a female/male ratio of 3.5/1. Goiter was detected at time of diagnosis in 25 cases (34.2%), but not in 48 (65/8%). At time of diagnosis, hyperthyroidism was present in 13 cases (17.8%), hypothyroidism in 16 (22%), subclinical hypothyroidism in 9 (12.3%), euthyroidism in 33 (45.2%), and subclinical hyperthyroidism in 2 (2.7%). The most common symptoms at time of presentation were swelling in the neck, sweating, fatigue, and lack of appetite. Heterogeneity and a hypoechoic appearance were observed in 77% of cases and nodules in 11% at thyroid ultrasonographic examination, while no pathology was determined in 12%.

Conclusions:

Children and adolescents with Hashimoto's thyroiditis may exhibit different and clinical findings. Thyroid ultrasonography occupies an important place in the diagnosis and follow-up of the disease.

Key words: Hashimoto's thyroiditis, child, adolescent

INTRODUCTİON

Hashimoto's thyroiditis (HT) is an autoimmune disease which characterized by inflammation of the thyroid gland (1). HT is the most common cause of hypothyroidism in areas without iodine deficiency (2). Hashimoto's thyroiditis which accounts for 20% of patients with hypothyroidism, has been associated with autoimmune diseases such as systemic lupus erythematosus, rheumatoid arthritis, diabetes mellitus and Sjogren's syndrome (3). The diagnosis of HT is based on the detection of increased antithyroid antibodies in the serum and the presence of goiter (4). Patients may be present in the euthyroid, hypothyroid or hyperthyroid clinic at the time of admission (5). In this study, we aimed to evaluate epidemiological, clinical and laboratory findings of HT patients in our outpatient clinic.

MATERIALS AND METHODS

We were retrospectively evaluated files of 78 patients (67 female and 11 male) between 4 and 18 years of age who were diagnosed as HT in our Pediatric Endocrinology Clinic between 2016 and

2019. The diagnosis of HT was based on high levels of antithyroid antibodies levels and the findings on thyroid ultrasonography.

Thyroid function tests and antithyroid antibodies were evaluated. The patients were divided into groups as euthyroid (normal TSH and T4 levels), hypothyroid (high TSH and low T4), subclinical hypothyroid (high TSH and normal T4), hyperthyroid (suppressed TSH and high T4) and subclinical hyperthyroid (suppressed TSH and normal T4). Ultrasonographic examination of the thyroid was performed by expert radiologist radiologist using the device with the trademark Esaote Mylab Seven. In the calculation of thyroid volume, length × depth × width × 0.523 of formula was used and the values above 97th percentile according to age were called as goiter. Thyroid function tests and antithyroid antibodies levels were studied with Beckman Coulter DxI800 device. Statistical analysis was performed using SPSS-24 package program. Abnormal variables were evaluated by Kruskal Wallis, Mann-Whitney U and Chi-square tests. Mean, standard deviation and percentages were calculated as descriptive statistics. In our study, $p < 0.05$ was considered significant. Ethics committee approval was received from Adıyaman University Ethics Committee in 2019. (Approval No: 2019 / 3-19).

RESULTS

In this study, 78.1% (57) of the patients were female and 21.9% (16) were male. The female / male ratio was 3.5/1. When diagnosed, euthyroidism in 45.2% (33) of the patients, hypothyroidism in 22% (16), hyperthyroidism in 17.8% (13), subclinical hypothyroidism in 12.3% (9) and 2.7% (2) had subclinical hyperthyroidism.

The number of patients, gender, age, presence of goiter, thyroid autoantibody levels and their distribution according to thyroid function tests were examined (Table 1). When patients were compared according to thyroid function tests; there was no significant difference in thyroid autoantibody levels, age, gender and presence of goiter ($p > 0.05$). There was no subclinical hypothyroidism and subclinical hyperthyroidism among the patients with goiter. The number of euthyroid patients was 20 (60.6%).

The autoantibody levels were examined according to the pubertal development stage (Table 2). Twenty-two (30%) of the cases were in the prepubertal period and 51 (70%) were in the pubertal period. Antibody titers of the patients at the first admission; anti-TPO in the prepubertal period: 487.36 ± 97 IU / mL, Anti TG: 30.3 ± 10 IU / mL, and in the pubertal period anti-TPO: 460 ± 61 IU / mL Anti TG: 30.3 ± 10 IU / mL. There was no significant difference between thyroid autoantibody levels according to pubertal development stage.

The complaints of the cases are shown together with their frequenc in the table 3. As shown in the table, 30 (41%) of the cases consisted of patients with impaired thyroid function tests during routine examinations at the pediatric outpatient clinic and diagnosed with Hashimoto's thyroiditis after further examination. According to thyroid USG results, while no pathology was detected in 9 patient (12%), heterogeneity and hypoechoic appearance in 56 (77%), and nodules in 8 (11%). Additional autoimmune disease was detected in seven patients (9.5%).

DISCUSSION

Hashimoto's thyroiditis (chronic lymphocytic thyroiditis) is the most common cause of thyroid dysfunction in children and adolescents and is responsible for most cases of acquired hypothyroidism with or without goiter (6). The prevalence of Hashimoto's thyroiditis (HT) ranges from 1.3% to 9.6% (7). Environmental factors such as bacterial or viral infections, increased iodine uptake and medications have been implicated in the etiology (5). Although there is evidence that HT is a familial inherited disease, specific genetic transmission could not be established (8). There is correlation between the occurrence of the disease and some HLA (DR3, DR4 and DR5) tissue groups (9).

Although the incidence of HT increases after the age of six years, it is most commonly seen in adolescence (9,10).

In domestic studies, Ozer et al. (11) reported the mean age at diagnosis as 14.35 ± 3.87 years, while Özsu et al. (12) reported as 11.5 ± 2.8 years. In our study, the mean age at diagnosis was 12.82 ± 3.16 years, which was compatible with the literature. Previous studies have reported that the incidence of HT in girls is 2-9 times higher than in boys (5,9,13). In our study, it was found to be 3.6 times higher in girls and compatible with the literature. Clinical picture of HT may vary from euthyroidism to subclinical hypothyroidism or hyperthyroidism (14). Dündar et al.(15) reported that 62,8% of the patients with HT were euthyroid at admission, while Özen et al.(16) reported this rate as 36.7%. In our study, euthyroidism was detected in 45.2%, hypothyroidism in 22%, hyperthyroidism in 17.8%, subclinical hypothyroidism in 12.3% and subclinical hyperthyroidism in 2.7% of the patients at the time of diagnosis. This finding was attributed to the early presentation of our patients. Patients with HT may present with complaints such as weakness, fatigue, forgetfulness, lack of concentration, dry skin, hair loss, chills, constipation and short stature (17). In our study, 30 (41%) of the cases consisted of patients with impaired thyroid function tests during routine examinations at the pediatric outpatient clinic and Hashimoto's thyroiditis was diagnosed after further examination. In addition, neck swelling, weakness, sweating, palpitation and irritability were the most common complaints. In the previous studies, antithyroid antibodies were found to be positive in 60% to 80% of patients with HT (18). However in our study, antithyroid antibodies were present in all cases at admission. Thyroid ultrasonography is used as a reliable diagnostic tool in HT cases. Typical USG findings of Hashimato thyroiditis are defined as hypoechoic and heterogeneous thyroid tissue (19). Rarely, normal ultrasonographic findings may also be seen. In our country, Demirbilek et al. (5) reported as 92.9% of appearance rate compatible with thyroiditis on USG examination. In our study, heterogeneity and hypoechoic appearance in the parenchyma structure were observed in 77% of the cases. HT increases the risk of developing thyroid nodules rather than the risk of thyroid cancer in children and adolescents (20). Kaya et al. (21) reported the rate of thyroid nodule development in patients with HT as 34.4%, while Tuhan et al. (22) reported as 7.5%. Thyroid nodules were detected in 11% of our cases on USG examination and it was compatible with the study of Tuhan et al.

In conclusion, HT is a common autoimmune disease in children and adolescents and is the most important cause of goiter in areas without endemic iodine deficiency. Patients may present with euthyroidism, sometimes with hypothyroidism or hyperthyroidism. Thyroid USG has an important role in the diagnosis and follow-up of these patients.

References

1. *Becker KL. Principles and Practices of Endocrinology and Metabolism. Second ed. Philadelphia: J.B. Lippincott Co. 1995; 414-417.*
2. *Gopalakrishnan S, Marwaha RK. Juvenile Autoimmune Thyroiditis. J Pediatr Endocrinol and Metab. 2007, Cilt 20, s. 961-70.*
3. *Lehmann, H. W, Lutterbüse, N, Plentz, A, et al. Association of Parvovirus B19 Infection and Hashimoto's Thyroiditis in Children. Viral Immunology, 2008;21:379-383. doi:10. 1089/vim.2008. 0001*
4. *Fisher DA. Thyroid disorders in childhood and adolecence. In: Sperling MA, editör. Pediatric Endocrinology. 3rd ed. Philadelphia: Saunders Elsevier, 2008; 227-53.*
5. *Demirbilek H, Kandemir N, Gonc EN, Ozon A, Alikasifoglu A, Yordam N. Hashimoto's thyroiditis in children and adolescents: a retrospective study on clinical, epidemiological and laboratory properties of the disease. J Pediatr Endocrinol Metab. 2007;20(11):1199-205.*
6. *Jeong SH, Hong HS, Lee JY. The association between thyroid echogenicity and thyroid function in pediatric and adolescent Hashimoto's thyroiditis. Medicine (Baltimore). 2019 Apr;98(14):e15055. doi: 10. 1097/MD. 0000000000015055.*

7. *Kabelitz M, Liesenkötter KP, Stach B, et al. The prevalence of anti-thyroid peroxidase antibodies and autoimmune thyroiditis in children and adolescents in an iodine replete area. Eur J Endocrinol 2003;148:301–307*
8. *Gönç N, Kandemir N. Guatr. 1. Baskı. İstanbul: Çocuk Endokrinolojisi 2013.p.345-54*
9. *Setian N. Hypothyroidism in children: diagnosis and treatment. J Pediatr 2007;83(5):209-16.*
10. *Yeşilkaya E, Belen B, Bideci A, Çamurdan O, Boyraz M, Cinaz P. Kronik otoimmün tiroiditli çocuk ve ergenlerin klinik özellikleri. Gülhane Tıp Dergisi. 2008; 50: 147-50.*
11. *Özer S, Sönmezgöz E, Yilmaz R, et al. Hashimoto Tiroiditli Olgularımızın Klinik ve Laboratuvar Bulgularının Değerlendirilmesi, Gaziosmanpaşa Üniversitesi Tıp Fakültesi Dergisi 2015;7: 23-29)*
12. *Özsu E, Mutlu R. G. Y, Cizmeci F, Hatun Ş. Characteristics of our patients with Hashimoto thyroiditis. Turk Pediatri Arsivi-Turkish Archives Of Pediatrics, 2011;46(3):252-5*
13. *Radetti G, Gottardi E, Bona G, Corrias A, Salardi S, Loche S. The natural history of euthyroid Hashimoto's thyroiditis in children. J Pediatr 2006; 149: 827-32*
14. *Valenzise M, Porcaro F, Zirilli G, De Luca F, Cinquegrani M, Aversa T. Hypoceruloplasminemia: an unusual biochemical finding in a girl with Hashimoto's thyroiditis and severe hypothyroidism. Pediatr Med Chir. 2018;5:40(2). doi: 10. 4081/pmc.2018.179.*
15. *Dundar B, Boyacı A, Sarıgün Ö, Dündar N. Hashimoto thyroidits in children and adolescents: evaluation of clinical and laboratory findings. Turk Pediatri Ars 2011;46: 318-22.*
16. *Ozen S, Berk O, Simsek D G, Darcan S. Clinical course of Hashimoto's thyroiditis and effects of levothyroxine therapy on the clinical course of the disease in children and adolescents. J Clin Res Pediatr Endocrinol 2011; 3: 192-7*
17. *Özlük A, Abalı S, Tamer İ. The Journal of Turkish Family Physician 2017;8(3):79-82* ***Doi:****10.15511/tjtfp.17.00379*
18. *Ugurluoglu C, Dobur F, Karabagli P, Celik ZE. Fine needle aspiration biopsy of thyroid nodules: cytologic and histopathologic correlation of 1096 patients. Int J Clin Exp Pathol 2015;8(11):14800–05*
19. *Radetti G. Clinical Aspects of Hashimoto's Thyroiditis. Paediatric Thyroidology. Endocr Dev. Basel 2014; 26: 158–70.*
20. *Radetti G, Loche S, D'Antonio V, et al. Influence of Hashimoto Thyroiditis on the Development of Thyroid Nodüles and Cancer in Children and Adolescents. J Endocr Soc. 2019;3: 607-616.*
21. *Kaya T, Varim C, Nalbant A, Gunduz Y, Tamer A. Ultrasonographic findings of thyroid in patients with Hashimoto thyroiditis: overt hypothyroid and euthyroid. Med Glas (Zenica) 2013; 10: 343-347.*
22. *Tuhan H, Işık S, Abacı A,et al. Celiac disease in children and adolescents with Hashimoto Thyroiditis. Turk Pediatri Ars. 2016;51: 100-105.*

Tables.
Table 1. Distribution of some variables according to thyroid function status at the time of admission.
Table 2. Autoantibody levels according to pubertal development stage.
Table 3. Distribution of clinical complaints.

Table 1. Distribution of some variables according to thyroid function status at the time of admission.

		Hypothyroid	oid	Subclinical hypothyroid	Subclinical hyperthyroid	p
Number of patients n (%)	33 (45,2)	16 (22)	13 (17,8)	9 (12,3)	2 (2,7)	
Average age (Years)	12,8±3	13,39±2,5	14,1±1,8	10,2±4,5	11,1±6,2	0,12*
The presence of goiter						
Yes	13(%39,4)	5 (%31,3)	7 (%100)	0	0	0,06**
No	20 (%60,6)	11 (%68,8)	6 (%46,2	9 (%100)	2 (%100)	
Anti TG	81,4±38	63,6±25	282,3,9±164	61,7±29	20,8±14	0,19*
Anti TPO (IU/ml)	454±78	564±126	470±110	335±113	529±424	0,78*

Table 2. Autoantibody levels according to pubertal development stage.

	Prepubertal n:22	Pubertal (n:51)	p
Anti TG	30,3 ±10	143,2 ±49	0,08*
Anti TPO	487,36±97	460±61	0,49

Table 3. Distribution of clinical complaints.

Complaint	Number of patients (n)
No complaints	30 (%41)
Nervousness	1 (%1,36)
Sweating	6 (%8,2)
Weakness, loss of appetite	7 (%9,5)
Weight gain	5 (%6,8)
Hair loss	4 (%5,4)
Palpitation	6 (%8,2)
Constipation	4 (%5,4)
Swelling on the neck	10 (%13,6)

FT94

Nursıng Approach Accordıng To Roy Adaptatıon Model For A Adolescent Dıagnosed Wıth Celıac Dısease And Type 1 Dıabetes Mellıtus

Melike Baş, Birsel Molu, Ayşegül Bükülmez

Selcuk University Aksehir Kadir Yallagöz Health School, Konya, Turkey.

Selcuk University Aksehir Kadir Yallagöz Health School, Konya, Turkey.

Afyonkarahisar Health Sciences University, Department of Pediatrics, Afyonkarahisar, Turkey

Abstract

The aim of this study is to help nursing care and the importance of emotional support in coping process of a child with T1DM and CD. It is evaluated with nursing model based on Roy adaptation model. Seventeen years old female patient was admitted to a university hospital with the diagnosis of T1DM + CD. The patient also had anxiety. It was determined that the patient had eating disorder and did not use his insulin regularly. As seen in this case, it is important to provide emotional support in coping with anxiety and fear of unknownness in a new disease.

Key Words: *Type 1 Diabetes Mellitus, Celiac Disease, Roy Adaptation Model, Nursing,* **Adolescent**

Introductıon

Diabetes Mellitus (DM) is a metabolic disease caused by chronic hyperglycemia caused by insulin deficiency in secretion, effect or both. Pathological events varying from autoimmune damage and insulin resistance in β cells cause the development of the disease (1,2). Celiac disease (CD) is an autoimmune enteropathy that usually occurs in childhood. The disease is a chronic disease that affects the small intestine by ingesting gluten-containing foods in predetermined individuals (3–5). Gluten causes mucosal damage in the small intestine (6). This causes malabsorption, one of the most common findings of celiac disease (7). Research published in the last few years has shown that CD prevalence rates have increased in individuals with T1DM (8,9) . The incidence of T1DM is rapidly increasing in children and adolescents, with a 3% annual increase. CD is more common in women than in men with T1DM. The etiologic risk factors for developing antibodies against the small intestine are thought to be different from those in T1DM (10).

Nurses' care for patients using a model brings holistic care. One of the most widely used models in the profession is the Roy Adaptation Model (RAM). This article describes the application of the Roy Adaptation Model in the care management of a patient with T1DM and CD.

Case Report

D.A. is being followed up in a pediatric clinic of a university hospital. When the patient was interviewed, he had been diagnosed with CD for one month and T1DM for about 10 years. For individual disease education, the patient was interviewed once a week, four times in total. Our patient participated in peer meetings twice.

Nursing Care Plan by Roy Adaptation Model

Introductory Information

D.A. is a 17-year-old girl. She is a high school student. She is the eldest of three children in the family.

Physiological Field

D.A. was diagnosed with T1DM at the age of 7 years. CD was diagnosed when the patient was admitted to the clinic with complaints of abdominal pain and diarrhea. The patient had no chronic disease except T1DM and CD. Her body weight was 55 kg and her height was 165 cm.

D.A. has been suffering from celiac disease for about a month. It was determined that the patient had eating disorder and did not use her insulin regularly. She stated that she had been diagnosed with CD just a month ago and that her eating patterns had changed considerably.

Nursing diagnoses in the physiological field: Pain (abdominal pain), less than necessary and irregular nutrition-related nutritional imbalance, diarrhea, risk of ineffective management of health due to lack of knowledge of diet management and restrictions.

Self / Ego Concept

It was found that D.A. Usually came alone when coming to the hospital. She stated that she expressed himself better when she was alone. She stated that her mother had no support after she was diagnosed with CD and did not accept the disease. She also stated that her mother did not pay attention to gluten contamination while preparing the meals they consumed at home. The patient who stated that making bread from wheat flour in the house she lives in is continuous and frequently says her discomfort from this situation. She expressed her happiness to discuss the problems related to CD with the health personnel and to overcome the lack of information.

Nursing diagnoses of Self / Ego Concept: Ineffective management of therapeutic regimen due to lack of family support for disease.

Role Function Area

She stated that she wanted to continue her university life in a different place from the province where his family lived. She wants to learn to cope with the disease by standing on her feet.

Nursing diagnoses related to role function: Anxiety, deterioration in continuity of family processes, risk of loneliness.

Area of Mutual Commitment

Although her father acknowledged her illness, D.A. wants to move away from her mother because she looks more negative. She especially enjoys spending more time with her peers, who call CD food allergies and are aware of it. Since their siblings are smaller than D.A., they are not aware of the diseases.

Nursing diagnoses related to interdependence: Being ready for strengthening in family processes.

Dıscussıon

Nursing Care Process According to Roy Adaptation Model

A. Physiological Adaptation

Patient Statement: The patient, who had diarrhea and abdominal pain for the last month and type 1 diabetes for 10 years, stated that he did not comply with his diet. She also stated that she did not administer her insulin regularly.

Stimulus Diagnosis Focus Stimulants: Hyperglycemia, abdominal pain and diarrhea lasting for about a month

Contextual Stimulus: Not using your medication regularly and not following your diet

Possible Stimulus: Low social support from family, emotional stress
Possible Nursing Diagnosis: Pain (abdominal pain), less than necessary and irregular nutrition-related nutritional imbalance, diarrhea, dietary management, and the risk of ineffective management of health due to lack of knowledge of restrictions.

Nursing Attempts
• They were determined by attracting attention and were distracted.
• Stressed that abdominal pain would decrease when it was adapted to the gluten-free diet, and information was provided on diet compliance.
• Interview with other peers with CD via social media account.
• Nutritional information was provided for both celiac disease and T1DM.
• Informative brochures on CD and T1DM were given.
• Recommended to listen to calming music and read books.
• Meet their peers with the same disease (both T1DM and CD) at information meetings.

Evaluation: Blood glucose monitoring was observed to be within normal limits in the blood glucose registry. She stated that abdominal pain decreased and she felt better.
B. Self Concept Adaptation
Expression of the patient: She stated that she did not help her mother to cope with her illness, did not accept her illness and left her alone.
Focus Stimulus: Chronic disease
Possible Stimulus: Disease complaints affect daily life
Contextual Stimulus: inability to cope with stress
Possible Nursing Diagnosis: Ineffective management of the therapeutic regimen due to a lack of family support for the disease.

Nursing Attempts:
• Expressed her own feelings and thoughts.
• Informed about the complications of the disease.
• She was encouraged to ask questions about her health problem, treatment, prognosis, and care methods.
• Interviews with parents were planned on disease education.
Evaluation: The patient's parents did not participate in the planned interview. D.A's negative thoughts about her mother continue.
C. Role Function Adaptation Format
Primary Role: 17 years old woman
Secondary Role: Being a Student, Child
Statement of the patient: She stated that she felt lonely at home, that her mother did not support her and that she wanted to get away from her family in university life.
Contextual Stimulus: Living Anxiety
Possible Stimulus: Lack of support from mother
Focus Stimulus: Continuation of physical findings related to celiac disease, deterioration of blood sugar regulation related to T1DM.
Possible Nursing Diagnosis: Anxiety, deterioration in continuity of family processes, risk of loneliness.

Nursing Attempts:
• Encouraged to talk to her family about her current situation.
• Establishing a plan for nutrition with family members

• Support systems were evaluated and the most appropriate coping mechanisms were tried to be selected.
Evaluation: She stated that she would get support from her family about the changes caused by her illness.
D. Interdependence Adaptation Format
Patient's Expression: Impaired communication with family members, wanting to study university away from family
Focus Stimulus: Fatigue
Contextual Stimulus: Thinking that her mother did not understand her
Possible Stimulus: Anxiety
Possible Nursing Diagnosis: Being ready for strengthening in family processes.

Nursing Attemtps:
• An environment was created in which she could express her feelings with her family, but her parents did not participate.
• Encouraged to develop appropriate coping methods in family process and social relationships and to communicate with peers
• Training was given on problem solving related to the disease.
Evaluation: She was able to identify situations that interfered with her mother's interaction and said that she listened to calming music and read books about her illness in order to cope with stress in her leisure activities.
Result
Roy's Adaptation Model was used to adapt the patient to a chronic disease if a second chronic disease was added. In this case, care and nursing interventions according to Roy's Adaptation Model of a patient with T1DM and CD were applied. Accordingly, it can be said that the Roy Adaptation Model is suitable for use in patients with T1DM and CD.

References

1. *Katsarou A, Gudbjörnsdottir S, Rawshani A, Dabelea D, Bonifacio E, Anderson BJ, et al. Type 1 diabetes mellitus. Nat Rev Dis Prim. 2017;3(1):17016.*
2. *Polsky S, Ellis SL. Obesity, insulin resistance, and type 1 diabetes mellitus. Curr Opin Endocrinol Diabetes Obes. 2015;22(4):277–82.*
3. *Green PHR, Lebwohl B, Greywoode R. Celiac disease. J Allergy Clin Immunol. 2015;135(5):1099–106.*
4. *Ludvigsson JF, Leffler DA, Bai JC, Biagi F, Fasano A, Green PHR, et al. The Oslo definitions for coeliac disease and related terms. Gut 2013;62(1):43–52.*
5. *Sapone A, Bai JC, Ciacci C, Dolinsek J, Green PH, Hadjivassiliou M, et al. Spectrum of gluten-related disorders: consensus on new nomenclature and classification. BMC Med 2012;10(1):13.*
6. *Kelly CP, Bai JC, Liu E, Leffler DA. Advances in Diagnosis and Management of Celiac Disease. Gastroenterology 2015;148(6):1175–86.*
7. *Di Sabatino A, Corazza GR. Coeliac disease. Lancet 2009;373(9673):1480–93.*
8. *Akirov A, Hirsch-Yechezkel G, Boyko V, Graph-Barel C, Lerner-Geva L, Pinhas-Hamiel O. Celiac in type 1 diabetes children and youth-prevalence, metabolic control and growth parameters. J Metab Investig 2015;1:951.*
9. *Nisticò L, Fagnani C, Coto I, Percopo S, Cotichini R, Limongelli MG, et al. Concordance, disease progression, and heritability of coeliac disease in Italian twins. Gut 2006;55(6):803–8.*
10. *Kaur N, Bhadada SK, Minz RW, Dayal D, Kochhar R. Interplay between Type 1 Diabetes Mellitus and Celiac Disease: Implications in Treatment. Dig Dis 2018;36(6):399–408.*

FT95

Relationship Between Retinopathy Severity And Average Thrombocyte Volume Purpose:

Ayse Demet Sahin[1], Saime Sundus[2], Gunhal Satırtav[3], Husayin Altunhan[1],

[1]Necmettin Erbakan University, Meram Medical Faculty, Pedeiatric.

[2]Selcuk University, Medical Faculty, Pediatrics

[3]Necmettin Erbakan Uviversity, Meram Medical Faculty,

Platelet activation is thought to play a role in the process of angiogenesis in the pathophysiology of retinopathy of prematurity (ROP) (Chu 2010). We aimed to investigate whether mean platelet volume (MPV), which is used to evaluate platelet activation, can be a marker for the diagnosis and treatment of ROP.

METHODS:

In our study, we evaluated infants who underwent ROP examination among infants born at 32 weeks or less and/or 1500 grams or less as well as infants who had more than these values but had a risky neonatal period. We used SAS University Edition 9.4 for statistical analysis. We divided the patients into two groups as those with and without ROP, and in those with ROP group, as requiring treatment and not-requiring treatment. We recorded the patients' identity, maternal characteristics, antenatal/natal/postnatal features, and complications during follow-up, ROP control times, and complete blood count parameters (platelet count, MPV, platelet count/MPV). Primarily, we evaluated the differences of platelet parameters, especially the MPV values, between ROP requiring treatment and ROP not-requiring treatment groups and secondarily, we evaluated the correlation between scanned parameters and ROP development.

RESULTS:

ROP developed in 49 of 144 (34%) patients included in the study. ROP requiring treatment was detected as 51% of the ROP group (n: 25). The gestational age, birth weight, incidence of RDS, surfactant use and oxygen usage time, intraventricular hemorrhage, PDA, neonatal sepsis, erythrocyte transfusion number, NEC, BPD and time to catch birth weight were higher in patients with ROP than those without ROP. However, there was no significant difference in terms of MPV, platelet and platelet/MPV ratio.

Table 1: MPV, platelet values and platelet / MPV ratios of groups with and without ROP

	ROP detected group (n=49)	**ROP non-detected group (n=95)**	**p value**
MPV (f/L) (mean±SD)	9.81±1.76	9.55±1.57	0.38
Platelet (10^3/µL) (mean±SD)	220.9±118.7	229.1±80.9	0.63
Platelet/MPV ratio (mean±SD)	23.2±13.6	24.7±9.8	0.46

Gestational age, invasive ventilation and total oxygen use time, BPD and time to catch birth weight were higher In the ROP requiring treatment group than not-requiring group and the results were statistically significant. No significant difference was found between these groups in terms of MPV, platelet count, platelet / MPV ratio.

Table 2: MPV, platelet values and platelet / MPV ratios of requiring treatment and not-requiring treatment groups

	ROP requiring treatment group (n=24)	ROP not-requiring treatment group (n=25)	p value
MPV (f/L) (mean±SD)	9.54±1.73	10.06±1.79	0.301
Platelet (10^3/µL) (mean±SD)	208.6±117.8	232.8±120.7	0.48
Platelet/MPV ratio (mean±SD)	22.78±14.9	23.74±12.5	0.81

In the ROP requiring treatment group, a statistically significant elevation was detected in terms of the most advanced stage and presence of plus as examination findings.

Table 3: ROP findings of the requiring treatment and not-requiring treatment groups

		ROP requiring treatment group (n=24)	ROP not-requiring treatment group (n=25)	p value
Most advanced stage				
	Stage 1	0(%0)	16(%64)	<0.0001
	Stage 2	13(%54.2)	9(%36)	
	Stage 3	11(%45.8)	0(%0)	
Most advanced zone				
	Zone 1	2(%8.3)	3(%12)	0.17
	Zone 2	20(%83.3)	15(%60)	
	Zone 3	2(%8.3)	7(%28)	
Plus				
	Present	23(%95.8)	1(%4)	<0.001
	Absent	1(%4.2)	24(%96)	
First ROP detection age (days) (mean±SD)		44.21±10.85	43.80±15.47	0.92

DISCUSSION:

Studies investigating parameters associated with retinopathy between treatment-requiring and not-requiring groups in patients with ROP are available in the literature. Kavurt et al. (2012) compared patients with ROP with and without laser; low gestational week, low birth weight, long-term oxygen therapy, presence of BPD, erythrocyte transfusion, intraventricular hemorrhage and apnea were found to be effective risk factors for laser photocoagulation. Zengin et al. (2014) found in their study that gestational age, birth weight, length of hospitalization, RDS, use of surfactant, requirement for invasive and noninvasive ventilation, presence of PDA, NEC, IVC, sepsis and apnea were significantly higher in laser-treated ROP patients than non-laser-treated ROP group. In our study, we found that gestational week, invasive ventilation, total oxygen usage time, BPD and time to catch birth weight were higher in the ROP requiring treatment group than not-requiring group and these results were statistically significant. We compared the parameters of the most advanced stage, the most advanced zone, the presence of plus, and the first age (in days) with ROP and we found a statistically significant increase in the presence of the most advanced stage and plus in the ROP requiring treatment group. These results in our study supported the presence of stage and plus parameters as important parameters in the treatment decision.

The role of platelets in the etiology of vascular diseases has been shown. Especially, it has been reported that MPV values are higher in obstructive vascular diseases compared to normal population (Çil et al. 2012, Arikanoglu et al. 2013). Çekmez et al (2013) measured MPV in cord blood of 272 patients with gestational week <34 and birth weight <1500 gr and this parameter was repeated in the first three days of life and there was no significant difference in both MPV values in patients with and without ROP. In another study (Tao et al. 2015), ROP patients who underwent laser treatment were included in the case group, while those who did not develop ROP and those with stage 1 ROP were included in the control group and the most recent platelet and MPV values were recorded. MPV values were significantly higher in the ROP group requiring laser compared to the control group, but there was no significant difference in platelet and MPV / platelet ratio. There was also shown that 1.94 times increase in ROP risk as MPV value increased. It was concluded that MPV, which is the most common measure of platelet size, is a potential marker of platelet reactivity. In our study, we evaluated MPV and platelet count and platelet / MPV ratios in complete blood count in the first day of life in the with and without ROP groups, but we did not find a statistically significant difference between the groups. We also compared these parameters between ROP requiring treatment and not requiring treatment groups, but we did not find a statistically significant difference. Although we attributed the inadequacy of our study for showing the relationship between MPV and retinopathy to the small number of patients, we concluded that evaluating these parameters not only in the first day of life, but also in intermittent blood counts would help us more to understand the relationship between MPV and the presence and severity of retinopathy.

CONCLUSION:

In conclusion, there are a limited number of studies investigating the relationship between MPV and ROP in the literature. As a result of our study, we can say that MPV is not a marker that can be used in the diagnosis of ROP and measuring the severity of retinopathy. We think that we need more numerous and more comprehensive studies in order to understand the relationship between the presence and severity of retinopathy and MPV which is used to show the activity of platelets which are known to play a role in the etiology of vascular diseases. We also believe that screening of premature infants in neonatal units for retinopathy and early referral of risky infants to a limited number of treatment centers will be of great importance in preventing premature blindness.

References

1- *Arikanoglu A, Yucel Y, Acar A, Cevik MU, Akil E, Varol S, Tasdemir N. The relationship of the mean platelet volume and C-reactive protein levels with mortality in ischemic stroke patients. Eur Rev Med Pharmacol Sci. 2013; 17(13): 1774-1777.*

2- *Cekmez F, Tanju IA, Canpolat FE, Aydinoz S, Aydemir G, Karademir F, Sarici SU. Mean platelet volume in very preterm infants: a predictor of morbidities. Eur Rev Med Pharmacol Sci. 2013; 17(1): 134-137.*

3- *Chu SG, Becker RC, Berger PB, Bhatt DL, Eikelboom JW, Konkle B, et al. Mean platelet volume as a predictor of cardiovascular risk: A systematic review and meta-analysis. Journal of Thrombosis and Haemostasis. 2010; 8(1): 148-156.*

4- *Cil, H, Yavuz C, İslamoğlu Y, Tekbaş EÖ, Demirtaş S, Atılgan ZA, et al. Platelet count and mean platelet volume in patients with in-hospital deep venous thrombosis. Clinical and Applied Thrombosis/Hemostasis. 2012; 18(6): 650-653.*

5- *Kavurt S, Yücel H, Hekimoğlu E, Baş AY, Demirel N, Türkbay D. Prematüre retinopatisi gelişen olgularda risk faktörlerinin değerlendirilmesi. Çocuk Sağlığı ve Hastalıkları Dergisi, 2012; 55(3), 125-131.*

6- *Tao Y, Dong Y, Lu CW, Yang W, Li Q. Relationship between mean platelet volume and retinopathy of prematurity. Graefe's Archive for Clinical and Experimental Ophthalmology. 2015; 253(10): 1791-94.*

7- *Zengin N, Özer EA, Zengin MÖ, Türe G, Sütçüoğlu S, Talay E. Prematüre retinopatisi sıklığı ve risk faktörlerinin değerlendirilmesi. Cocuk Sagligi ve Hastaliklari Dergisi. 2014; 57(2).*

FT96

Çocuk Yoğun Bakım Ünitemizde Takip Edilen Travma Hastalarının Değerlendirilmesi

*Merve MISIRLIOĞLU[*1], Merve SAPMAZ[*2], Ahmet YÖNTEM[*1], Faruk EKİNCİ[*1], Özden ÖZGÜR HOROZ[*1], R. Dinçer YILDIZDAŞ[*1]*

[1] Çukurova Üniversitesi Tıp Fakültesi Çocuk Yoğun Bakım B.D., Adana*

[2] Çukurova Üniversitesi Tıp Fakültesi Çocuk Sağlığı ve Hast. A.B.D., Adana*

GİRİŞ

Travma, çevresel etkenlerden çeşitli enerji transferleri sonucunda insanın doku ve organlarında hasar meydana gelmesidir.[1] Travmalar çocukluk çağının önemli mortalite ve morbidite nedenlerinden birisidir. Fiziksel travma, özellikle bir yaşından büyük çocuklarda en önemli sağlık sorunlarındandır[2]. Riskli travma mekanizmaları, çocuklarda çoklu travmaya neden olarak, ciddi multisistemik komplikasyonların ortaya çıkmasına ve artmış mortalite ile morbiditeye zemin hazırlamaktadır. Komplikasyonların önlenmesi, mortalite ve morbidite sıklığının azaltılması için riskli hastaların saptanıp uygun travma merkezlerinde tedavi edilmeleri önemlidir.[3] Travma nedeniyle oluşan yaralanmalar acil servis başvurularının ve yoğun bakım yatışlarının önde gelen nedenlerindendir. Bu birimlerde görevli klinisyenlerin özellikle multisistemik travma ile başvuran hastalara karşı donanımlı olması, pediatrik travma olgularındaki mortalite ve morbiditenin azaltılması konusunda önemlidir.[4] Çalışmamızda, travma hastalarının çocuk yoğun bakım ünitesinde takibi sırasındaki demografik verilerinin ortaya konması; laboratuvar, radyolojik, klinik bulguları ve çeşitli skorlama sistemlerinin ışığında yoğun bakım yatış süreleri, solunum ve dolaşım desteği gereksinimlerinin bu bulgularla korelasyonu ile prognozdaki yerinin değerlendirilmesi amaçlanmıştır.

GEREÇ VE YÖNTEM

Travma nedeniyle Çukurova Üniversitesi Tıp Fakültesi Hastanesi Çocuk Yoğun Bakım Ünitesinde Temmuz 2018- Haziran 2019 tarihleri arasında yatırılan olgular incelendi. Belirlenen tarihler arasında çalışmaya alınan 49 hastanın; izlemi sırasındaki demografik, laboratuvar, radyolojik, klinik bulguları ve çeşitli skorlama sistemleri prospektif olarak kaydedildi.

Hastaların çocuk yoğun bakım ünitemize başvuru şekli, yoğun bakım ve hastane yatış süreleri, hangi travma mekanizmasına maruz kaldıkları ve sonucunda etkilenen organ sistemleri kaydedildi. Vital bulguları değerlendirebilmek için hastaların yaş gruplarına uygun normal aralıkları belirlendi; solunum desteği alıp almadıkları kaydedildi. Hastalar GKS, PTS, ISS, AIS, PRISM III ve PELOD skorları ile değerlendirildi. İntraabdominal basınç ölçümü[5], EEG inceleme, NIRS ile takipleri yapılarak sonuçları incelendi.

Çalışma için Çukurova Üniversitesi Tıp Fakültesi Girişimsel Olmayan Etik Kurul onamı alındı. Verilerin istatistiksel analizinde IBM SPSS versiyon 20.0 yazılımı kullanıldı. Tanımlayıcı istatistikler; ortalama, medyan, standart sapma, minimum, maksimum değerler olarak gösterildi. İstatistiksel anlamlılık düzeyi olarak $p<0.05$ değeri kabul edilmiştir.

BULGULAR

Çocuk yoğun bakım ünitesine travma nedeniyle çalışma süresince toplam 49 hasta yatışı gerçekleşti. Hastaların en küçüğü 6 aylık, en büyüğü 17 yaşında olup, ortalama yaşları 90,78±59,70 ay idi ve cinsiyete göre dağılımı incelendiğinde 38'i erkek (%77,6), 11'i kızdı (%22,4). Travma etiyolojileri incelendiğinde en sık araç dışı trafik kazasına bağlı yaralanan hastaların mekanik ventilasyon ihtiyacı olduğu görüldü. Mekanik ventilasyon gereksinimi açısından travma mekanizması ve etkilenen

sistemler değerlendirildiğinde anlamlı farklılık bulunmadı. Birden fazla sistemin etkilendiği multiple travmalı hastaların; toplam vaka sayısını aşması sebebiyle p değeri saptanamadı. Mekanik ventilatörde izlenen hastalarda travma mekanizması sıklığı ve etkilenen sistemler Tablo 1'de verilmiştir. Travma etiyolojileri incelendiğinde en sık neden yüksekten düşme saptanmıştı, ancak etiyolojiler arasında mekanik ventilasyon açısından anlamlı farklılık saptanmadı. Kafa travması olan hastalarda kraniyal kemik kırığı ya da beyin parankim yaralanması olmasına göre mekanik ventilasyon ihtiyacında anlamlı farklılık görülmedi.

Çalışma dahilindeki hastalarda kardiyopulmoner resusitasyon (CPR) ihtiyacı olmadı ve bu hasta grubunda exitus görülmedi. Hastalardan 13'ü (%26,5) oda havasında, solunum desteği almadan takip edilirken; 26 hasta (%53,1) rezervuarlı geri solumasız maske ile oksijen desteği aldı. Yaralıların 9'u (%18,4) mekanik ventilatöre bağlandı. Mekanik ventilasyon endikasyonlarına bakıldığında; 5 hasta (%10,2) Glasgow koma skoru düşüklüğü nedeniyle, 2 hasta (%4,1) hemorajik şok nedeniyle, 2 hasta (%4,1) da operasyon sonrası entübe takip edilmişti.

Vital bulgularına göre mekanik ventilasyon ihtiyaçları değerlendirildiğinde yaşına göre bradipneik olan hastaların, normal solunum sayısına sahip ve takipneik hastalara göre mekanik ventilasyon ihtiyacı daha fazla bulundu (p=0,004). Yaş aralığına göre hipotansif olan hastaların %66,7'sinde mekanik ventilasyon ihtiyacı olurken, normotansif ve hipertansif hastaların sırasıyla %12,5 ve %9,1'inde mekanik ventilasyon ihtiyacı oldu; bu durum istatistiksel olarak anlamlı bulundu (p=0.005). Hipotansif olan hastaların %66,7'sinde mekanik ventilasyon ihtiyacı olurken, hipotansif olmayan hastalarda mekanik ventilasyon ihtiyacı %11,6 idi (p=0,001). Hastaların vital bulguları ile operasyon gereksinimi arasındaki ilişki incelendiğinde solunum sayısı, kan basıncı ve vücut ısısı değerleri ile opere olmaları arasında anlamlı bir ilişki saptanmadı. Taşikardik hastaların, normokardik ve bradikardik hastalara göre daha fazla operasyon ihtiyacı olduğu görüldü. Taşikardik hastaların %68'i opere olurken, taşikardisi olmayan grubun %28'i opere oldu. Hastalar pupil anormalliği açısından karşılaştırıldığında, anlamlı bir p değeri saptanmasa da anizokorisi bulunan tüm vakalarda operasyon ihtiyacı görülmesi klinik olarak anlamlı kabul edildi (Tablo 2).

Çocuk yoğun bakım ünitesine kabulünün ilk 24 saatinde enteral beslenmesi sağlanabilen 31 (%63,2) hasta, 24-48 saatler arasında beslenen 14 (%28,6) hasta mevcuttu; ilk enteral beslenme süresi 48 saatin üzerinde olan hasta sayısı ise 4'tü (%8,2). Bu hastaların ilk 48 saatte beslenememe nedeni batın cerrahisi geçirmeleriydi.

Üretral yaralanma şüphesi dışlandıktan sonra 33(%67,3) hastaya, idrar çıkışını izlemek amacıyla üriner kateter yerleştirildi. Bu hastaların İAB ölçümü açısından kontrendikasyonu olmayan 15'ine (%30,6) intraabdominal basınç ölçümü yapıldı. Ölçüm yapılan 7 hastada intraabdominal hipertansiyon saptandı. Bu hastalara nazogastrik dekompresyon ve uygun sıvı yönetimi ile semptomatik tedavi uygulandı; hastaların hiçbirinde cerrahi ihtiyacı olmadı. Bir hastada iliak kemikte fraktür ve üretral hasar olması nedeniyle İAB takibi yapılamadığından dolayı abdominal oksijenizasyonu değerlendirmek amaçlı renal ve mezenterik NIRS takibi yapıldı.

Tüm hastaların 36'sında (%73,5) kafa travması mevcuttu. Kafa travması nedeniyle takip edilen hastaların hepsi kafa içi basınç artışına yönelik hiperosmolar tedavi aldılar. Hiperosmolar tedavi tipi olarak ilk aşamada seçilen ajan hipertonik salindi. Ayrıca 10 hasta (%27,7) hipertonik salin tedavisine ek olarak mannitol tedavisi de almıştı. Dirençli kafa içi basınç artışı olması nedeniyle 1 hastaya (%2) barbitürat tedavisi uygulandı. Kraniyal yaralanması olan 36 hastaya (%73,4) optik sinir kılıf çapı ölçümü yapıldı, 21 hasta (%42,9) NIRS ile takip edildi ve 14 hastaya (%28,5) EEG görüntülemesi yapıldı. EEG görüntüleme yapılan 11 hastaya antiepileptik tedavi verildi. Hastaların 4'ünde muayene bulgusu olarak anizokori saptandı. Bu hastaların tamamı opere oldu.

Hastalar pediatrik travma skorlarına göre sınıflandırılıp, yoğun bakım ve hastanede yatış süreleri karşılaştırıldı ancak istatistiksel olarak anlamlı farklılık saptanmadı (Tablo 3). Hastaların PTS' larına göre ilk enteral beslenme saatleri karşılaştırıldığında, PTS ile beslenme saati arasında istatistiksel olarak anlamlı farklılık saptanmadı. PTS> 8 olan hastaların abdominal travma oranı %33 iken, PTS

≤8 olan hastalarda abdominal travma oranı %20,6 idi. PTS >8 olan hastalarda abdominal travma daha sık olması, bu hastalarda ilk enteral beslenme saatindeki gecikmeyi açıklamaktaydı.

TARTIŞMA

Travmaya bağlı yaralanmalar, çocukluk çağında meydana gelen mortalite, morbidite ve sağlık harcamalarının en önemli nedenlerinden birisidir. Gelişmemiş ve gelişmekte olan ülkelerde 1-4 yaş arasındaki dönemde ölüm nedenleri arasında travma, enfeksiyondan sonra ikinci sırayı almaktayken; yine bu ülkelerde dört yaş sonrası ve gelişmiş ülkelerde de 1-14 yaş arasındaki dönemde ilk sırayı almaktadır [2, 3].

Wohlgemut ve ark. pediatrik travma hastalarının demografik ve coğrafik özelliklerini incelediği çalışmalarında hastaların median yaşı 9.0 yıl (4-12) olarak saptanmıştır[6]. Ülkemizde İzmir bölgesinde yapılan Öztan ve ark. yapmış olduğu çalışmada median yaş 6,0 yıl (2-11) olarak bildirilmiştir[7]. Bizim çalışmamızda hastaların en küçüğü 6 ay, en büyüğü 17 yaşında olup, ortanca yaşları 6,3 yıldır.

Kafa travmaları pediyatrik travmaların en sık görülen şekli olup, travmaya bağlı mortalite ve morbiditenin de en sık nedenidir[8]. Mayer ve ark. kafa travmalarının pediatrik popülasyonda en sık görülen (%78,8) yaralanma şekli olduğunu ortaya koymuştur[9]. Ülkemizde Doğan ve arkadaşlarının yapmış olduğu, acil servise başvuran 0-16 yaş arası 1293 pediatrik travma hastasının incelendiği bir çalışmada en sık yaralanma bölgeleri baş-boyun (%41,9) ve ekstremite (%33,4) olarak saptanmıştır[10]. Bizim çalışmamızda da hastaların %73,5'inde kafa travması mevcuttu. Ekstremite yaralanması (%30,6) ve torakal yaralanma (%26,5) ikinci ve üçüncü en sık yaralanmalardı.

Kafa travması nedeniyle takip edilen çalışmamızdaki hastaların hepsi (%73,5) kafa içi basınç artışına yönelik hiperosmolar tedavi aldılar. Hiperosmolar tedavi tipi olarak ilk aşamada seçilen ajan hipertonik salindi. Ayrıca 10 hasta (%27,7) hipertonik salin tedavisine ek olarak mannitol de almıştı. Çalışmamızda tek başına mannitol tedavisi alan hasta olmadı. Ongun ve ark. travmatik beyin hasarı nedeniyle çocuk yoğun bakım ünitesinde izlenilen hastaların %67'sinin kafa içi basınç artışına yönelik tedavi aldığı, bunların %10,2'sinin yalnızca mannitol tedavisi, % 14,8'inin yalnızca hipertonik salin tedavisi ve geriye kalan hastaların her iki hiperosmolar tedaviyi birlikte aldığı belirtilmiştir[11].

Travmaya bağlı ölümlerin %30-50'si kaza alanında, %30'luk kısmı ise genellikle ilk saatlerde olmak üzere kaza sonrası saatler ve günler içerisinde olmaktadır [12]. Uygun hastaneye hızlı transport, hızlı değerlendirme ve canlandırma ve cerrahi müdahale gerektiren hastaların tanınması ile ölüm oranları azaltılabilir. Ayrıca travma hastalarının acilde ve yoğun bakım ünitesindeki yönetimleri, multidisipliner yaklaşım yöntemleri de mortalite ve morbiditeyi azaltmak için önemlidir. Çalışmamızda izlediğimiz 49 hastadan ölen olmaması muhtemelen ölümlerin kaza anında, acil servise ulaşırken ya da acil serviste olmasından kaynaklanmaktadır. Ayrıca başlangıçta GKS 8'in altında olup takiplerinde ekstübasyonu gerçekleşen 8 hastamız takiplerinin devam edeceği kliniklere sekelsiz olarak devredilmiştir.

Tambay ve ark. ortalama hastane yatış süresi 5,54±6,42 gün ve en uzun yatış 50 gün olarak saptanmışlardır[1]. Bizde ise hastanede yatış süresinin ortalaması 11,8±8,2 gün, en uzun yatış süresi 30 gün iken; yoğun bakım yatış süresinin ortalaması 4,4±2,9 gündü. Üçüncü basamak sağlık kuruluşu olmamız nedeniyle ünitemizde yoğun bakım hizmetlerin daha iyi olması, olası organ yetmezliği, sepsis gibi komplikasyonların erken tanınarak tedavi edilmesi sağ kalımı artırmakta ve hastaların daha uzun süreli tedavi almasını sağlamaktadır. Çalışmamızda takip edilen hastaların; yoğun bakım yatış süresinin ortancası 4 (1-13) gün iken, hastanede yatış süresinin ortancası 8 (2-30) gündü. Ongun ve arkadaşlarının yapmış olduğu çalışmada ise yoğun bakım yatış süresinin ortancası 4 (1-22), hastanede yatış süresinin ortancası 10,5 (1-96) gün olarak saptanmış olup[11], bizim çalışmamızla benzerlik göstermektedir.

Travma nedeniyle çocuk yoğun bakım ünitemizde takip ettiğimiz hastaların %18,4'ünde mekanik ventilasyon ihtiyacı oldu. Mekanik ventilasyon endikasyonlarına bakıldığında; 5 hasta (%10,2) Glasgow koma skoru düşüklüğü nedeniyle, 2 hasta (%4,1) hemorajik şok nedeniyle, 2 hasta (%4,1) da operasyon sonrası entübe takip edilmişti. Daha geniş hasta popülasyonunu içeren çalışmada ise hastaların entübasyon oranı %12,2 olarak saptanmış olup benzer özellikteydi[21]. Hastalarımızın mekanik ventilatörde izlem süresi ortanca 48 saatti. Ongun ve arkadaşları ise, mekanik ventilatörde ortanca izlenme süresi 3 gün olarak bulmuşlardı[11].

Çalışmamızda hastaların %51'ine cerrahi müdahale uygulanmıştı. Tambay ve arkadaşları hastaların %43,3'ünün opere olduğu belirtmişti[1]. Çalışmamızda 18'ine (%36,7) kan transfüzyonu uygulandı. Transfüzyonlar incelendiğinde; hipovolemi ve hipotansiyon nedeniyle 16 hastaya eritrosit süspansiyonu verildiği görüldü. Hastaların 8'ine taze donmuş plazma, 2'sine trombosit süspansiyonu, 2'sine kriyopresipitat verildiği tespit edildi. Anıl ve arkadaşlarının künt yüksek enerjili travma hastalarını değerlendirdikleri çalışmalarında ise hastaların %7'sine kan transfüzyonu uygulanmıştır[13]. Bizim çalışmamızda bu oranın daha yüksek olması penetran yaralanmaların da çalışmaya dahil olması ve bu tür yaralanmaların daha fazla kan transfüzyonu gerektirmesi ile açıklanabilir.

Pediatrik Travma Skoru (PTS), yaralanma ciddiyetini ve yaralanma derecesini doğru bir şekilde değerlendirmek için kullanılmaktadır. Simon ve arkadaşları, yaralanma şiddetini pediatrik travma skorunu kullanarak belirlemiştir. Pediatrik travma skoruna göre; ağır yaralanma 0-5, orta yaralanma 6-8, ve hafif yaralanma 9-12 olarak belirlenmiştir. Hastaların çoğu hafif, % 40 ve % 3,3 hastada ise orta ve ağır dereceli yaralanma olarak kaydedilmiş[14]. Bizim çalışmamızda hastaların % 30,6'sında PTS>8 olup hafif yaralanmaların neden olduğu travma mevcuttu. Geriye kalan % 69,4 hastada PTS≤8 olup ciddi travma mevcuttu. PTS özellikle pediatrik travma hastalarının triyajı için geliştirilmiş bir fizyolojik skorlama sistemi olup, kliniğimiz üçüncü basamak bir merkez olmasından dolayı ciddi travma hastalarının bu sıklıkta görüldüğünü düşünmekteyiz. Narcı ve arkadaşlarının pediatrik hastalarda prognozu öngörmede travma skorlarını değerlendirmek amacıyla yaptıkları çalışmada GKS, AIS, ISS, PTS değerlendirmeye alınmış ve AIS'in prognozu öngörmede en güvenilir travma skoru olduğu saptanmıştır. Yine aynı çalışmada AIS ve ISS, hastanede kalış süresinin; ISS ve PTS'nun yoğun bakım ihtiyacının bağımsız belirleyicileri olduğu saptanmıştır[15]. Anıl ve arkadaşları ise PTS≤ 8 olan hastalarda acil serviste izlenme ve hastanede yatış süresinin daha uzun olduğu görülmektedir[13].Bizim çalışmamızda hastalar PTS'larına göre iki gruba ayrılıp; ciddi travma mevcudiyeti, hastane ve yoğun bakım yatış süresi değerlendirildi. Hastalarımızın %69,4'ünde PTS ≤ 8 olup ciddi travma mevcuttu. Ancak iki grup arasında hastane ve yoğun bakım yatış süreleri arasında istatistiksel olarak anlamlı farklılık saptanmamıştı (p>0,05). Bu durumu çalışma kapsamında değerlendirilen hasta sayımızın az olması ile açıklamaktayız.

SONUÇ

Pediatrik hastalar, yetişkinlerden farklı anatomik ve fizyolojik özellikleri sebebiyle travmaya açıktır; bu nedenle öncelikle travmanın önlenmesi amaçlanmalıdır. Çocuklara bakmakla yükümlü olan ailelerinin eğitimi ve okul, sosyal faaliyetlerini yaptıkları merkezlerde olası travmalara yönelik gerekli önlemler alınmalıdır. Medya ve internet üzerinden yapılacak eğitici yayınlar da etkili bir yol olacaktır ve desteklenmelidir. Buna rağmen gerçekleşebilecek travmalarda ise uygun triyaj ve skorlama sistemleri ile kritik çocuk hastaların belirlenerek uygun tedaviyi yapabilecek merkezlere en kısa sürede ulaştırılıp gerekli müdahalelerin zamanında yapılarak izlenmesi oldukça önemlidir. Bunun sonucunda mortalite ve morbiditenin azaltılması ana hedeftir.

Çalışmamızda pediatrik travma hastalarının vital bulgularının ve travma skorlarının morbidite ve yoğun bakım yatış süresi üzerindeki etkisi belirgin olarak görülmekte olup; uygun hastaların deneyimli merkezlerde tedavi ve izleminin önemi ortaya konmuştur.

Kaynaklar

1- *Tambay G, Satar S, Kozacı N, Açıkalın A. Retrospective analysis of pediatric trauma cases admitted to the emergency medicine department. Journal of Academic Emergency Medicine, 2013; 12(1):8.*
2- *Grinkeviciūte DE, Kevalas R, Saferis V, Matukevicius A, Ragaisis V, Tamasauskas A. Predictive value of scoring system in severe pediatric head injury. Medicina (Kaunas), 2007;43:861-9.*
3- *Bayrakçı B, Tekşam Ö. Çocuklarda Travmaya Genel Yaklaşım. Katkı Pediatri Dergisi, 2009; 31:115-131.*
4- *Osler TM, Vane DW, Tepas JJ, Rogers FB, Shackford SR, Badger GJ. Do pediatric trauma centers have better survival rates than adult trauma centers? An examination of the national pediatric trauma registry. J. Trauma.2001; 50:96-101.*
5- *Horoz OO, Yildizdas D, Sari Y, Unal I, Ekinci F, Petmezci E. The relationship of abdominal perfusion pressure with mortality in critically ill pediatric patients. Journal of Pediatric Surgery, 2019 Sep; 54(9):1731-1735.*
6- *Wohlgemut, JM, Morrison JJ, Apodaca AN, Egan G, Sponseller PD, Driver CP, Jansen JO. Demographic and geographical characteristics of pediatric trauma in Scotland. Journal of Pediatric Surgery, 2013; 48(7):1593-1597.*
7- *Öztan MO, Anıl M, Anıl AB, Yaldız D, Uz İ, Turgut A, et al.. First step toward a better trauma management: Initial results of the Northern Izmir Trauma Registry System for children, Ulus Travma Acil Cerrahi Derg, 2019; 25(1):20 28.*
8- *Melo JR, Di Rocco F, Lemos-Júnior LP, Roujeau T, Thélot B, Sainte- Rose C, et al. Defenestration in children younger than 6 years old: mortality predictors in severe head trauma. Childs Nerv Syst, 2009; 25(9):1077-1083.*
9- *Mayer T, Walker ML, Johnson DG, Matlak ME. Causes of morbidity and mortality in severe pediatric trauma. Jama, 1981; 245(7):719-721.*
10- *Doğan Z, Kukul Güven FM, Cankorkmaz L, Korkmaz I, Coşkun A, Döleş KA. Evaluation of pediatric cases presenting to the emergency department of our hospital because of trauma, Turk Arch Ped, 2011; 46:156-60.*
11- *Ongun EA, Dursun O. Prediction of mortality in pediatric traumatic brain injury: Implementations from a tertiary pediatric intensive care facility. Ulus Travma Acil Cerrahi Derg, 2018; 24:199-206.*
12- *Serinken M, Özen M. Pediyatrik yaş grubunda trafik kazası sonucu oluşan yaralanmalar ve özellikleri. Ulus Travma Acil Cerrahi Derg, 2011; 17(3):243-247.*
13- *Anıl M, Sarıtaş S, Bıcılıoğlu Y, Gökalp G, Kamit Can F, Anıl AB. The Performance of the Pediatric Trauma Score in a Pediatric Emergency Department: A Prospective Study, J Pediatr Emerg Intensive Care Med, 2017; 4:1-7.*
14- *Simon R, Gilyoma JM, Dass RM, et al. Paediatric injuries at Bugando Medical Centre in Northwestern Tanzania: a prospective review of 150 cases, Journal of Trauma Management & Outcomes, 2013; 7:10.*
15- *Narcı A, Solak O, Haktanır T, Ayçiçek A, Demir Y, Ela Y ve ark. The prognostic importance of trauma scoring systems in pediatric patients. Pediatr Surg Int, 2009; 25:25-30.*

TABLOLAR

Tablo 1: Travma mekanizmaları, etkilenen sistem ve mekanik ventilasyon arasındaki ilişki

	Vaka sayısı (n)	Mekanik ventilasyon (n)	p
Travma Mekanizması			
Yüksekten düşme	18	2	
ADTK	17	3	
AİTK	4	1	
Ateşli silah	2	1	
Ası	1	1	
Elektrik çarpması	1	1	
Etkilenen sistem			

Kraniyal Torakal Abdominal Ekstremite	36 13 12 15	8 2 2 3	
Kafa travma tipi Kemik Parankim Kemik + Parankim	 13 11 12	 2 4 2	0.399

ADTK: Araç dışı trafik kazası, AİTK: Araç içi trafik kazası

Tablo 2:Hastaların yoğun bakıma kabulünün ilk 1 saati içerisinde kaydedilen nabız, solunum, kan basıncı, vücut ısısı, pupil bulgularına göre sınıflandırılması;entübasyon ve operasyonla ilişkileri

	Vaka sayısı (n) (%)	Entübasyon (n)(%)	p	Operasyon (n)(%)	p
Nabız Bradikardik Normal Taşikardik	 0 (%0,0) 21 (%42,9) 28 (%57,1)	 3 (%14,2) 6 (%21,4)	 0,52	 6 (%28,6) 19 (%67,9)	 0,01
Solunum Bradipne Normal Takipne	 3 (%6,1) 30 (%61,2) 16(%32,7)	 3 (%100) 5 (%16,6) 1 (%6,2)	 0,004	 2 (%66,7) 14 (%46,7) 9 (%56,2)	 0,70
Tansiyon Hipotansiyon Normotansiyon Hipertansiyon	 6 (%12,2) 32(%65,3) 11 (%22,4)	 4 (66,6) 4 (%12,5) 1 (%9)	 0.005	 6 (%100) 14 (%43,8) 5 (%45,5)	 0,83
Vücut ısısı Hipotermi Normotermi Hipertermi	 2 (%4,1) 40 (%81,8) 7 (% 14,6)	 1 (%50) 6 (%15) 2 (%28,5)	 0,346	 1 (%50,0) 21 (%52,5) 3 (%42,9)	 0,89
Pupil İzokorik Anizokorik	 45 (%91,8) 4 (%8,2)	 7 (%15,5) 2 (%50)	 0,09	 21 (%46,6) 4 (%100,0)	 0,11

Tablo 3: Pediatrik travma skorlarına göre yoğun bakım ve hastanede yatış süresinin karşılaştırılması

	Hastanede yatış süresi (saat)	Yoğun bakım yatış süresi (saat)
PTS >8 (n=15)	10,73 ± 7,13 9 (3-30)	3,80 ± 2,78 3 (1-12)
PTS ≤8 (n=34)	12,26 ± 8,80 8 (2-30)	4,71 ± 2,96 4 (1-13)
P	0,77	0,26

PTS: pediatrik travma skoru

FT97

Clinical Presentation And Prothrombotic Risk Factors İn Neonatal And Childhood Stroke: A Retrospective Study.

Yenidoğan Ve Çocukluk Çağı İnmelerinde Klinik Ve Protrombotik Risk Faktörleri: Bir Retrospektif Araştırma

Pamir Işık, Rukiye Ünsal Saç, İkbal Ok Bozkaya, Vildan Çulha, Abdurrahman Kara, Neşe Yaralı

Department of Pediatric Hematology, Ankara Children's Hematology Oncology Hospital, Ankara, Turkey

ABSTRACT

AIM: Neonatal and childhood stroke has high morbidity and mortality, associates with co-morbid conditions, it is difficult to diagnose and the treatment is uncertain. We aimed to examine epidemiology and long term outcomes of childhood stroke patients, followed our department.

MATERIALS AND METHODS:

A retrospective study of enrolled pediatric stroke patients at a pediatric hematology department of a Children's Hospital. The disease presentations, prothrombotic risk factors, co-morbid conditions, stroke-related death or neurological deficits of the children followed-up with stroke diagnosis were recorded.

RESULTS:

A total of 115 children (min-max: 0-16.8 years, median age of diagnosis: 2 years, 49.6% girls) were included. Paresis or plegia (56.5%), convulsions (43.5%), and cranial nerve palsies (10.4%) were most common presentations. Co-morbid conditions were common (69%); the most common were infections (22.6%) and congenital cardiac diseases (20.8%). In 47.7% of the patients who presented with paresis or plegia, stroke was diagnosed within 30 days after stroke; the rest was diagnosed later. Among the determined prothrombotic risk factors, elevated homocysteine levels were the most common (27%), followed by factor V G1691A mutations (20%), and elevated lipoprotein (a) (19.1%) levels. Neurological sequel rate was 62.5%. Mortality rate was 2.6%.

CONCLUSIONS:

Childhood stroke is associated with a variety of co-morbid conditions and hereditary and acquired prothrombotic risk factors. Stroke in children has a high sequel rate. We think that, delayed diagnosis and treatment in our study group could be the reason for this result.

Key words: *Child, Stroke, Intracranial embolism and thrombosis.*

AMAÇ:

Yenidoğan ve çocukluk çağı inmelerinde, morbidite ve mortalite oranları yüksektir. Komorbid durumlar eşlik etmektedir, tanı koymak zordur ve tedavisi kesinlik kazanmamıştır. Amacımız, ünitemizde takip edilen çocukluk çağı inme hastalarımızda, epidemiyoloji ve uzun dönem takip sonuçlarını araştırmaktır.

MATERYAL VE METOD:

Bir retrospektif araştırmada, bir Çocuk Hastanesinin Pediatrik Hematoloji Bölümündeki pediatrik inme hastaları çalışmaya alındı. İnme nedeniyle başvuran takipli çocukların ilk başvuruda klinik

bulguları, protrombotik riskler, komorbiditeler, inme nedeniyle ölüm ya da nörolojik sekel kaydedildi.

BULGULAR:
Toplam 115 çocuk (min-max: 0-16.8 yıl, median tanı yaşı: 2 yıl, %49.6 kız) çalışmaya alındı. Parezi veya pleji (%56,5), konvülziyon (%43.5), ve kafa çifti tutulumu (%10,4) en sık başvuru bulgularıydı. Komorbid durumlar sık olup (%69), en sık olarak enfeksiyomlar (%22,6) ve konjenital kalp hastalıkları (%20,8) saptandı. Parezi veya pleji ile başvuran hastaların %47,7'sinde inme tanısı 30 gün içinde konabildi, diğer hastalar daha geç dönemde tanı aldı. Saptanan protrombotik risk faktörleri arasında artmış homosistein düzeyi en sık olup (%27), bunu faktör V G1691A mutasyonu (%20), ve artmış lipoprotein (a) (%19,1) düzeyi izlemekteydi. Nörolojik sekel oranı %62,5 bulundu. Mortalite oranı %2,6 idi.

SONUÇ:
Çocukluk çağı inmelerine birçok değişik komorbid durumlar ve herediter ve kazanılmış protrombotik risk faktörleri eşlik etmektedir. Çocuklarda inme yüksek sekel oranına sahiptir. Tanı ve tedavideki gecikmenin bizim çalışmamızda bu sonuca neden olduğunu düşünmekteyiz.
Anahtar Kelimeler: Çocuk, İnme, Kafaiçi emboli ve tromboz

INTRODUCTION
Pediatric stroke is divided into ischemic and hemorrhagic stroke. Ischemic stroke is a focal damage to an area of brain tissue within a vascular territory due to loss of blood flow or oxygenation, and represents 55% of pediatric strokes. It is subdivided into arterial ischemic stroke (AIS), which is due to loss of arterial flow, or venous infarction, which is due to loss of flow in a draining cerebral vein or venous sinus by a clot, called cerebral sinovenous thrombosis (CSVT), leading to an infarcted brain parenchyma (1).
Trombus formation may result from hypercoagulable states. It also develops in response to endothelial damage, such as inflammation or vasculopathy. Thromboembolism, however, occurs when a clot formed elsewhere in the body, such as the heart, in the presence of a venous-to-arterial shunt, travels and becomes lodged in a cerebral artery. Hemorrhagic stroke includes spontaneous hemorrhage within the brain parenchyma or subarachnoid hemorrhage (1).
Incidence of stroke in children are increasing, due to many factors like extensive usage of invasive vascular procedures in critically ill children and their better survival from previously lethal disorders. In recent years, clinicians are more aware of thrombosis in pediatric patients because of the improvement and availability of the sensitive imaging techniques (2-4). The clinical manifestations of childhood stroke can be life-threatening, or cause neurological deficits in approximately 60%, and recurrence (10%-25%) (4). The symptoms and signs are non-specific and this often causes delayed diagnosis or diagnosis can completely be missed. Unavailability of advanced brain imaging techniques at an urgent basis, such as magnetic resonance imaging (MRI) is a reason of delayed diagnosis or therapy (2, 4-6).
The purpose of our study was to determine the clinical presentations, associating prothrombotic risk factors, diseases or conditions, and outcomes of childhood stroke cases, who were followed up at our Hospital's Pediatric Hematology Department.

MATERIALS AND METHODS
After obtaining approval from the Hospital's Ethics Committee (Approval number: 2012 / 025), childhood stroke cases were examined, retrospectively, between 1 January 2010 to 1 January 2015 at the Department of Pediatric Hematology, Ankara Children's Hematology and Oncology Hospital.

The informations were diagnosis age, follow-up period, signs and symptoms at first presentation, associating prothrombotik risk factors, chronic diseases and clinical conditions.

Perinatal stroke means a focal disruption of cerebral blood flow between 20 weeks of fetal life through the 28th postnatal day confirmed by neuroimaging studies. It typically presents acutely in the neonatal period, often with symptomatic seizures. Presumed perinatal stroke, refers to patients who do not present until later in the first year of life, often with an emerging hemiparesis. In these cases, stroke is retrospectively diagnosed by the presence of a chronic infarct on neuroimaging. When pediatric stroke occurs outside of the perinatal period, which is typically defined as anything beyond the first month of life, the term childhood stroke is used (7).

In this study, prothrombotic risk factors were compared according to three different age groups: Group 1: Infants <28 days, group 2: Infants in the first year of life and Group 3: Children beyond the first year at the time of stroke diagnosis. All the cases had been tested for fibrinogen, protein C, protein S, antithrombin, homocysteine, lipoprotein a [Lp (a)], anticardiolipin, antiphospholipid antibodies, factor VIII, IX, XI, factor V G1691A, prothrombin G20210A and methylenetetrahydrofolate reductase (MTHFR) polymorphisms. Comparison of reference ranges for all tested coagulation factors were assessed according to age specific data (8-9). Neuroimaging methods for diagnosis were conventional MRI, diffusion MRI, MRI angiography, and/or MRI venography.

Statistical analysis was performed by using Statistical Packet for Social Sciences version 16.0. Kolmogorov Smirnov test was used for normality of continuous or discontinuous numerical variables. Age distribution of children and follow-up period were summarized with descriptive statistics, expressed as medians (min-max). For categorical data, frequency distributions were compared between groups by chi-square test. A value of $P < 0.05$ was considered statistically significant.

RESULTS

Among 115 cases, 49.6% (n=57) were girls [Median diagnosis age 2 years (min-max=7 days-16.8 years)]. Stroke was arising from arterial system in 44.3% (n=51), venous system in 19.1% (n=22) and in 36.5% (n=42), cause of the infarct was not explained from which system it originated.

Most common clinical presentations were paresis/plegia (56.5%, n=65) and seizures (36.5%, n=42) (Table 1). In newborns, apnea/cyanosis (38.5%) was common (P=0.001).

Infection history was noted in 22.6% (n=26) and a co-morbid condition associated in 68.7% (n=79). Cardiac diseases (26%, n=30) were most common, being more frequent in newborns (46.2%) (p=0.035). Co-morbid conditions are represented in Table 2.

Prothrombotic risk factors are represented in Table 3. In newborns, low antithrombin 3 levels (23.1%) (p=0.017) and higher homocysteine (61.5%) were detected (p=0.015).

In 32 (27.8%) of childhood strokes, intracranial hemorrhages associated to infarcts. Nine of them had CSVT, and in 12 obstruction was detected at cerebral arteries (p>0.05).

Imaging showed that infarcts originated from posterior circulation in eight of the children. The infarcts also originated from both anterior and posterior circulation, basilar artery, bilaterally internal carotid and basilar artery, left vertebral artery and basilar artery. In 94 (81.7%) patients, infarct originated from anterior circulation. In eight patients with CSVT an evidence of an infarct was not observed.

In eight (7%) of the childhood strokes, recurrent attacks occurred. One of the children with recurrence died.

DISCUSSION

In pediatric stroke cases, the diagnosis is often delayed and many are not receiving appropriate treatment. Today, it is adviced to care these patients in pediatric stroke centers. In this study, we

aimed to discover the characteristic clinical findings and prothrombotic risk factors of stroke patients.

The most frequent symptoms at initial diagnosis were plegia, paresis and convulsions (Table 1). Clinical hallmark of pediatric stroke is sudden-onset focal neurologic deficits (1), including hemiparesis, plegia, speech disturbance or convulsions. These are usually attributed to migraine, epilepsy or encephalitis rather than stroke, and this often causes delayed diagnosis (10). Neurological findings vary according to age groups (11, 12). Seizure, including up to 46% of younger children, is seen in 5% of adult strokes (1). Apnea, convulsion, lethargy are mainly noted in neonates (11, 12). In our study also, apnea was mostly observed in neonates. Speech or language problems, sensory and visual disturbance are remarkable in school children (11, 12). In our group, sensory and visual disturbances were more frequent in older children (13%).

Intracranial hemorrhages associated to childhood stroke in 27.8% of our patients, 28% had CSVT. In the literature cerebral hemorrhage development was reported in one third of venous infarcts (13).

In literature, chronic diseases that increase stroke risk in childhood are congenital heart disease (CHD), hematological, vascular and infectious diseases (14, 15), with the prevalence of 71%-100% (10, 11). In our group, chronic diseases and co-morbid conditions associated to majority of childhood stroke. Among these, CHD and infections were most frequent.

Hereditary prothrombotic abnormalities are reported at 20%-50% in AIS and 33%-99% in CSVT, in childhood stroke (16, 17). We determined at least one prothrombotic risk factor in 67%. Elevated homocysteine levels were the most common.

In our study, FV 1691 mutation was identified in 20% of childhood strokes. Akar et al. (18) identified FV1691 GA in 25% of children with cerebral infarcts and stated it as an independent risk factor.

High Lp (a) levels is a risk factor for premature myocardial infarction and stroke in adults (19). In children, there are limited number of studies (17). In our cases, we determined high Lp (a) levels in 19.1%.

Prothrombin G20210A mutation is present in 1%-2% of the healthy population and 5%-6% in venous thrombosis (20, 21). We determined prothrombin G20210A mutation in 5.2% of patients.

Antithrombin deficiencies are reported to have no difference in frequencies, in newborns and older children (17). However, in our study, we determined antithrombin deficiency more frequently in newborns.

In 62.6% of our children, there were neuromotor deficits. In literature, long-term neurologic sequel rates were reported up to 70% in children with stroke (2).

In eight (7%) of our cases, recurrent attacks occurred. Recurrent CSVT and AIS in neonates were reported between 8%-17%, and approximately 3% or, also reported to be up to 19-40% in older children (2).

In this study we observed that newborn and childhood stroke is associating with prothrombotic risks and co-morbid conditions. Cases present with neurological symptoms mainly, but might present with other symptoms. Patients have a sequel lasting lifelong. Therefore, early diagnosis and treatment is very important. However, early diagnosis needs advanced imaging methods to be present in emergency conditions.

We should improve knowledge of us about risk factors that could provide to assess taking necessary precautions in patients at risk for occurrence of stroke. Multicenter studies are necessary to establish the predictors of adverse outcome of death or neurologic deficit. Diagnostic difficulties, uncertainty of most appropriate treatment, high neurological sequel rates and the burden of disease to family and community are issues needed to be resolved.

References

1. Bernson-Leung ME, Rivkin MJ. Stroke in Neonates and Children. Pediatr Rev. 2016;37(11):463-77. PMID: 27803143; doi: 10.1542/pir.2016-0002.
2. Pipe SW, Goldenberg NA. Acquired disorders of hemostasis. In Nathan DG, Orkin SH, Ginsburg D, et al. Nathan and Oski's Hematology of Infancy and Childhood. 7th ed. **Philadelphia:** WB Saunders; 2009. p. 1591-620.
3. deVeber G, Andrew M, Adams C, et al. Cerebral sinovenous thrombosis in children. N Engl J Med. 2001;345(6):417-23. PMID: 11496852; doi: 10.1056/NEJM200108093450604.
4. deVeber G. In pursuit of evidence-based treatments for paediatric stroke: the UK and Chest guidelines. Lancet Neurol. 2005;4(7):432-6. PMID: 15963446; doi: 10.1016/S1474-4422(05)70120-4.
5. Bernard TJ, Goldenberg NA. Pediatric arterial ischemic stroke. Hematol Oncol Clin North Am. 2010:24(1);167-80. PMID: 20113901; doi: 10.1016/j.hoc.2009.11.007.
6. Se´bire G, Tabarki B, Saunders DE, et al. Cerebral venous sinus thrombosis in children: risk factors, presentation, diagnosis and outcome. Brain. 2005;128(Pt 3):477-89. PMID: 15699061; doi: 10.1093/brain/awh412.
7. Felling RJ, Sun LR, Maxwell EC, Goldenberg N, Bernard T. Pediatric arterial ischemic stroke: Epidemiology, risk factors, and management. Blood Cells Mol Dis. 2017;67:23-33. PMID: 28336156; doi: 10.1016/j.bcmd.2017.03.003.
8. Brugnara C. Appendices: Reference Values in Infancy and Childhood. In Nathan DG, Orkin SH, Ginsburg D, et al. Nathan and Oski's Hematology and Oncology of Infancy and Childhood. 7th ed. Philadelphia: WB Saunders; 2009. p. 1769-96.
9. Altuntaş N, Soylu K, Suskan E, Akar N. Homocysteine levels in Turkish children. Turk J Haematol. 2004;21(2):79-82. PMID: 27263843
10. Lopez-Vicente M, Ortega-Gutierrez S, Amlie-Lefond C, Torbey MT. Diagnosis and management of pediatric arterial ischemic stroke. J Stroke Cerebrovasc Dis. 2010;19(3):175-183. PMID: 20434043; doi: 10.1016/j.jstrokecerebrovasdis.2009.03.013.
11. Witmer C, Ichord R. Crossing the blood-343 brain barrier: clinical interactions between neurologists and hematologists in pediatrics-advances in childhood arterial ischemic stroke and cerebral venous thrombosis. Curr Opin Pediatr. 2010;22(1):20-7. PMID: 19996969; doi: 10.1097/MOP.0b013e3283350d94.
12. Gabis LV, Yangala R, Lenn NJ. Time lag to diagnosis of stroke in children. Pediatrics. 2002;110(5):924-8. PMID: 12415031
13. Pongmoragot J, Saposnik G. Intracerebral hemorrhage from cerebral venous thrombosis. Curr Atheroscler Rep. 2012;14(4):382-9. PMID: 22664979; doi: 10.1007/s11883-012-0260-1.
14. deVeber G. Risk factors for childhood stroke: little folks have different strokes! Ann Neurol. 2003;53(2):149-50. PMID: 12557279; doi: 10.1002/ana.10461.
15. Golomb MR, Fullerton HJ, Nowak-Gottl U, Deveber G. Male predominance in childhood ischemic stroke: findings from the international pediatric stroke study. Stroke. 2009;40(1):52-7. PMID: 18787197; doi: 10.1161/STROKEAHA.108.521203.
16. Barnes C, Deveber G. Prothrombotic abnormalities in childhood ischaemic stroke. Thromb Res. 2006;118(1):67-74. PMID: 16039697; doi:10.1016/j.thromres.2005.05.021.
17. Kenet G ,Lütkhoff LK, Albisetti M, et al. Impact of thrombophilia on risk of arterial ischemic stroke or cerebral sinovenous thrombosis in neonates and children: a systematic review and meta-analysis of observational studies. Circulation. 2010;121(16):1838-47. PMID: 20385928; doi: 10.1161/CIRCULATIONAHA.109.913673
18. Akar N, Akar E, Deda G, Sipahi T, Orsal A. FactorV1691 G-A, prothrombin 20210 G-A, and methylenetetrahydrofolate reductase 677 C-T variants in Turkish children with cerebral infarct. J Child Neurol. 1999;14(11):749-51. PMID: 10593555; doi: 10.1177/088307389901401113
19. Rosenson RS, Stein JH, Durrington P, Freeman MW (Ed), Saperia GM (Ed). Lipoprotein(a) and cardiovascular disease. UptoDate. April 29, 2013. Available at: https://www.uptodate.com/contents/lipoprotein-a-and-cardiovascular-disease/print

20. *Poort SR, Rosendaal FR, Reitsma PH, Bertina RM. A common genetic variation in the 3'-untranslated region of the prothrombin gene is associated with elevated plasma prothrombin levels and an increase in venous thrombosis. Blood. 1996;88(10):3698-703. PMID: 8916933*
21. *Cumming AM, Keeney S, Salden A, et al. The prothrombin gene G20210A variant: Prevalence in a UK anticoagulant clinic population. Br J Haematol. 1997;98(2):353-5. PMID: 9266933*

Table 1: Clinical manifestations of childhood stroke

Clinical manifestations	N (%)
Paresis/plegia	65 (56.5)
Seizures	42 (36.5)
Cranial nerve paralysis	12 (10.4)
Loss of consciousness/respiratory-circulatory failure	11 (9.6)
Pseudotumor cerebri	8 (7)
Seizures + fever	8 (7)
Apnea/cyanosis	6 (5.2)
Acute headache	4 (3.5)
Vomiting	3 (2.6)
Ataxia, tremor	3 (2.6)
Speech disturbance	2 (1.7)
Gastroenteritis, vomiting, dehydration	2 (1.7)
Chronic headache	2 (1.7)
Others (Hypertension, blurred vision, vertigo, nystagmus, chest pain)	8 (7)

Table 2: Chronic diseases and other clinical conditions in childhood stroke

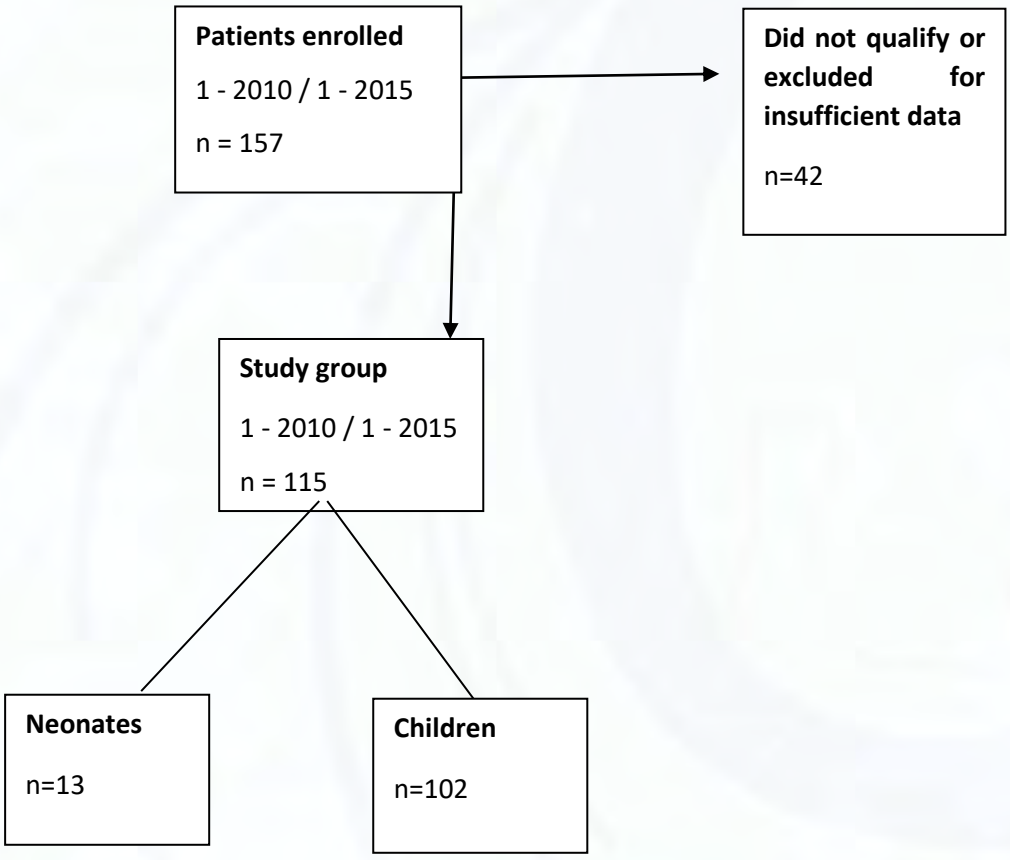
Diagnosis	N (%)
Nephrological (Nephrotic syndrome, familial mediterranean fever, henoch schonlein purpura….)	11 (9.6)
Hematological (Sickle cell anemia, acute lymphoblastic leukemia, congenital dyserithropoetic anemia, thrombocytosis, vitamin B12 deficiency, thalassemia….)	12 (10.4)
Neurological (Neurofibromatosis, epilepsy….)	5 (4.3)
Cardiac (Congenital heart disease, hypertrophic cardiomyopathy…)	30 (26)

Other (Trauma, catheter …)	21 (18.3)
Total	79 (68.7)

Table 3: Prothrombotic risk factors in children childhood stroke

Prothrombotic risk factors	n(%)
Hyperhomocysteinemia	31 (27)
FV G1691A mutation	23 (20)
Increased lipoprotein (a)	22 (19.1)
Antithrombin deficiency	7 (6)
Increased FVIII	7 (6)
Protrombin G20210A	6 (5.2)
Anticardiolipin/Antiphospholipid antibody	3 (2.6)
Protein C deficiency	3 (2.6)
Protein S deficiency	3 (2.6)
Increased fibrinogen	4 (3.5)
Increased FIX	2 (1.7)
Increased FXI	1 (0.9)
No risk factor	38 (33)

Flow-diagram: Enrolment characteristics of pediatric stroke patients that have been regularly followed in Pediatric Hematology Department of the Children's Hospital.



FT98

Evaluation Of Family Centered Care İn The Pediatric Service

Pediatri Servisinde Aile Merkezli Bakımın Değerlendirmesi

** Prof. Dr. Emine GEÇKİL, Arş. Gör. Muradiye Aldem BUDAK, Yüksek lisans Öğr. Walaa AHMED*

Necmettin Erbakan Üniversitesi, Hemşirelik Fakültesi, Çocuk Sağlığı ve Hastalıkları Hemşireliği AD, Konya, Türkiye

ABSTRACT

OBJECTİVE:

Family-centered care is the basic care philosophy in pediatric nursing. Family-centered care has positive contributions to children, family and health care workers. Therefore, it is important to determine the level of application of family-centered care in pediatric clinics. The aim of this study was to evaluate family centered care in pediatric clinics.

METHOD:

This study is descriptive. The parents of the children in general pediatrics, pediatric surgery and pediatric intensive care units in Necmettin Erbakan University Meram Medical Faculty Hospital constituted the universe of the study. The sample size for this study was calculated with the formula $N=t^2*\alpha^2/d^2$ ($N=1.96^2*16.98^2)/1.5^2$) and found 108 people. Data were collected by using the Child and Family Information Form and the Family-Centered Care Assessment Scale (AMRS). Data were collected by the researcher between 22 July-23 September 2019 by face-to-face interviews with parents who volunteered to participate in the study. Obtained data were analyzed by number, percentage, mean, standard deviation, independent samples t test, variance analysis, Tukey HSD test. Significance level was accepted as $p <0.05$.

RESULTS:

The mean score of the parents of the children in pediatric clinics was 92.97±11.74 (4.42±0.55). The mean score of support subscale was 43.19±6.47 (4.31±0.64), the mean score of cooperation sub-dimension was 36.71±4.61 (4.58±0.57), and the mean score of respect sub-dimension was 13.06±2.21 (4.35±0.74). Parents' education, age and so on. characteristics, child's gender, duration of diagnosis, number of hospitalizations and so on. It was observed that such features did not affect the parents FCCAS scores. FCCAS and all subscales of the Clinical parents of children hospitalized for longer than a week mean scores were significantly lower ($p<0.05$). FCCAS total scores and subscale score of the co-working parents was significantly higher ($p<0.05$).

CONCLUSİON:

Based on these results, it can be stated that parents evaluate family centered care provided in pediatric clinics at a good level. The lowest subscale in the evaluation of family-centered care was noted as “support.. In particular, it may be recommended to support and meet the needs of the parents in terms of family-centered care of children with extended hospitalizations.

***Key Words**: Child, Parent, Family-centered care, Child Clinics, Nurse*

Öz

AMAÇ:

Aile merkezli bakım pediatri hemşireliğinde temel bakım felsefesidir. Aile merkezli bakımın çocuk, aile ve sağlık çalışanlarına olumlu katkıları bulunmaktadır. Bu nedenle pediatri kliniklerinde aile merkezli bakımın uygulanma düzeyinin belirlenmesi önemlidir. Bu çalışma pediatri kliniklerinde sunulan aile merkezli bakımının değerlendirilmesi amaçlandı.

YÖNTEM:

Bu çalışma tanımlayıcı tiptedir. Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi Hastanesinde genel pediatri, çocuk cerrahi ve çocuk yoğun bakım servislerinde yatan çocukların ebeveynleri çalışmanın evrenini oluşturdu. Bu çalışma için örnek büyüklüğü $N=t^2*\alpha^2/d^2$ formülü ile ($N=(1.96^2*16.98^2)/1.5^2$) hesaplandı ve 108 kişi bulundu. Verilerin toplanmasında çocuk ve aile bilgi formu ve Aile Merkezli Bakımı Değerlendirme Ölçeği (AMBDÖ) kullanıldı. Veriler araştırmacı tarafından 22 Temmuz-23 Eylül 2019 tarihleri arasında, araştırmaya katılmaya gönüllü ebeveynler ile yüz yüze görüşülerek toplandı. Elde edilen veriler sayı, yüzde, ortalama, standart sapma, bağımsız gruplarda t testi, varyans analizi, Tukey HSD testi ile analiz edildi. Anlamlılık düzeyi $p<0.05$ olarak kabul edildi.

BULGULAR:

Pediatri kliniklerinde yatan çocukların ebeveynlerinin AMBDÖ puan ortalaması 92.97±11.74 (4.42±0.55) olarak bulundu. AMBDÖ'nin destek alt boyutu puan ortalaması 43.19±6.47 (4.31±0.64), işbirliği alt boyut puan ortalaması 36.71±4.61 (4.58±0.57), saygı alt boyut puan ortalaması 13.06±2.21 (4.35±0.74) olduğu saptandı. Ebeveynlerin eğitim, yaş vb. özellikleri, çocuğun cinsiyet, tanı süresi, hastaneye yatış sayısı vb. gibi özelliklerin ebeveynlerin AMBDÖ puanlarını etkilemediği görüldü. Klinikte bir haftadan daha uzun süre yatan çocukların ebeveynlerinin AMBDÖ ve tüm alt boyutları puan ortalamaları düşük bulundu ($p<0.05$). Çalışan ebeveynlerin AMBDÖ toplam puan ve işbirliği alt boyutu puan ortalamaları yüksek bulundu ($p<0.05$).

SONUÇ:

Bu sonuçlar doğrultusunda, ebeveynlerin pediatri kliniklerde sunulan aile merkezli bakımı iyi düzeyde değerlendirdiği ifade edilebilir. Aile merkezli bakımın değerlendirilmesinde en düşük puanlanan alt boyutun "destek" olduğu dikkati çekti. Özellikle hastanede yatış süresi uzayan çocukların ebeveynlerinin aile merkezli bakım yönünden desteklenmesi ve gereksinimlerinin karşılanması önerilebilir.

Anahtar Kelimeler: *Çocuk, Ebeveyn, Aile merkezli bakım, Çocuk Klinikleri, Hemşire*

INTRODUCTION

Family-centered care is the care approach that best meets the needs and expectations of parents and children in a hospital setting (1,2). The care given by family-centered care principles to reduce children's anxiety levels, which improves the fit to the hospital, because it helps children to suffer less, to accelerate the healing process and is reported to contribute to early discharge (3,4,5). In addition, family-centered care improves the knowledge of parents about their children, the development of their skills in caring for the child, having a say in care and adaptation (6). For this reason, effective implementation of family-centered care is important in the care of children and their families. The aim of this study was to evaluate the nursing care offered in pediatric clinics in terms of family centered care.

MATERİALS AND METHODS

This research; descriptive type. The study was held between 22 July and 23 September 2019 with parents of children in general pediatrics, pediatric surgery and pediatric intensive care units in Necmettin Erbakan University Meram Medical Faculty Hospital. $N=t^2*\alpha^2/d^2$ formula was used to determine the sample size if the number of individuals in the universe is unknown. In this study, Taş Arslan et al. (2019) ($N=(1.96^2*16.98^2)/1.5^2$) and 108 people were found. The parents of the children in the pediatric ward of Meram Medical Faculty, the parents who accompany the hospitalized child for at least three days, the parents who volunteered to participate in the study, and the parents who can read and write Turkish were included in the study. Parents with diagnosed mental and mental problems and parents who had children in emergency and neonatal intensive care units were not included in the study. Data were collected using a child and family information form and a family-centered care assessment scale (FCCAS). In the child and family information form, age, marital status, duration of diagnosis, etc. questions. The FCCAS is used to evaluate family-centered care offered by pediatric clinics by parents Taş Arslan et al. (2019). The scale consists of three sub-dimensions and 21 items: "support", "cooperation" and "respect". The scale is 5-point Likert type and the lowest score is 21 and the highest score is 105. The increase in the scale score shows that the level of family-centered care is high. In order to conduct the research, the ethical committee permission was obtained from Meram Medical Faculty Hospital's Ethics Committee for Drug and Non-Medical Device Research, the permission of the institution from the related university hospital and verbal consent was obtained from the parents who participated in the study.

RESULTS

The majority of the parents who participated in the study were individuals aged 31 years and over with the role of the mother. The majority of the children in the study were male and were hospitalized for 1 week (Table 1).

The mean score of the parents of the children in pediatric clinics was 92.97 ± 11.74 (4.42 ± 0.55). Parents' education, age and so on. characteristics, child's gender, duration of diagnosis, number of hospitalizations and so on. It was observed that such features did not affect the parents' AES scores. Parents of children who were hospitalized for more than one week in the clinic were found to have low mean scores on the subscale and all subscales ($p < 0.05$). The mean scores of the total scores of the parents and the subscales of cooperation were found to be high ($p < 0.05$) (Table 1).

Table 1: Comparison of socio-demographic characteristics of parents and children and mean scores of the scale and its sub-dimensions

	n(%)	FCCAS total score Mean±SD	Support total score Mean±SD	Collaboration total score Mean±SD	Respect total score Mean±SD
Total		92.97±11.74 (4.42±0.55)	43.19±6.47 (4.31±0.64)	36.71±4.61 (4.58±0.57)	13.06±2.21 (4.35±0.74)
Parents of the child					
Mother	99(91.7)	92.70±12.10	43.06±6.60	36.61±4.72	13.03±2.29
Others	9(8.3)	95.88±6.29	44.66±4.89	37.77±3.11	13.44±1.66
t */p		-1.312/.210	-.710/.479	-.721/.472	-.527/.599
Parent's age					
18-30 age	49(45.4)	91.91±11.46	42.38±6.51	36.61±4.14	12.91±2.26
31 years and older	59(54.6	93.84±12.0	43.86±6.43	36.79±5.00	13.18±2.24

	)	0			
t */p		-.849/.398	-1.181/.240	-.206/.837	-.615/.540
Parent's working status					
Working[a]	10(9.3)	97.90±5.66	45.20±3.96	38.70±1.56	14.00±1.76
Not working[b]	98(90.7)	92.46±12.10	42.98±6.66	36.51±4.77	12.96±2.27
t */p		2.504/.022 a>b	1.028/.306	3.166/.003 a>b	1.387/.168
Gender of the child					
Male	63(58.3)	93,96±11,36	43,85±6,04	37,03±4,69	13,07±2,22
Female	45(41.7)	91,57±12,24	42,26±7,00	36,26±4,50	13,04±2,30
t */p		1.043/.299	1.261/.210	.848/.398	.079/.937
Week of hospitalization					
1 week[a]	63(58.3)	96.46±10.37	45.17±5.89	37.80±3.76	13.47±2.00
More than 1 week[b]	45(41.7)	88.08±11.91	40.42±6.30	35.17±5.25	12.48±2.45
t */p		3,885/.000 a>b	4.014/.000 a>b	3.032/.003 a>b	2.295/.024 a>b

DISCUSSION

In this study, family centered care was evaluated according to the opinions of 108 inpatients in pediatric clinics. The mean score of the parents of the children in pediatric clinics was 92.97±11.74 (4.42±0.55). This result shows that family-centered care in pediatric clinics is at the desired level. In one study, it was stated that 75.4% of the nurses had knowledge about family-centered care and the application of family-centered care in the clinic was 52.8% (7). In the study of Tosun and Güdücü Tüfekci (2015) it was stated that family-centered care was not at the desired level (8).

In our study, it was found that the mean subscale score of the co-operation was 36.71±4.61, the mean score of respect sub-dimension was 13.06±2.21, and the mean score of support subscale was 43.19±6.47. According to this result, the highest mean score is in cooperation and the lowest score is in support subscale. In the study of Aksu and Yiğit (2019), it was stated that the average score of the nurses' family centered care questionnaire was 64.3±7.7. The highest mean score (28.8±3.9) was from the cooperation subgroup and the lowest mean score (16.1±2.4) was in the support subscale (9). Parents of children who were hospitalized for more than one week in the clinic were found to have low mean scores on all of the sub-dimensions of the scale. This situation stems from the fact that the hospital stay for a long time causes further family, social, physical and psychological abuse.

RESULT

In the study conducted to evaluate family centered care practices in pediatric clinics, it was found that family centered care practices were at the desired level. In the evaluation of family-centered care, the highest cooperation and the lowest support subscale are scored.

References

1- *Aykanat B, Gözen D. Çocuk sağlığı hemşireliğinde aile merkezli bakım yaklaşımı. Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi. 2014; 3(1): 683-695*

2- *Aldem M, Geçkil E. Pediatri hemşireliğinde aile merkezli bakım kavramı ve ilkeleri. Geçkil E, editör. Pediatri Hemşireliğinde Aile Merkezli Bakım. 1. Baskı. Ankara: Türkiye Klinikleri; 2019. p.1-4.*

3- *Dunst CJ, Trivette CM, Hamby DW. Meta-analysis of family-centered help giving practices research. Ment Retard Dev Disabil Res Rev. 2007; 13(4): 370–378.*
4- *Törüner E, Büyükgönenç L. Çocuk Sağlığı Hemşireliği: Çocuk Sağlığı Temel Hemşirelik Yaklaşımları. Edir: Törüner E, Büyükgönenç L. Gökçe Ofset, Ankara-2011. ss: 172-182.*
5- *Öztürk C, Ayar D. Pediatri hemşireliğinde aile merkezli bakım. Dokuz Eylül Üniversitesi Hemşirelik Fakültesi Elektronik Dergisi. 2014; 7(4): 315-320.*
6- *Mikkelsen G, Frederiksen K. Familycentred care of children in hospital - a concept analysis. Journal of Advanced Nursing. 2011; 67(5): 1152-1162.*
7- *Kucuk Alemdar D, Kardas Ozdemir F, Polat S. Opinions of nurses working in NICU about family centered care. Medicine Science International Medical Journal. 2017; doi: 10.5455/medscience.2017.06.8697.*
8- *Tosun A, Güdücü Tüfekci F. Çocuk kliniklerinde aile merkezli bakım uygulamalarının incelenmesi. Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi. 2015; 18(2): 131-139.*
9- *Aksu D, Yiğit R. Çocuk kliniklerinde çalışan hemşirelerin liderlik özellikleri ve aile merkezli bakım arasındaki ilişkinin incelenmesi. Adnan Menderes Üniversitesi Sağlık Bilimleri Fakültesi Dergisi. 2019; 3(2): 98-110.*

FT99

Doğum Sonrası İlk 6 Ay Sadece Anne Sütü Verme Ve Emzirme Öz-Yeterlik İlişkisi: Longitudinal Çalışma

The Relationship Between Exclusive Breastfeeding And Breastfeeding Self-Efficacy İn The First 6 Months Postpartum: Longitudinal Study

Fatma TAŞ ARSLAN Sevinç AKKOYUN***

**Selçuk Üniversitesi Hemşirelik Fakültesi, Çocuk Sağlığı ve Hastalıkları Hemşireliği ABD, Konya, Türkiye*

***Konya Ereğli Devlet Hastanesi, Konya, Türkiye*

Amaç:
Bebeğin sadece anne sütü alması oral rehidrasyon çözeltisi, vitamin, mineral ve ilaç damla/şurupları haricinde su bile dahil başka hiçbir sıvı veya katı verilmemesidir. Bu çalışmanın amacı sadece anne sütü verme ile emzirme öz-yeterlilik düzeyinin ilişkisini araştırmaktır.
Yöntem: Araştırmada prospektif, longitudinal ve karşılaştırmalı bir tasarım kullanıldı. Çalışma Şubat-Mayıs 2018 arasında bir kamu hastanesinin çocuk polikliniklerine başvuran 128 ile yürütüldü. 1. Haftada, 128; 1. ayda, 118; 2. ayda, 113; 3.ayda, 70; 4. ayda, 69; 5.ayda, 68; 6. ayda, 51 anneye ulaşıldı. Veriler anne-bebek bilgi formu ve Emzirme Öz-yeterlik Ölçeği (EÖYÖ) ile toplandı. Veriler sayı, yüzde, ortalama ve standart sapma olarak tanımlandı. Ayrıca verilerin analizinde t testi ve Mann Whitney U testi analizi kullanıldı.
Bulgular: Çalışmaya katılan annelerin yaş ortalamalarının 28,39±5,70, ortalama 1,94±0,95 çocuğa sahip olduğu, %53,9'ünün ilkokul veya ortaokul mezunu, %65,6'sının çalışmadığı, %61,7'sinin gelir durumunun iyi olduğu, %78,9'unun gebeliğinin planlı olmadığı, %57,8'inin sezeryan yöntemi ile doğum yaptığıı %60,2'sinin emzirme deneyiminin olmadığı, %78,9'unun bebeğini ilk 30 dk içinde emzirdiği ve günlük emzirme süresi ise 8,29±1,55 bulunmuştur. Bebeklerin %53,9'unun erkek olduğu ve ortalama 38,03±1,06 gestasyon haftasında doğduğu bulunmuştur. Annelerin sadece anne sütü verme oranları 1.haftada %54,7, 1.ayda %55,1, 2.ayda %57,5, 3.ayda %62,9, 4.ayda %65,2, 5.ayda %60,3, 6.ayda %52,9 ve ilk 6 ay sadece anne sütü verme oranı ise %57,9'dur. Annelerin EÖYÖ puanları ise 1.hafta 52.26±8.07, 1.ay 53,75±6,27, 2.ay 56,99±4,53, 3.ay 60,17±4,29, 4.ay 62,73±3,45, 5.ay 57,75±6,58, 6.ay 50,68±7,09 ve ilk 6 ay ortalaması ise 55,95±7,10'dur. Sadece anne sütü veren annelerin EÖYÖ puanları 1.ay, 2.ay, 3.ay, 4.ay, 5.ayda ve 6.ayda yüksek ve anlamlı olarak bulundu ($p<0,05$).
Sonuç: Annelerin anne sütü verme oranları ile EÖYÖ puanlarının zamana göre değişimi birbirine paralel şekilde değişmektedir. 1.ay, 2.ay, 3.ay, 4.ay, 5.ayda ve 6.ayda sadece anne sütü veren annelerin EÖYÖ puanlarının yüksek ve anlamlı olduğu bulunmuştur.
Anahtar kelimeler: *emzirme öz-yeterlilik, longitudinal, sadece anne sütü*

Abstract
Aim:
Exclusive breastfeeding is defined as feeding infants only breast milk, be it directly from breast or expressed, except drops or syrups consisting of vitamins, mineral supplements or medicine. The aim of this study was to investigate the relationship between exclusive breastfeeding and breastfeeding self-efficacy.

Method:
A prospective, longitudinal, and comparative design was used in the study. The study was conducted between February and May 2018 with 128 patients who applied to the children's polyclinics of a public hospital. Week 1th 128; 1th month 118; 2th months 113; 3th month 70; 4th months 69; 5th month 68; 6th months 51 mothers were reached. Data were collected using mother-infant information form and Breastfeeding Self-Efficacy Scale (BSES-SF). Data were defined as number, percentage, mean and standard deviation. In addition, t test and Mann Whitney U test were used for data analysis.

Results:
Mothers who participated in the study the average age was 28.39±5.70, average 1.94±0.95 children, 53.9% primary or secondary school graduates, 65.6% did not work, 61.7% of the income status is good 78.2% had no pregnancy planned, 57.8% delivered by caesarean section, 60.2% had no breastfeeding experience, 78.9% had breastfeeded their baby in the first 30 minutes and the duration of daily breastfeeding 8.29±1.55 were found. It was found that 53.9% of the babies were male and were born at the mean gestation week of 38.03±1.06. Exclusive breastfeeding of rates 54.7% in the 1th week, 55.1% in the 1th month, 57.5% in 2th month, 62.9% in the 3th month, 65.2% in the 4th month,% 65 in the 5th month 60.3%, 52.9% in the 6th month and 57.9% in the first 6 months of exlusive breastfeeding. BSES-SF scores of mothers 1th week 52.26±8.07, 1th month 53.75±6.27, 2th month 56.99±4.53, 3th month 60.17±4.29, 4th month 62.73±3.45, 5th month 57.75±6.58, 6th month 50.68±7.09 and the average of the first 6 months is 55.95±7.10. Exclusive breastfeeding were significantly higher in the 1th month, 2th month, 3th month, 4th month, 5th month and 6th month ($p<0.05$).

Conclusion:
1th month, 2th month, 3th month, 4th month, 5th month and 6th month ıt was found that BSES-SF scores of the exclusive breastfeeding mothers were high and significant.

Key words: *breastfeeding self-efficacy, exclusive breastfeeding, longitudinal*

Introduction

Breast milk is the first natural food for the babies and provides all the energy and nutrients the infant needs during the first months of life (1). Breastfeeding provides infant and mother numerous benefits in both short and long term (2,3,4). Breast milk is best provided by breastfeeding. The benefits of breast milk and breastfeeding also affect maternal and community health (5,6). Over the past years, evidence on the health advantages of breastfeeding and recommendations for administration continued to increase (1).

Exclusive breastfeeding (EBF) means that the newborn infant is fed only breast milk. no other liquids (not even water) or solids are given, with the exception of oral rehydration salt solution, vitamins, mineral supplements or medicines. WHO and UNICEF recommend that breastfeeding begin within the first hour after birth, only breastfeeding during the first six months, and that breastfeeding should continue for two years or longer with age-appropriate complementary nutrition starting from the sixth month (7,8). Until the first 6 months, EBF is among the most important public health recommendations for improving the health of children around the world (9). Breastfeeding has many benefits such as strengthening the immune system, reducing morbidity related to infectious diseases, improving bone density, providing mental development and reducing the risk of overweight and obesity in adulthood (10).

Starting and continuing breastfeeding, breast milk in the first month is still not at the desired level in the world and in our country. In the world, only 40% of infants younger than 6 months are fed with

breast milk (1). Therefore, one of the strategies of Sustainable Development Goals is to increase the exclusive breastfeeding rate to 50% in children under the age of five (11). Breastfeeding is preferred in our country and supported by the environment, however, exclusive breastfeeding is not at the desired level (12). 57.9% of babies in 0-2 months period, 35.4% in 4-5 months, 4-5. 9.5% receive only EBF per month (13). Turkey Health Statistics feeding rate according to the 2016 report by the mothers milk; It is observed that 30.8% of babies between 0-6 months are fed with breast milk and this rate is quite low (14).

There are effective factors for the initiation of breastfeeding after birth and the continuation of the first six months. One of these is mothers' perception of breastfeeding self-efficacy. In studies, it was found that breastfeeding self-efficacy perception was effective on breastfeeding behavior (15,16,17,18,19). The perception of breastfeeding self-efficacy is defined as ‘‘self-efficacy that the mother feels about breastfeeding” (20). The mother's willingness to breastfeeding may be an important factor in increasing breastfeeding success. Breastfeeding success and breastfeeding self-efficacy perception are reported to have a positive relationship with each other (21).

Promoting and supporting exclusive breastfeeding is very important in this context. The reasons such as lack of knowledge of mothers about breast milk and breastfeeding, insufficient personnel providing education in health institutions, and lack of follow-up of breastfeeding in health institutions reduce the number of infants receiving breast milk. On the other hand, there may be a relationship between breastfeeding self-efficacy perception and exclusive breastfeeding. The feature of this relationship may arise in longitudinal follow-up studies. What is the change in the perception of breastfeeding self-efficacy of a breastfeeding mother in the first six months, and how does this affect the exclusive breastfeeding situations? Evaluating this result may be an important clue for professionals working in this field. Where breastfeeding and exclusive breastfeeding change and longitudinal relationship is important in terms of providing opportunity for intervention studies.

Aim

The aim of this study was to investigate the relationship between EBF and breastfeeding self-efficacy level in the first six months.

Research Questions

1) How does EBF rates change over time?
2) How does the level of breastfeeding self-efficacy change over time?
3) How does the level of breastfeeding self-efficacy relate to EBF over time?

Method

Design

A prospective, longitudinal, and comparative design was used in the study.

Setting

We conducted the study in in the pediatric outpatient clinics of a public hospital in a province located in the inner regions of Turkey from February through August 2018.

Samples

For the primary endpoint of the study, Breastfeeding Self-Efficacy variable was statistically significant than the value of 56.19, which was the result of a previous study in our country, in order to demonstrate a two-unit difference in the patient group, 117 mothers with 80% power and 5% type 1 error level were planned to be included in the study, assuming that the standard deviation would be approximately 8.62 as given in the same literature. 128 mothers were included in both groups considering the 10% loss that may occur during the evaluations.

Participation criteria; The mother is 18 years of age and older, the lack of a chronic disease that prevents the breastfeeding, birth is the only and healthy infant. The baby is born 37 weeks and over, having been born over 2500 gr,, there is no situation that will affect oral nutrition.
Mothers of infants with premature, congenital anomalies were excluded from the study.

Measurement

Data were collected by mother-infant information form and BSES-SF. The mother-infant information form consists of 4 episode and was prepared by the researchers in accordance with the literature. It consists of 12 questions: socio-demographic characteristics (4 questions), fertility characteristics (3 questions), breastfeeding characteristics (2 questions), and infant characteristics (3 questions). Data were collected from the mothers in the breastfeeding room in the pediatric clinic.

Breastfeeding Self-Efficacy Scale–Short Form (BSES-SF)

BSES, a 33-item scale, was developed by Dennis and Faux (1999) in 1999 (16). Later, Dennis (2003) generated the short form of the scale with 14 items (23). Turkish validity of the scale was undertaken by Aluş Tokat et al.,. BSES short form is a Likert type scale and all items are positive. Dennis suggests using the short form since it is easier to implement, and it provides accurate assessment regarding breastfeeding self-efficacy. The minimum score that can be obtained from the scale is 14 and the maximum score is 70. Higher scores point to higher breastfeeding self-efficacy. The Cronbach alpha coefficient of the original scale was found to be 0.94 and the Cronbach alpha coefficient of the study conducted by Aluş Tokat et al., (2010) was found to be 0.86 (24).

Data Collection

Appropriate mothers who had given birth were contacted to the pediatric policlinic when they brought their infant to routine control in the first week. Information was given about the study and signed consent was obtained from the mothers who agreed to participate in the study and the mother-infant information form and BSES-SF were completed. Then, BSES-SF was filled and exclusive breastfeeding status was questioned to the same mothers who came to 1th month, 2th month, 3th month, 4th month, 5th month and 6th month controls. Week 1th 128; 1th month 118; 2th months 113; 3th month 70; 4th months 69; 5th month 68; 6th months 51 mothers were reached.

Data Analysis

The Statistical Package for the Social Sciences (SPSS) version 22 was used to analyze the data. Data were collected using mother-infant information form and Breastfeeding Self-Efficacy Scale (BSES-SF). Data were defined as number, percentage, mean and standard deviation. In addition, t test and Mann Whitney U test were used for data analysis. Level of significance was accepted as $p < 0.05$.

Ethical Considerations

Ethical permission for the study was obtained from a University's Non-invasive Clinical Research Ethics Committee by the decision no. 2017/61. Written permission was obtained from the relevant institution where the research was carried out. The purpose of the study was explained to participating patients who signed informed consent forms.

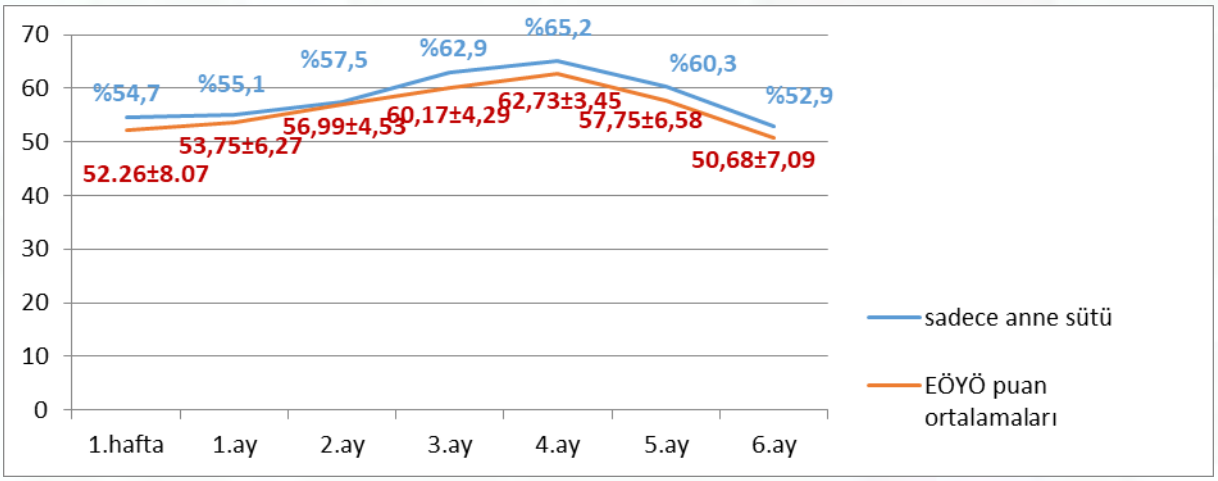
Results

Mothers who participated in the study the average age was 28.39±5.70, average 1.94±0.95 children, 53.9% primary or secondary school graduates, 65.6% did not work, 61.7% of the income status is good 78.2% had no pregnancy planned, 57.8% delivered by caesarean section, 60.2% had no breastfeeding experience, 78.9% had breastfeeded their baby in the first 30 minutes and the duration of daily breastfeeding 8.29±1.55 were found. It was found that 53.9% of the babies were male and were born at the mean gestation week of 38.03±1.06 (Table 1).

Table 1. The Mothers' and the infants' characteristics (N=128)

Variables	N	%
Educational status		
Primary and Secondary school	69	53,9
High school and University	59	46,1
Employment status		
Employed	44	34,4
Unemployed	84	65,6
Income status		
High	79	61,7
Middle	49	38,3
Planned status of pregnancy		
Yes	27	21,1
No	101	78,9
Mode of delivery		
Vaginal	54	42,2
Caesarean section	74	57,8
Breastfeeding experience		
Yes	77	60,2
No	51	39,8
First time to breastfeed your baby after birth		
Within the first 30 min	101	78,9
Within 1-2 hours	27	21,1
Gender of Baby		
Famale	59	46,1
Male	69	53,9
	Mean	**SS**
Age	28,39	5,70
Number of children	1,94	0,95
Gestation week	38,03	1,06
Dairy breastfeeding time (hour)	8,29	1,55

EBF of rates 54.7% in the 1th week, 55.1% in the 1th month, 57.5% in 2th month, 62.9% in the 3th month, 65.2% in the 4th month,% 65 in the 5th month 60.3%, 52.9% in the 6th month and 57.9% in the first 6 months of exlusive breastfeeding. BSES-SF scores of mothers 1th week 52.26±8.07, 1th month 53.75±6.27, 2th month 56.99±4.53, 3th month 60.17±4.29, 4th month 62.73±3.45, 5th month 57.75±6.58, 6th month 50.68±7.09 and the average of the first 6 months is 55.95±7.10 (Graph 1).



Graph 1. EBF rates and BSES-SF mean scores by groups

Only EBF mothers' scores of the 1th month (55.27 ± 6.46), 2th month (57.90 ± 4.68), 3th month (61.43 ± 4.53), 4th month (63, 31 ± 3,15), 5th months (58,00 ± 4,78) and 6th months (52,62 ± 7,62) were found to be high and significant (p <0.05) (Table 2).

Table 2. Variance of BSES-SF mean scores over time according to groups with and without EBF

Exclusive breastfeeding for six months postpartum						
		N	**Yes Mean ±SD**	**n**	**No Mean ±SD**	**Test Value/p**
BSES-SF	1th week	70	51,77±8,49	58	52,86±7,55	t=-1,840 p=0,207
	1. mounth	65	55,27±6,46	53	51,88±5,53	Z=1.115,500 **p=0,001**
	2. mounth	65	57,90±4,68	48	55,77±3,81	Z=1,029,500 **p=0,002**
	3. mounth	44	61,43±4,53	26	58,03±2,82	Z=316,500 **p=0,002**
	4. mounth	45	63,31±3,15	24	61,72±3,78	Z=229,500 **p<0,001**
	5. mounth	41	58,00±4,78	27	57,37±8,72	Z=349,500 **P=0,009**
	6. mounth	27	52,62±7,62	24	48,50±5,86	Z=-199,500 **p=0,018**

SD: Standard deviation t: t test, Z: Mann Whitney U test

Conclusion

In the first 6 months after birth, EBF is supported and desirable throughout the world. Although many factors are effective in maintaining EBF and its continuity, breastfeeding self-efficacy perception is the most effective factor. Other factors affecting mothers' breastfeeding self-efficacy levels should be identified and strategies to increase breastfeeding self-efficacy should be supported. EBF behavior should also be supported. In this respect health institutions are of great importance. It will be beneficial to follow the breastfeeding after the birth and to repeat the trainings given to the mothers.

References

1- *WHO [homepage on the Internet]. Breastfeeding [cited 20 June 2018]. Available from: https://www.who.int/news-room/facts-in-pictures/detail/breastfeeding.*
2- *Horta B, Bahl R, Martines J, Victora C. Evidence on the long term effects of breastfeeding: systematic reviews and meta-analysis. Geneva: World Health Organisation; 2007.*
3- *Ip S, Chung M, Raman G, et al. Breastfeeding and maternal and infant health outcomes in developed countries. Evid Rep Technol Assess 2007;153:1-186.*
4- *Kramer MS, Kakuma R. Optimal duration of exclusive breastfeeding. Cochrane Database Syst Rev; 2012;8.*
5- *Coşkun T. Anne Sütü İle Beslenmenin Yararları. Katkı Pediatri Dergisi 2003;25(2):199-200.*
6- *Kurtuluş YE, Tezcan S. Türkiye Nüfus ve Sağlık Araştırması, Bebeklerin Beslenme Alışkanlıkları, Çocukların ve Annelerin Beslenme Durumu. 2003.*
7- *UNICEF [homepage on the Internet]. Breastfeeding [cited 20 June 2018]. Available from: https://www.unicef.org/nutrition/index_24824.html.*
8- *WHO [homepage on the Internet]. Exclusive breastfeeding for optimal growth, development and health of infants [cited 20 June 2018]. Available from: https://www.who.int/elena/titles/exclusive_breastfeeding/en/.*
9- *Saffari M, Pakpour A H, Chen H. Factors influencing exclusive breastfeeding among Iranian mothers: A longitudinal population-based study. Health Promotion Perspectives;2017,7(1):34-41.*
10- *Kühn T, Kroke A, Remer T, Schönau E, Buyken AE, 2014. Is breastfeeding related to bone properties? A longitudinal analysis of associations between breastfeeding duration and pQCT parameters in children and adolescents. Maternal and Child Nutrition 2014;10,642-649.*
11- *WHO [homepage on the Internet]. World Health Organization. Health in 2015 from Millennium Development Goals to Sustainable Development Goals. [cited 20 June 2018]. Available from: http://www.who.int/gho/publications/mdgs-sdgs/en/.*
12- *Çavuşoğlu H. Cocuk Sağlığı Hemşireliği. Sistem Ofset:Ankara; 2013.*
13- *TNSA 2013 [homepage on the Internet]. [cited 20 June 2018]. Available from: http://www.hips.hacettepe.edu.tr/TNSA2013_sonuclar_sunum_2122014.pdf.*
14- *Sağlık İstatistikleri Yıllığı [homepage on the Internet]. Sağlık İstatistikleri Yıllığı 2016 [cited 20 June 2018]. Available from: https://dosyasb.saglik.gov.tr/Eklenti/13183,sy2016turkcepdf.pdf?0.*
15- *O'Campo P, Faden RR, Gielen AC, Wang MC. Prenatal factors associated with breastfeeding duration: recommendations for prenatal interventions. Birth 1992;19:195-201.*
16- *Dennis CL, Faux S. Development and psychometric testing of the Breastfeeding Self-Efficacy Scale. Res Nurs Health 1999;22,399-409.*
17- *Blyth R, Creedy D, Dennis CL. Effect of maternal confidence on breastfeeding duration: an application of breastfeeding self-efficacy theory. Birth 2002;29,278-284.*
18- *Meedya S, Fahy K, Kable A. Factors that positively influence breastfeeding duration to 6 months: A literature review. Women and Birth 2010;23,135-145.*
19- *Chan Man Y, Ip Wan Y, Choi Kai C. The effect of a self-efficacy-based educational programme on maternal breast feeding self-efficacy, breast feeding duration and exclusive. breast feeding rates: A longitudinal study. Midwifery 2016;36,92-98.*
20- *Bandura A. Regulation of cognitive processes through perceived self-efficacy. Developmental Psychology 1989;5(5):729-735.*
21- *Yenal K, Aluş Tokat M, Durgun Ozan Y, Çeçe Ö, Bakılan Abalın F. Annelerin emzirme öz-yeterlilik algıları ile emzirme başarıları arasındaki ilişkinin incelenmesi. Hemşirelikte eğitim ve araştırma dergisi 2013;10(2)14-9.*
22- *Gerçek E, Sarıkaya Karabudak S, Ardıç Çelik N, Saruhan, A. The relationship between breastfeeding self-efficacy and LATCH scores and affecting factors. Journal of Clinical Nursing 2016;26,994-1004.*
23- *Dennis CL. The Breastfeeding Self-efficacy Scale: Psycometric Assesment of The Short Form. Journal of Obstetric,Gynecologic and Neonatal Nursing 2003;32(6):734-44.*
24- *Aluş Tokat M, Okumuş H, Dennis CL. Translation and psychometric assessment of the Breast-feeding Self- Efficacy Scale-Short Form among pregnant and postnatal women in Turkey. Midwifery 2010;26,101-8.*

FT100

Yenidoğan Yoğun Bakım Ünitesinde Yeni Bir Yaklaşım: Hemşirelik Bakımında Yakın Kızılötesi Spektroskopisi (Near-Infrared Spectroscopy-NIRS) Kullanımı

A New Approach in Neonatal Intensive Care Unit: Use Of Near-Infrared Spectroscopy (NIRS) in Nursing Care

Fatma TAŞ ARSLAN Sevinç AKKOYUN***

**Selçuk Üniversitesi Hemşirelik Fakültesi, Çocuk Sağlığı ve Hastalıkları Hemşireliği ABD, Konya, Türkiye*

***Konya Ereğli Devlet Hastanesi, Konya, Türkiye*

Özet

Yenidoğan yoğun bakım ünitelerinde (YYBÜ) hemşirelik bakım ve uygulamaları oldukça önemlidir. YYBÜ'lerinde bebekler özellikle ağrı ve strese çok sık maruz kalmaktadır. Ağrının sık tekrarlaması ve uzun süre olması yenidoğan bebeklerde ilerleyen dönemlerde nörolojik açıdan komplikasyonlar oluşturmaktadır. Ağrının hafifletilmesinde bebeklere sağlanacak bakım ve uygulamalar bu nedenle oldukça önemlidir. Ağrının belirtileri fizyolojik parametreler ile tespit edilip ölçekler ile düzeyi belirlenmektedir. Bu alanda yeni uygulamalardan biri NIRS (Near-Infrared Spectroscopy-NIRS/Yakın Kızılötesi Spektroskopisi) cihazıdır. NIRS, dokudaki oksijenli ve deoksijenli hemoglobinin ($Hb0_2$ ve HbR) konsantrasyonlarını ölçmek ve beyin konsantrasyonlarındaki ince değişiklikleri tespit etmek için kullanılabilen noninvaziv bir tekniktir. NIRS; alın (serebral), karın (mezenter) ve alt sırt (böbrek) gibi vücudun farklı alanlarına problar yerleştirerek bölgesel doku oksijenasyonunu (rSO_2) izler. NIRS, YYBÜ'sinde yatan preterm ve kritik hastalarda ağrı ile uyarılmış serebral aktivasyonu değerlendirme tekniği olarak kullanılabilmektedir. Son zamanlarda NIRS kullanılarak hem term hem de preterm bebeklerde hem stresli hem de ağrılı uyaranlara yanıt olarak serebral hemodinamik değişikliklerin meydana geldiği gösterilmiştir. Ağrılı işlem (invaziv işlemler, toplu bakım vb.) esnasında dokularda kullanılan O_2 değişikliklerini belirlememizi sağlamaktadır. Ağrılı işlem esnasında kanguru bakımı, yuvalama kullanımı, pozisyon değişiklikleri gibi uygulamaların ağrıyı hafiflettiği ve beyin $Hb0_2$ düzeyinde değişiklikler sağladığı belirlenmiştir. NIRS'ın koku, müzik, uyku ve doğumdan sonra oksijen tedavisine başlama gibi başka uygulamalarda da kullanıldığı görülmüştür. Yatak başında kullanılabilmesi ve invaziv olmayan bir işlem olması sebebi ile kullanım kolaylığı sağlamaktadır. NIRS cihazı birçok hemşirelik bakımı ve uygulamaların etkinliğinde kullanılabilecek bir cihaz olmasından dolayı dikkat çekici bir konumdadır. Son yıllarda NIRS teknolojisi ile dokuların oksijen tüketiminin ölçümü yenidoğan merkezlerinde giderek yaygınlaşmaktadır. YYBÜ'nde çalışan hemşirelerin NIRS cihazını kullanması ve yorumlanmasını öğrenmesi ve hemşirelik çalışmalarına ihtiyaç vardır.

Anahtar kelimeler: *hemşire, NIRS, yenidoğan yoğun bakım ünitesi*

Abstract

Nursing care and implementations are very important in neonatal intensive care units (NICU). In NICUs, infants are frequently exposed to pain and stress. Frequent recurrence and prolonged pain may cause neurologic complications in newborn infants. Therefore, nursing the care and implementations to be provided to the babies in relieving the pain are very important. Symptoms of pain are determined by physiological parameters and their level is determined by scales. One of the new applications in this field is the NIRS device (Near-Infrared Spectroscopy). NIRS is a noninvasive technique that can be used to measure concentrations of oxygenated and deoxygenated

hemoglobin (HbO_2 and HbR) in tissue and to detect subtle changes in brain concentrations. NIRS; It monitors regional tissue oxygenation (rSO2) by placing probes in different areas of the body such as forehead (cerebral), abdomen (mesentery) and lower back (kidney). NIRS, can be used as a technique to evaluate pain-induced cerebral activation in preterm and critical patients hospitalized in the NICU. Recently, using NIRS, it has been shown that cerebral hemodynamic changes occur in response to both stressful and painful stimuli in both term and preterm infants. It allows us to identify O_2 changes in tissues used during painful process (invasive procedures, collective care, etc.). It has been determined that kangaroo care, nesting, position changes during painful process relieved pain and caused changes in brain $Hb0_2$ level. NIRS has been found to be used in other applications, such as smell, music, sleep, and starting oxygen therapy after birth. It provides ease of use as it can be used at the bedside and is a non-invasive process. NIRS device is a device that can be used in the effectiveness of many nursing care and applications is in a remarkable position. In recent years, the measurement of oxygen consumption of tissues with NIRS technology has become increasingly common in neonatal centers. There is a need for nurses working in the NICU to learn how to use and interpret the NIRS device and nursing studies.

words: *neonatal intensive care unit, NIRS, nurse*

Introduction

Neonatal intensive care units (NICU) are areas where premature and term infants are followed with unstable, continuous nursing care and invasive procedures with medical and surgical problems (1,2). Preterm infants hospitalized in the NICU are exposed to many painful applications and procedures. Since pain has many negative effects especially in neurological aspects, it is very important to notice and comfort the infant in a short time. Frequent and recurrent painful procedures have negative effects in the long term (3,4,5). Pain in newborns is determined by changes in vital signs (SpO_2, heart rate, respiratory rate) and pain scales. Methods for measuring oxygenation include SpO_2 measurement with pulse oximetry, PaO_2 measurement in blood gas, demonstration of oxygen dissociation curve on arterial and venous sides, and measurement of O_2 consumption in tissue by NIRS (Near-Infrared Spectroscopy) (6).

The NIRS device has recently been used in the field of nursing. When the literature is examined, it is seen that the studies are inadequate and not examined in all aspects. This device is similar to monitors, since it is easy to use at the bedside, it does not cause pain and stress in infants. With these devices, it is possible to detect the painful situation and determine the applications that will provide relief to the infants. It is thought that NIRS device will be very useful in determining nursing care and applications in premature infants who constitute high risk patient group in NICU.

Using NIRS (Near-Infrared Spectroscopy)

NIRS is a noninvasive technique that can be used to measure concentrations of oxygenated and deoxygenated hemoglobin (HbO2 and HbR) in tissue and to detect subtle changes in brain concentrations (7,8,9,10). It is based on the principle that light from 700 nm to 1000 nm can penetrate up to 8 cm of skin and brain tissue (10, 11,12,13). NIRS; It monitors regional tissue oxygenation (rSO2) by placing probes in different areas of the body such as forehead (cerebral), abdomen (mesentery) and lower back (kidney). Each probe consists of a light source and 2 photodetectors to measure tissue oxygen levels at different tissue depths (14).

Pulse oximetry alone is insufficient to detect hypoxia at tissue level because only arterial oxygen saturation is measured by pulse oximetry, it does not indicate whether sufficient blood flow or oxygen delivery in a particular tissue actually occurs (15). NIRS cihazının önemi, mevcut yöntemlerle rutin olarak tanımlanamayan doku oksijen alımındaki farklılıkları tespit edebilmesidir (14). NIRS is needed to see how much O_2 the tissue consumes. The NIRS device shows venous saturation by weight and O_2 saturation from tissue (6). NIRS measures the difference between

oxyhemoglobin and deoxyhemoglobin, which reflects oxygen uptake in the tissue. This measurement is reported as regional oxygen saturation (rSO_2). NIRS shows Hb-O_2 saturation in tissues, especially in the venous compartment (0-100%). NIRS reflects arterial (25%), capillary (5%) and venous (70%) O_2 saturation. The tissue O_2 value indicated by NIRS ranges from 55% to 85%. The difference between arterial (pulse oximetry-SpO_2) and venous (NIRS) indicates the oxygen consumed by tissues (6,10,15). NIRS can show whether there is sufficient oxygenation in the local tissues of a preterm infant (eg brain) and how much this oxygen can be consumed (6,12,14).

One application of NIRS is to investigate hemodynamic responses to brain activation. Since NIRS can be applied to bedside measurements, it is an attractive method for monitoring infants, being safe, portable and quiet (8). In recent years, the measurement of oxygen consumption of tissues by NIRS technology has become increasingly widespread in NICU. The NIRS used in the NICU allows continuous measurement of tissue oxygenation reflecting the perfusion status and allows healthcare professionals to monitor fluctuations directly in real time (14). Since this technique does not require much physical restriction, it is especially suitable for the study of preterm and term infants (16). NIRS has attracted attention in neonatology because it can simultaneously detect differences in regional tissue oxygen uptake in different organ tissue beds. There are many ways to use NIRS in neonatology. NIRS provides continuous tissue oxygenation monitoring that allows the assessment of perfusion status, with the ability to monitor noninvasively at the bedside without interrupting routine care (14).

Pain and NIRS Using

Pain in infants especially in premature infants, it is one of the most common experiences due to trauma, disease or various medical interventions (17). It is almost inevitable that infants hospitalized in the NICU are exposed to painful procedures and stress. Infants are faced with numerous painful interventions such as blood collection and vaccination from birth (18,19,20). Long-term or frequent pain experience has many negative effects such as the development of brain and senses and affect growth on newborns in short and long term (3,4,5,18,20,28,29). If pain is not alleviated or eliminated by effective interventions, it may cause neurological and behavioral disorders over time (30,31,32).

Preterm infants are sensitive to pain and stress (21). Premature and term infants do not have verbal expressions and this makes it difficult to evaluate pain (13,22,23,24,25). Infants show pain with behavioral, physiological, hormonal and metabolic changes (17,26). Behavioral changes include crying, facial expressions, motor movements, and behavior changes. Physiological changes are changes in heart rate, respiratory rate, blood pressure and blood oxygen and carbon dioxide levels (13,27). It is more desirable for healthcare workers to monitor pain in a similar way to vital signs such as heart rate or oxygen saturation in newborn infants who are unable to express verbally pain.NIRS may be a method in this field and can be applied in clinical care (13).

Recently, it has been shown that cerebral hemodynamic changes (possibly due to cortical activation) occur in response to stressful or painful stimuli in both term and preterm infants using NIRS (7,19). It is recommended to use cerebral NIRS technique as an approach that evaluates brain activity in response to pain (35). Non-invasive monitoring techniques, such as NIRS, not only detect pain perception and related cortical sites involved in this experience, but may also provide the most accurate or sensitive observational pain indicators to be identified in certain situations (36,37).

When the literature is examined, it is seen that O_2 changes during painful procedure, especially O_2 changes in brain tissue, can be detected by NIRS device. Bartocci et al. (2006) and Slater et al. (2006) found that NIRS increased the HbO_2 on the contralateral somatosensor cortex after blood was drawn in a study of tactile and painful stimuli in premature infants (19,33). In a study conducted by Ozawa et al. (2010) to determine whether the previous blood collection experience changed the correlation between prefrontal cortical pain responses and Premature Infant Pain Profile (PIPP) scores when compared with infants without blood collection experience, the NIRS device was included in the measurement instruments used. (38). Orlandi et al (2011), in the study conducted to

evaluate the discomfort caused by the decrease in blood oxygenation during crying of preterm infants, NIRS device was used and the recovery period after term crying was found to be more stable and faster than preterm infants (39). Gerull et al (2013), in preterm infants after heel removal procedure to compare the effect of three different non-pharmacological interventions on cortical activation, heart rate and peripheral oxygen saturation (SaO_2) somatosensory cortex measured by NIRS was analyzed (40).

Decreasing the pain level with the care provided to the infants during the painful procedure are important applications in nursing care. Kangaroo care is the most common practice in this area. Olsson et al. (2016) found that kangaroo care during premature infants to evaluate the relief of pain measured by NIRS was found to be significant increase in oxygenated hemoglobin on the contralateral side of the infants receiving kangaroo care during blood collection and kangaroo care was found to alleviate pain (13).

NIRS and other implementations

With the NIRS device, O_2 changes were investigated in other approaches such as smell, sleep, music and oxygen delivery after birth. Bartocci et al (2001) in the study, the use of NIRS monitoring of hemoglobin changes, showed that newborns can be used to evaluate the odor response to colostrum and vanilla (34). Kotilahti et al (2009) used the NIRS device to examine speech and music responses in the auditory cortex of the term newborn during natural sleep (8). Aoyama et al. (2010) used the NIRS device to examine the differences in oxygenation of brain blood flow in breast milk and formula milk. It was found that newborns could distinguish the scents of breast milk from formula milk (41). Taskin et al. (2014) found that the use of cerebral oximetry in the delivery room could be detected more quickly and accurately by using oxygen and thus avoiding unnecessary oxygen use and possible risks (42).

Conclusion

The use of NIRS in nursing practice is a new approach. The number of studies conducted in our country is very low, especially in the field of nursing. It provides ease of use with its advantages such as bedside use, very similar to the use of pulse oximetry device, and being non-invasive. Tissue O_2 level with nursing care can be beneficial. Nursing care is especially important in pain procedures. Position change, kangaroo care, use of nesting, use of crib, providing the smell of breast milk, lullaby resting applications such as pain has been found to be beneficial. Increasing the number of NIRS devices in the NICUs will allow O_2 levels to be observed in more infants and studies for nursing applications will be made. Because of these reasons, it is very important for the nurses to know the use and interpretation of NIRS and use it in the field.

References

1. *Ovalı F, Dağoğlu T, 2007. Yenidoğan ünitelerinin organizyonu. In: Neonatoloji. Eds: Dağoğlu T, Ovalı F, 2. Baskı. İstanbul: Nobel Tıp Kitabevleri, p. 9-14.*
2. *Dündar SA, Bayat M, Erdem E. Yenidoğan ünitelerinin düzeyleri ve organizasyonu. Sağlık Bilimleri Dergisi (Journal of Health Sciences) 2011;20(2):137-42.*
3. *Grunau RE, Holsti L, Peters JW. Long-term consequences of pain in human neonates. Seminars in Fetal and Neonatal Medicine 2006;268-75.*
4. *Ballweg D. Neonatal and pediatric pain management: standards and application. Paediatrics and Child Health 2008;(18):61-S6.*
5. *Taddio A, Shah V, Hancock R, Smith RW, Stephens D, Atenafu E, Beyene J, Koren G, Stevens B, Katz J. Effectiveness of sucrose analgesia in newborns undergoing painful medical procedures. Cmaj 2008;179(1):37-43.*
6. *Tekin N, Soylu H, Dilli D. Neonatal hemodinami ve hipotansiyona yaklaşım rehberi 2017.*
7. *Limperopoulos C, Gauvreau KK, O'Leary H et al. Cerebral hemodynamic changes during intensive care of preterm infants. Pediatrics 2008;122(5):1006-13.*

8. *Kotilahti K, Nissilä I, Huotilainen M, Mäkelä R, Gavrielides N, Noponen T, Björkman P, Fellman V, Katila T. Bilateral hemodynamic responses to auditory stimulation in newborn infants. Neuroreport 2005;16(12):1373-7.*
9. *Taşkın GA, Kaya A, Sal E, Üstyol L, Peker E, Tuncer O, Kırımi E. Comparıson of pulse oxymeter and cerebral oxymeter values ın healthy newborns ın the first five mınutes of lıfe. HIP 2015; 33, 36.*
10. *Dilli D, Soylu H, Tekin N. Türk Neonatoloji Derneği yenidoğanın hemodinamisi ve yenidoğanlarda hipotansiyona yaklaşım rehberi. Türk Pediatri Arşivi 2018;53(1):65-75.*
11. *Bartocci M. Brain functional near infrared spectroscopy in human infants: cerebral cortical haemodynamics coupled to neuronal activation in response to sensory stimulation, Institutionen för kvinnors och barns hälsa/Department of Women's and …, p. 2006.*
12. *Wolfberg AJ, du Plessis AJ. Near-infrared spectroscopy in the fetus and neonate. Clinics in perinatology 2006;33(3):707-28.*
13. *Olsson E, Ahlsén G, Eriksson M. Skin-to-skin contact reduces near-infrared spectroscopy pain responses in premature infants during blood sampling. Acta Paediatrica 2016;105(4):376-80.*
14. *Marin T, Moore J. Understanding near-infrared spectroscopy. Advances in Neonatal Care 2001;11(6):382-8.*
15. *Naulaers G, Morren G, Van Huffel S, Casaer P, Devlieger H. Cerebral tissue oxygenation index in very premature infants. Archives of Disease in Childhood-Fetal and Neonatal Edition 2002;87(3):189-92.*
16. *Imai M, Watanabe H, Yasui K, Kimura Y, Shitara Y, Tsuchida S, Takahashi N, Taga G. Functional connectivity of the cortex of term and preterm infants and infants with Down's syndrome. Neuroimage 2014;85,272-8.*
17. *Faye PM, De Jonckheere J, Logier R, Kuissi E, Jeanne M, Rakza T, Storme L. Newborn infant pain assessment using heart rate variability analysis. The Clinical journal of pain 2010;26(9):777-82.*
18. *Anand K. Consensus statement for the prevention and management of pain in the newborn. Archives of pediatrics & adolescent medicine 2001;155(2):173-80.*
19. *Bartocci M, Bergqvist LL, Lagercrantz H, Anand K. Pain activates cortical areas in the preterm newborn brain. Pain 2006;122(1-2):109-17.*
20. *Derebent E, Yiğit R. Yenidoğanda Ağrı: Değerlendirme ve Yönetim. CÜ Hemşirelik Yüksekokulu Dergisi 2006;10(2):41-8.*
21. *Kinouchi K. Anaesthetic considerations for the management of very low and extremely low birth weight infants. Best Practice & Research Clinical Anaesthesiology 2004;18(2):273-90.*
22. *Büttner W, Finke W. Analysis of behavioural and physiological parameters for the assessment of postoperative analgesic demand in newborns, infants and young children: a comprehensive report on seven consecutive studies. Pediatric Anesthesia 2000;10(3):303-18.*
23. *Fitzgerald M. The development of nociceptive circuits. Nature reviews neuroscience 2005;6(7):507.*
24. *Ranger M, Chau CM, Garg A, Woodward TS, Beg MF, Bjornson B, Poskitt K, Fitzpatrick K, Synnes AR, Miller SP. Neonatal pain-related stress predicts cortical thickness at age 7 years in children born very preterm. PLoS One 2013;8(10):76702.*
25. *Hartley C, Slater R. Neurophysiological measures of nociceptive brain activity in the newborn infant–the next steps. Acta paediatrica 2014;103(3):238-42.*
26. *Yiğit Ş, Ecevit A, Altun Köroğlu Ö. Yenidoğan döneminde ağrı ve tedavisi rehberi 2015. Türk Neonatoloji Derneği.*
27. *Melo GMd, Lélis ALPdA, Moura AFd, Cardoso MVLML, Silva VMd. Pain assessment scales in newborns: integrative review. Revista Paulista de Pediatria 2014;32(4):395-402.*
28. *Mathew P, Mathew JL. Assessment and management of pain in infants. Postgraduate Medical Journal 2003;79(934):438-43.*
29. *Sarvis AL. Assessment and documentation of newborn pain: an intervention and longitudinal evaluation, Master's Thesis, 2004; University of Florida, Nursing School.*
30. *Huang C-M, Tung W-S, Kuo L-L, Ying-Ju C. Comparison of pain responses of premature infants to the heelstick between containment and swaddling. The journal of nursing research: JNR 2004;12(1):31-40.*
31. *Simons SH, Tibboel D. Pain perception development and maturation. Seminars in Fetal and Neonatal Medicine 2006;227-31.*

32. *Asadi-Noghabi F, Tavassoli-Farahi M, Yousefi H, Sadeghi T. Neonate pain management: what do nurses really know? Global journal of health science 2014;6(5):284.*
33. *Slater R, Cantarella A, Gallella S, Worley A, Boyd S, Meek J, Fitzgerald M. Cortical pain responses in human infants. Journal of Neuroscience 2006;26(14):3662-6.*
34. *Bartocci M, Winberg J, Papendieck G, Mustica T, Serra G, Lagercrantz H. Cerebral hemodynamic response to unpleasant odors in the preterm newborn measured by near-infrared spectroscopy. Pediatric Research 2001;50(3):324.*
35. *Ranger M, Gelinas C, 2014. Innovating in pain assessment of the critically ill: exploring cerebral near-infrared spectroscopy as a bedside approach. Pain Management Nursing 2014;15(2):519-29.*
36. *Slater R, Cantarella A, Franck L, Meek J, Fitzgerald M. How well do clinical pain assessment tools reflect pain in infants? PLoS medicine 2008;5(6):129.*
37. *Slater JP, Guarino T, Stack J, Vinod K, Bustami RT, Brown III JM, Rodriguez AL, Magovern CJ, Zaubler T, Freundlich K. Cerebral oxygen desaturation predicts cognitive decline and longer hospital stay after cardiac surgery. The Annals of thoracic surgery 2009;87(1)36-45.*
38. *Ozawa M, Kanda K, Hirata M, Kusakawa I, Suzuki C, 2011. Influence of repeated painful procedures on prefrontal cortical pain responses in newborns. Acta paediatrica, 100, 2, 198-203.*
39. *Orlandi S, Bocchi L, Donzelli G, Manfredi C, 2012. Central blood oxygen saturation vs crying in preterm newborns. Biomedical Signal Processing and Control, 7, 1, 88-92.*
40. *Gerull R, Cignacco E, Stoffel L, Sellam G, Nelle M. Physiological parameters after nonpharmacological analgesia in preterm infants: a randomized trial. Acta paediatrica 2013;102(8):368-73.*
41. *Aoyama S, Toshima T, Saito Y, Konishi N, Motoshige K, Ishikawa N, Nakamura K, Kobayashi M. Maternal breast milk odour induces frontal lobe activation in neonates: A NIRS study. Early Human Development 86 (2010) 541–545.*
42. *Taşkın GA, Kaya A, Sal E, Üstyol L, Peker E, Tuncer O, Kırımi E, 2015. Comparıson of pulse oxymeter and cerebral oxymeter values ın healthy newborns ın the fırst fıve mınutes of lıfe. HIP, 33, 36.*

FT101

İntestinal Obstruksiyona Neden Olan Neonatal Over Kisti

Neonatal Ovarian Cyst Causing Intestinal Obstruction

*Merve MISIRLIOĞLU[*1], Mustafa DİLEK[*2], Hülya ÖZTÜRK[*3], Çetin BORAN[*4]*

[1]Çukurova Üniversitesi Tıp Fakültesi Çocuk Yoğun Bakım BD, Adana ;*

*[2 *]Abant İzzet Baysal Üniversitesi Tıp Fakültesi Neonatoloji BD, Bolu;*

[3] Abant İzzet Baysal Üniversitesi Tıp Fakültesi Çocuk Cerrahisi ABD, Bolu;*

[4] Abant İzzet Baysal Üniversitesi Tıp Fakültesi, Tıbbi Patoloji ABD, Bolu*

ÖZET

İntrauterin dönemde ultrasonografinin sık kullanılması sonucu, fetal anatominin ayrıntılı değerlendirilebilmesi nedeniyle, intrauterin kistlerin tanı insidansı artmaktadır. Bu nedenle fetal ve neonatal over kistlerinin tespiti ve tedavisinde yakın perinatal takip önemlidir. Kistin boyutuna ve içeriğine, gelişen komplikasyonlara göre tedavisi planlanmaktadır. Bu vaka sunumda antenatal tanı alan ve postnatal intestinal obstruksiyona neden olması nedeniyle ooferektemi ve over kist eksizyonu yapılan yenidoğan sunulmuştur.

***Anahtar kelimeler**: Neonatal intraabdominal kitle, Follikül kisti, Gelişimsel over kisti*

SUMMARY

Because of the frequent use of ultrasonography in intrauterine period, the diagnostic incidence of intrauterine cysts is increasing due to the detailed evaluation of fetal anatomy. For this reason, close perinatal follow-up is important in the detection and treatment of fetal and neonatal over cysts. Treatment is planned according to the size and content of the cyst and the complications that develop. In this case report, newborn with oopherectomy and overcystic excision is presented because of antenatal diagnosis and postnatal intestinal obstruction.

***Key words:** Neonatal intraabdominal mass, Follicular cyst, Developmental overcyst*

GİRİŞ

Neonatal dönemde ayrıntılı ultrasonografik takipler sayesinde fetuslarda overian kistler sık olarak saptanmaktadır (1). Dişi bir fetusta kistik karın içi kitle saptandığında ayırıcı tanısının iyi yapılması gerekmektedir. Ayırıcı tanıda intestinal duplikasyon, hidronefroz, mesane distansiyonu, mekonyum peritoniti, intestinal obstruksiyon, hidrometrokolpos, duodenal atrezi, mezenterik, urakal ve over kistleri vardır (2).

Yeni doğanlarda overian kistlerde 2 cm üzeri patolojik olarak kabul edilmektedir (3). Kistin büyüklüğünün yanında ultrasonografik bulguları ile hastanın semptomları da prognoz ve tedaviyi belirlemektedir. Eğer kist torsiyonu varsa veya komplike ise tedavi cerrahidir ve etkilenmiş overin alınmasıyla sonuçlanır (4, 5).

OLGU SUNUMU

27 yaşındaki sağlıklı G2P1 annenin 38 haftalık gebeliğinden 3330 gram ağırlığında sezaryenle doğan kız bebek; antenatal dönemde yapılan usg'lerde belirlenmiş abdominal kistik yapı olması nedeniyle doğum sonrası takibe alındı. Gebeliğin 28 haftasında yapılan fetal

ultrasonografide batın sol alt kadranda anterior yerleşimli 5x6 cm boyutlarında ince duvarlı basit kistik lezyon izlendiği öğrenildi. Hastanın yapılan muayenesinde abdominal distansiyon ve sol alt kadrandan umbilikusa doğru uzanım gösteren ele gelen kitle dışında patolojik bulgu saptanmadı. Tam kan tetkikleri, karaciğer ve böbrek fonksiyon testleri ve serum elektrolitleri normal sınırlarda bulundu. Postnatal çekilen abdominal ultrasonografide batın sağ ve solda izlenen 5x7x8 cm boyutlarında ince duvarlı basit kistik lezyon izlendi. Doğum sonrası 6.saatinde batın distansiyonu arttı ve çekilen ayakta direk batın grafisinde ileus ile uyumlu görüntü izlendi (Resim 1-B). Öncelikle yediklerini içerir tarzda kusma gözlendi. Antenatal ultrasonografide kist boyutlarının çok büyük olması nedeniyle çevre dokuları bası yaptığı düşünüldü. İntestinal obstruksiyon kliğinin gelişmesi nedeniyle operasyon kararı alındı. Hastaya ekploratif laparomi işlemi ile kistin tüm overi etkilemesi nedeniyle sol over kist eksizyonu ve ooferektomi işlemi uygulandı. Çıkarılan kistik dokunun patolojik incelemesinde follikul kisti olduğu değerlendirildi. Operasyon sonrası takiplerinde komplikasyon izlenmedi ve taburcu edildi.

TARTIŞMA

Neonatal dönemde ayrıntılı ultrasonografik takipler sayesinde fetuslarda overian kistikler sık olarak saptanmaktadır (1). Boyut olarak 2 santimetre üzerindeki kistler **patolojik olarak kabul edilmektedir (3). Antenatal dönemde ultrasonografinin yaygın olarak kullanılması tanı sıklığını arttırmaktadır. Genellikle üçüncü trimesterde tanı konulmaktadır (1, 6). Bizim hastamız da üçüncü trimesterde tanı almış ve kist boyutları 5x6 cm olarak raporlanmıştır.**

Neonatal over kistlerinin etyolojisinde maternal ve fetal hormonal uyarılar sorumlu tutulmaktadır (3). Yeni doğanlarda over kistleri; plasental koryonik gonadotropin hormonunun fazla salınması veya plasentanın bu hormona aşırı duyarlılığı sonucunda meydana gelmektedir. Annede diyabetin olması, toksemi veya Rh uyuşmazlığı gibi durumlar da plasentada koryonik gonadotropin hormonunun aşırı salgılanmasına ve bunun sonucunda yeni doğanda overlerin boyutlarında ve kist oluşma ihtimalinde artışa yol açmaktadır. Buna bağlı olarak doğum sonrası hormon seviyesinde azalma nedeniyle bu kistler çoğunlukla gerilemektedir (7-9).

Fetal overian kistler; genellikle asemptomatik ve tek taraflıdır. Bilateral kistler unilateral kistlere göre mortalite ve morbidite açısından daha risklidir (10). Büyük boyutlu kistlerde ve solid komponente, septalara, içinde debris veya pıhtıya sahip olanlarda torsiyon, rüptür ve malignansi riski olduğundan dolayı postnatal dönemde komplikasyonlar ortaya çıkmadan cerrahi müdahale düşünülmelidir (11-13). Özellikle kist çapı 5 cm üzerinde ise torsiyon riski artmaktadır (14). Ayrıca kist rüptürü sonrasında peritonit gelişimi veya nekrotik kist ile çevre bağırsaklar arasında enflamatuar adezyona neden olabileceği gibi; kistlerde spontan gerileme de görülebilmektedir.

Dişi fetusta; kistik abdominal kitle izlendiğinde fetal over kistleri de akla gelmelidir. Over kistlerinin spesifik ultrasonografik görünümü yoktur. Urakus, enterik, mezenterik duplikasyon kistleri fetalover kistlerine göre tübüler olma eğilimindedir. Urakal kistler genellikle orta hattadır ve umbilikusa uzanım göstermektedir. Fetal over kitlelerinin büyük oranda bening olduğu bildirilmiştir. İntraabdominal kitleler yerleşim yerlerine, komşuluklarına, şekline ve iç yapısına dikkat edilerek incelenmelidir (14). Ayırıcı tanısının iyi yapılması gerekmektedir.

Fetal over kistinde; boyutu uygun ve semptomu yoksa esas tedavi yöntemi konservatiftir; doğum sonrası iki haftalık izlemde kistlerin büyük bir kısmı regrese olmaktadır. Over kistlerinde hastanın kliniğine göre prenatal dönemde aspirasyon yapılabileceği gibi postnatal dönemde de takip veya operasyon kararı verilebilir (15). Yeni doğanlardaki over kistlerinin ultrasonografi eşliğinde ince iğne aspirasyonuyla tedavi edilmeleri de mümkündür. Ancak aspirasyonla kist kaybolsa bile tekrar oluşma olasılığı vardır (13). Tedavi, kistin

lokalizasyonuna bağlı olarak ooferektomi veya kistin enükleasyonudur. Ooferektomi, geride sağlam over dokusu yoksa endikedir. Fallop tüpünün çıkarılmasına gerek yoktur (13, 16). Bizim olgumuzda da 5x6x8 cm boyutlarında kistik kitle, postnatal dönemde intestinal mekanik obstruksiyona neden olarak hastada kusmalara ve enteral beslenememeye neden olması nedeniyle opere edilmiş kist ve over dokusu eksize edilmiş; fallop tüp yerinde bırakılmıştır.
Sonuç olarak; fetal ve neonatal abdominal kistik kitle ile doğan hastada bu kitle overe ait olabilir. Over kistlerine tedavi yaklaşımı kitlenin boyutuna ve yol açtığı sorunlara göre belirlenmesi gerekmektedir.

Kaynaklar

1. *Karasahin KE, Gezginc K, Ulubay M, Ergun A. Fetal ovarian cysts diagnosed during prenatal ultrasound screening. Taiwan J Obstet Gynecol. 2008;47(2):215-7.*
2. *Sandler MA, Smith SJ, Pope SG, Madrazo BL. Prenatal diagnosis of septated ovarian cysts. J Clin Ultrasound. 1985;13(1):55-7.*
3. *Chiaramonte C, Piscopo A, Cataliotti F. Ovarian cysts in newborns. Pediatr Surg Int. 2001;17(2-3):171-4.*
4. *Luzzatto C, Midrio P, Toffolutti T, Suma V. Neonatal ovarian cysts: management and follow-up. Pediatr Surg Int. 2000;16(1-2):56-9.*
5. *Colby C, Brindle M, Moss RL. Minimally invasive laparotomy for treatment of neonatal ovarian cysts. J Pediatr Surg. 2001;36(6):868-9.*
6. *Fremond B, Guibert L, Jouan H, Milon J, Tekou H, Duval JM, et al. [Prenatal diagnosis of ovarian cysts]. Chir Pediatr. 1986;27(3):128-33.*
7. *Nussbaum AR, Sanders RC, Hartman DS, Dudgeon DL, Parmley TH. Neonatal ovarian cysts: sonographic-pathologic correlation. Radiology. 1988;168(3):817-21.*
8. *Meizner I, Levy A, Katz M, Maresh AJ, Glezerman M. Fetal ovarian cysts: prenatal ultrasonographic detection and postnatal evaluation and treatment. Am J Obstet Gynecol. 1991;164(3):874-8.*
9. *Vogtlander MF, Rijntjes-Jacobs EG, van den Hoonaard TL, Versteegh FG. Neonatal ovarian cysts. Acta Paediatr. 2003;92(4):498-501.*
10. *Yilmaz Y DG, Ulu HO, Celik IH, Oguz SS, Erdeve O, Dilmen U. Four neonates with giant ovarian cysts: difficulties in diagnosis and decision making process. Jatern Fetal Neonatal Med. . 2011.*
11. *Alrabeeah A, Galliani CA, Giacomantonio M, Heifetz SA, Lau H. Neonatal ovarian torsion: report of three cases and review of the literature. Pediatr Pathol. 1988;8(2):143-9.*
12. *Bagolan P, Rivosecchi M, Giorlandino C, Bilancioni E, Nahom A, Zaccara A, et al. Prenatal diagnosis and clinical outcome of ovarian cysts. J Pediatr Surg. 1992;27(7):879-81.*
13. *Başaklar C. Over Tümör Ve Kistleri. Bebek Ve Çocukların Cerrahi Ve Ürolojik Hastalıkları II.Cilt 87.Bölüm. 2006:2041-57.*
14. *Ozcan HN, Balci S, Ekinci S, Gunes A, Oguz B, Ciftci AO, et al. Imaging Findings of Fetal-Neonatal Ovarian Cysts Complicated With Ovarian Torsion and Autoamputation. AJR Am J Roentgenol. 2015;205(1):185-9.*
15. *Monnery-Noche ME, Auber F, Jouannic JM, Benifla JL, Carbonne B, Dommergues M, et al. Fetal and neonatal ovarian cysts: is surgery indicated? Prenat Diagn. 2008;28(1):15-20.*
16. *Russ J. Sequental torsion of the uterina adnexa. Mayo Clinic Proc 62: 623, 1987. 1987.*

FT119

The Importance Of Holter Monitoring In A Clinically Normal Child With Implanted Epicardial Pacemaker

Epikardiyal Kalp Pili Takılmış Klinik Olarak Normal Bir Çocukta Holter Monitörizasyonun Önemi

Fatih Şap[1], Hüseyin Yılmaz[1]

[1]Necmettin Erbakan University, Meram Medical Faculty, Department of Pediatrics, Division of Pediatric Cardiology, Konya, Turkey

ABSTRACT

Arrhythmias in congenital heart diseases may be seen due to structural disorders or they may develop as a result of surgical interventions due to repair. The incidence of complete atrioventricular block after cardiac surgery for congenital heart disease was reported to be between 1-3%. Permanent pacemaker implantation may be required in some rhythm problems after open heart surgery. Here, we present a five-year-old boy who has been followed up regular intervals for three years in our outpatient clinic. When he was four-month-old, he had been undertaken congenital heart surgery in another centre and then permanent epicardial pacemaker implantation had been done due to development of complete atrioventricular block. Despite very little or no problems were seen in electrocardiographic evaluations, we determined serious rhythm problems (failure to capture, oversensing and also long pauses up to 5.5 seconds) via holter ECG monitoring performed with regular intervals. In the event of any significant change of setting or battery/lead change in the devices of patients with permanent pacemaker implantation, careful examination of the holter ECG monitoring is essential to avoid unexpected conditions.

Keywords: *Atrioventricular block, Cardiac pacemaker, Holter ECG monitoring*

ÖZET

Konjenital kalp hastalıklarında yapısal bozukluklara bağlı aritmi görülebileceği gibi, onarım nedeni ile yapılan cerrahi girişimler sonucunda da gelişebilmektedir. Konjenital kalp hastalığı nedeniyle yapılan kalp cerrahisi sonrası atriyoventriküler tam blok görülme sıklığı %1-3 arasında olduğu bildirilmiştir. Açık kalp cerrahisi sonrası ortaya çıkan bazı ritim problemlerinde kalıcı kalp pili takılması ihtiyacı olabilmektedir. Burada polikliniğimizde üç yıldır düzenli aralıklarla takip edilen beş yaşında erkek bir olgu sunulmuştur. Olgu dört aylıkken başka bir merkezde konjenital kalp cerrahisi geçirmiş ve sonrasında atriyoventriküler tam blok gelişmesi nedeniyle epikardiyal kalıcı kalp pili takılmıştır. Elektrokardiyografik değerlendirmelerinde çok az veya hiç sorun görülmemesine rağmen düzenli aralıklarla yapılan holter EKG monitörizasyonunda ciddi ritim problemleri (yakalama başarısızlığı, aşırı algılama ve 5,5 saniyeyi bulan duraklamalar) saptandı. Kalıcı kalp pili takılı olguların cihazları ile ilgili herhangi bir önemli ayar değişikliği veya batarya/lead değişikliği durumunda beklenmeyen bir durumla karşılaşmamak için mutlaka holter EKG monitörizasyonun dikkatli bir şekilde incelenmesi hayati önem arz etmektedir.

Anahtar Kelimeler: *Atriyoventriküler blok, Kalp pili, Holter EKG monitorizasyonu*

INTRODUCTION

Arrhythmia is one of the most common complications of congenital heart disease and is the leading cause of hospitalization and death.(1) Arrhythmias may be due to structural disorders or as a result of surgical interventions for repair. Despite advances in the management of congenital heart diseases,

damage to the conduction system during surgical repair leads to the development of various degrees of postoperative arrhythmias. Permanent pacemaker implantation may be needed for rhythm problems after open heart surgery. With the increase in permanent pacemaker implantations, a large number of operated congenital heart patients are exposed to device-related complications.(2) Arrhythmias developing after surgery of congenital heart defects are among the most important causes of morbidity and mortality.(3) The purpose of this report is to emphasize the crucial role of holter ECG monitoring in a child with epicardial permanent pacemaker.

CASE

Three years ago, a two-year old boy came to our clinic to be followed up. He had been operated for perimembranous ventricular septal defect at age of four months. After surgery, epicardial permanent pacemaker with VVIR mode had been implanted due to complete atrioventricular block. In his first examination, patient had no complaint and, his clinical and laboratoary examinations were in normal limits. Cardic defect was observed as ocluded and, cardiac functions were evaluated as normal in echocardiography. Twenty-four-hour holter monitoring showed lower limit of heart rate was 95 beats/min (bpm) and adjusted to 75 bpm. Thus patient felt more comfortable and long battery life was provided. He was evaluated six months intervals with no rhythm problems during two years. One year ago, we recognised rare failures to capture that one QRS complex was not seen after pace spike on holter monitoring. He was followed up clinically because the pause duration did not exceed two seconds. However after six months, pause increased up to four seconds (Figure 1). This finding is evaluated as an increased risk for syncope and sudden cardiac arrest. For this reason, pacing amplitude was increased. As pacing amplitude was increased, failure to capture was significantly reduced. Then another problem came into stage that battery life was rapidly decreased. Patient was brought to our institution by his parents due to fatigue one months after battery change. Physical examination and echocardiographic evaluation were similar to previous findings. However, frequent pauses with a maximum duration of 5.5 seconds were observed on holter monitoring (Figure 2). In addition, there was oversensing problem together with failure to capture. These findings were thought to be probably due to battery leads. So patient was again in a life threatening condition and recently referred for transvenous pacemaker implantation.

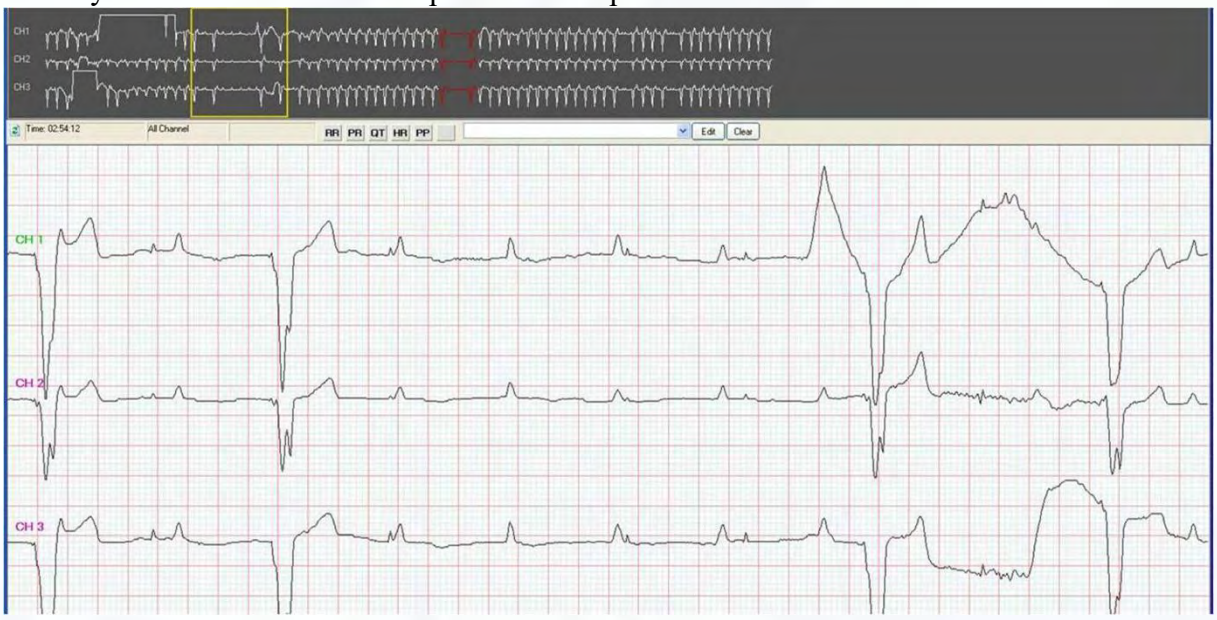


Figure 1. Failure to capture and long pause are seen

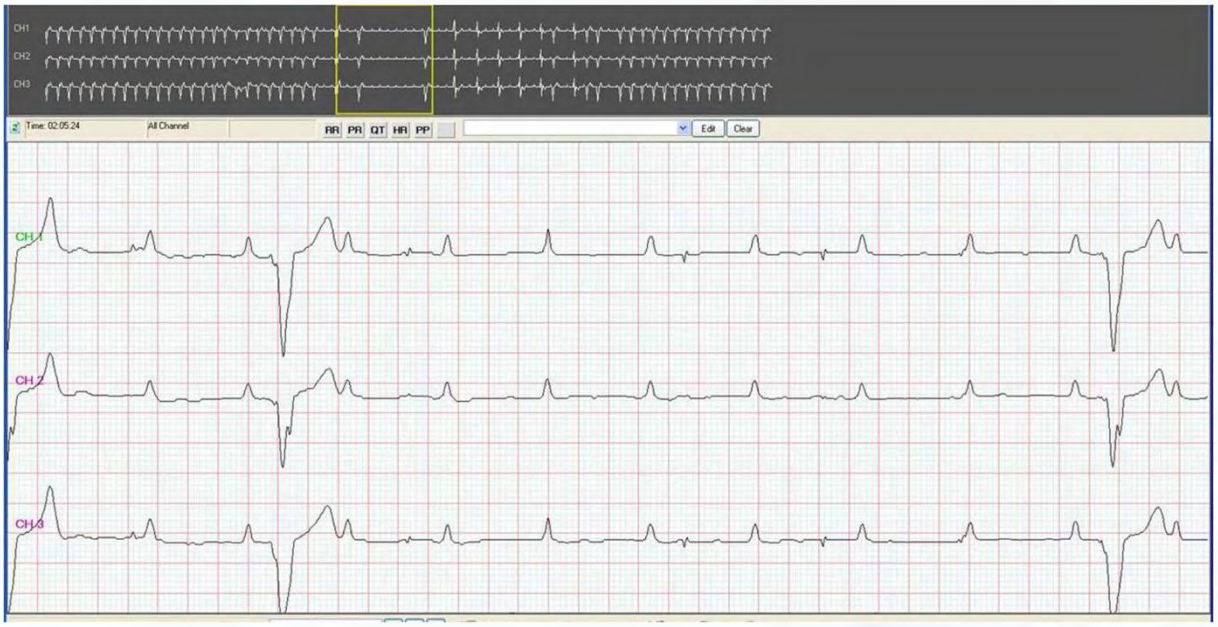


Figure 2. Long pause, failure to capture and also oversensing problem are seen

DISCUSSION

Arrhythmias following cardiac surgery are common in both early and late periods. The incidence and type of arrhythmias vary according to the underlying lesion, surgical type, age and technique of surgeon. Although most rhythm problems are transient, some of them may be resistant to treatment or even life-threatening.(4) Arrhythmia can be seen in 30% of children after ventricular septal defect closure, 35% of children after Tetralogy of Fallot repair, and 47% of children after atrioventricular canal defect repair. Several studies have shown that the risk factors for early postoperative arrhythmias were lower body weight, younger age, longer cardiopulmonary bypass time, higher surgical complexity, and residual defect.(5) In general, arrhythmia occurring during the postoperative period can be classified into bradyarrhythmia or tachyarrhythmia. Junctional ectopic tachycardia is encountered in 2.0–11.2% of children undergoing cardiac surgery and It is considered to be the most common type of tachyarrhythmia seen during early postoperative care.(6) After repair of ventriculer septal defect, junctional ectopic tachycardia can be seen in early period. Ventricular arrhythmias can be seen after repair of Tetralogy of Fallot and Ross procedures. Sinus node dysfunction and atrial arrhythmias have been reported more frequently after Senning and Fontan operations.(4) Late presenting heart block may appear after months or even years. The incidence of postoperative arrhythmia has been reported in the literature ranging from 8.0% to 79.1%.(7) The incidence of complete atrioventricular block after cardiac surgery for congenital heart disease was seen between 1-3%. Most of these cases occur as a result of operations around the atrioventricular node. The greatest risk for atrioventricular block occurs with surgery for left ventricular outflow tract obstruction followed by closure of a ventricular septal defect and repair of Tetralogy of Fallot.(8) The need for permanent pacemaker implantation in rhythm problems after open heart surgery has been reported between 0.8% and 6% in various studies. This need is mainly beacause of damage to the sinoatrial node or other conduction system. The main contribution in the occurrence of damage is mechanical trauma to the conduction system such as valve surgeries, myectomy and ventricular septal defect repair.(9) Temporary pacemaker is important in the management of arrhythmias after cardiac surgery, and it is life-saving in cases of bradyarrhythmia.(6) Pacemaker implantation is an invasive procedure and may lead to in the early period; pneumothorax, hemothorax, arterial injury, hematoma, air embolism and lead to in the late period; venous thrombosis, skin erosion, Twiddler syndrome (battery rotation), battery displacement, electrode breakage, displacement.(10) Apart from

these technical problems, rhythm problems developed during follow-up, detection and excitation problems of the device may cause the device to malfunction as programmed.(11) In our patient, despite there was no significant symptom which he was suffered, we detected several times so essential findings while examining holter ECG. This indicates that using only standard electrocardiography for evaluation of such patients with implanted pacemaker during follow up can be probably insufficient and also risky. In conclusion, It is so important to regularly perform routine holter ECG monitoring follow-up in children with permanent pacemaker implantation even in clinically normal. Moreover it is essential to carefully examine the records to avoid undesirable conditions after significant adjustment or battery/lead replacement.

References

1- *Khairy P. EP challenges in adult congenital heart disease. Heart Rhythm 2008;5(10):1464–72.*
2- *Midha D, Chen Z, Jones DG et al. All Pacing in congenital heart disease – A four-decade experience in a single tertiary centre. Int J Cardiol 2017;241:177–81.*
3- *Skippen PW, Sanatani S, Gow RM, Froese N. Diagnosis of postoperative arrhythmias following paediatric cardiac surgery. Anaesth Intensive Care 2009;37(5):705-19.*
4- *Karpuz D, Demetgül H, Giray D, Hallıoğlu O. Frequency and risk factors of arrhythmia developing after cardiac surgery in children. Mersin Univ Saglık Bilim Derg 2018;11(1):1-6.*
5- *Delaney JW, Moltedo JM, Dziura JD, Kopf GS, Snyder CS. Early postoperative arrhythmias after pediatric cardiac surgery. J Thorac Cardiovasc Surg 2006;131(6):1296-300.*
6- *Kabbani MS, Al Taweel H, Kabbani N, Al Ghamdi S. Critical arrhythmia in postoperative cardiac children: Recognition and management. Avicenna J Med 2017;7(3):88-95.*
7- *Grosse-Wortmann L, Kreitz S, Grabitz RG et al. Prevalence of and risk factors for perioperative arrhythmias in neonates and children after cardiopulmonary by pass: continuous holter monitoring before and for three days after surgery. J Cardiothorac Surg 2010;5:85. Doi: 10.1186/1749-8090-5-85.*
8- *Bonatti V, Agnetti A, Squarcia U. Early and late postoperative complete heart block in pediatric patients submitted to open-heart surgery for congenital heart disease. Pediatr Med Chir 1998;20 (3):181-6.*
9- *Jaeger FJ, Trohman RG, Brener S, Loop F. Permanent pacing following repeat cardiac valve surgery. Am J Cardiol 1994;74(5):505-7.*
10- *Kron J, Herre J, Renfroe EG et al. Lead and device related complications in the Antiarrhytmics Versus Implantable Defibrillators Trial. Am Heart J 2001;141(1):92-8.*
11- *Israel CW. How to avoid inappropriate therapy. Curr Opin Cardiol 2008;23(1):65–71.*

FT102

Syncope Due To Social Phobia May Be A Sign Of Serious Ventricular Arrhythmia

Sosyal Fobi Nedeni İle Meydana Gelen Senkop Ciddi Ventriküler Aritminin Bir Göstergesi Olabilir

Fatih Şap[1], Muhammed Güneş[1]

[1]Necmettin Erbakan University, Meram Medical Faculty, Department of Pediatrics, Division of Pediatric Cardiology, Konya, Turkey

ABSTRACT

Catecholaminergic polymorphic ventricular tachycardia is a rare inheritable cardiac channelopathy characterized by malignant polymorphic ventricular tachycardias that are triggered by catecholaminergic stress. During physical exercise or emotional stress, patients typically encounter syncope or sudden cardiac death within the first two decades of life. Here, we report the case of a nine-year-old female patient suffered from syncope due to feeling fear or anxiety to enter crowded environments. She was examined and followed up by several other departments, however no significant improvement of her symptoms was observed and then referred to our clinic. Catecholaminergic polymorphic ventricular tachycardia was detected at the end of cardiac examinations and successfully treated with propranolol. In patients with recurrent syncope attacks and dizziness, rhythm disturbances should be kept in mind that if it occurs especially after effort or emotional stress.

Keywords: *Dizziness, Emotional stress, Syncope, Ventricular tachycardia*

ÖZET

Katekolaminerjik polimorfik ventriküler taşikardi, katekolaminerjik stres ile tetiklenen malign polimorfik ventriküler taşikardiler ile karakterize ve nadir görülen kalıtsal bir kardiyak kanalopatidir. Hastalar tipik olarak 20 yaşından önce fiziksel egzersiz sırasında veya duygusal stres ile senkop veya kardiyak arrest ile karşılaşırlar. Burada kalabalık ortamlara girmede endişe veya korku hissetmesinden dolayı senkop geçiren dokuz yaşında kız bir olgu sunulmuştur. Diğer bölümlerde incelemeleri ve takipleri yapılan, ancak semptomlarında belirgin bir iyileşme gözlenmeyen olgu kliniğimize yönlendirilmiştir. Kalp incelemeleri sonucunda katekolaminerjik polimorfik ventriküler taşikardi tanısı konulmuş ve propranolol ile başarılı bir şekilde tedavi edilmiştir. Özellikle duygusal stres veya efor sonrasında meydana gelen tekrarlayan senkop atakları veya baş dönmesi olan hastalarda ritim bozukluklarının akılda tutulması gereklidir.

Anahtar Kelimeler: Baş dönmesi, Duygusal stres, Senkop, Ventriküler taşikardi

INTRODUCTION

Catecholaminergic polymorphic ventricular tachycardia (CPVT) is a rhythm disorder that causes syncope and sudden death following exercise or emotional stress without underlying structural heart disease.(1) It was first described in the late 1970s. Its prevalence is estimated to be about 1/10000. Ventricular tachycardia, ventricular fibrillation, cardiac arrest and sudden death may be triggered by the causes that increase sympathetic stimulation.(2) However, as the cause of the complaints is attributed to other diseases, these cases are usually diagnosed late. It is often inherited through the RyR2 gene encoding the ryanodine receptor in the heart. It can also occur less frequently with a CASQ2 mutation encoding the calsequestrin gene, or sporadically.(3,4) In this article, we present a

nine-year-old patient who was diagnosed with CPVT and has been followed-up with propranolol treatment.

A nine-year-old female patient presented with complaints of dizziness, palpitations, and syncope that had developed after excitement and effort for approximately five months. In her anamnesis, she was afraid of fainting and also was afraid of playing games with her friends and going out to crowded environments and was not even going to school. Firstly, the patient applied to a psychiatrist because of social phobia. Sertraline and lorazepam treatment were started. At the same time, she was followed up by a pediatric neurologist, thinking that she had an epileptic attack. The patient was referred to us with no significant improvement in her complaints during follow-up. On physical examination, there was no pathological sound or murmur in her heart examination. Blood pressure was 110/70 mmHg and heart rate was 110 beats/min (bpm). Body weight was consistent with three percentiles. The other system examinations were all normal. There was no specific family history of syncope or sudden cardiac death. Baseline electrocardiographic (ECG) evaluation was normal; corrected QT interval was found to be normal and also there was no Brugada pattern. Echocardiographic examination revealed no structural or functional abnormalities. During the 24-hour holter ECG follow-up, catecholaminergic polymorphic ventricular tachycardia (CPVT) was considered primarily because bidirectional ventricular extrasystoles appeared and non-sustained bidirectional polymorphic ventricular tachycardia attacks were seen when the heart rate increased above 140 bpm. Syncope attacks after exertion were thought to be caused by possible cardiac arrhythmias due to catecholamine release. So CPVT was considered primarily and also the diagnosis was confirmed with exercise test. The test was terminated because of dizziness and ventricular ectopic beats were observed immediately after heart rate increased above 125 bpm during exercise test. Then, effective dosage of oral propranolol treatment was prescribed to her. During the follow-up it was learned that the symptoms and signs of patient were improved dramatically. She started to go to school, went out of the house more frequently, and had no dizziness or syncope attacks. Moreover, there was no more need for the drugs that she was taking before. Control holter ECG examination showed significant improvement and no significant arrhythmia was observed. The patient has been followed up with successful propranolol treatment for approximately six months.

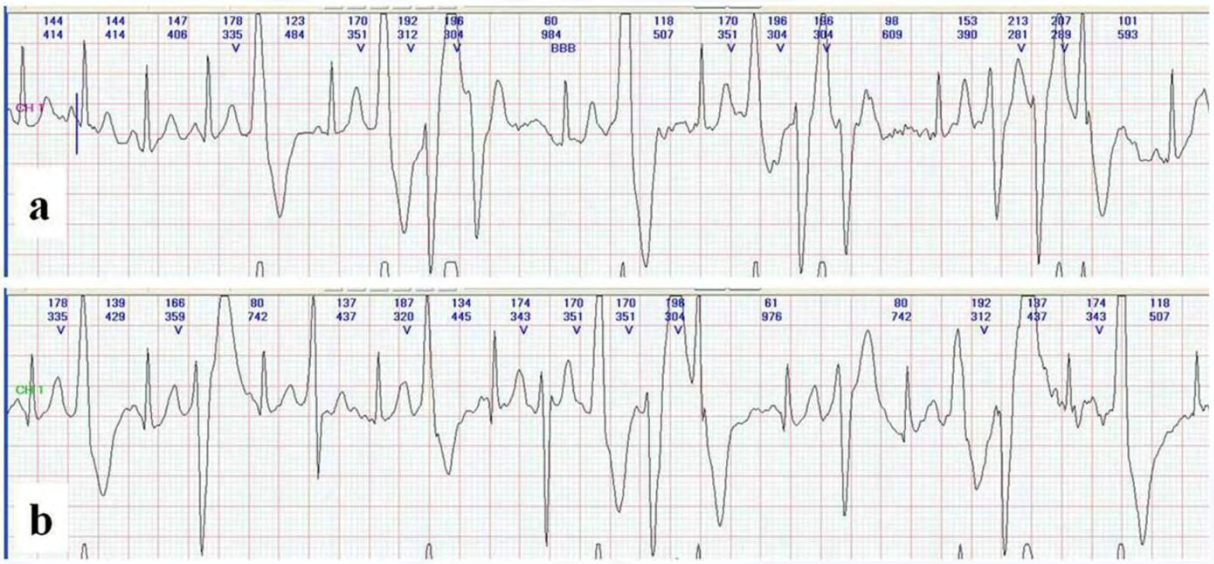


Figure 1. Bidirectional triplet (a) and quadruplet (b) ventricular extrasystoles (non-sustained polymorphic ventricular tachycardia)

DISCUSSION

Since it was first discovered in 1970's, catecholaminergic polymorphic ventricular tachycardia (CPVT) has been reported as a cause of syncope, ventricular arrhythmias and sudden cardiac death. Catecholaminergic polymorphic ventricular tachycardia typically manifests as syncope between 7 and 9 years of age, but sudden death may be the first presentation.(5) In 30% of CPVT patients, there is family history of sudden death before the age of forty.(6) The difficulty to recognize CPVT patients was reported by Roston et al (7), who found in a study on 226 CPVT patients that the establishment of diagnosis was approximately two years after the first symptomatic episode. In addition, more than 60% of patients received a missed diagnosis at the initial evaluation.(7) It has been shown that approximately 60% of patients with CPVT have RyR2 (Ryanodine type 2 receptor) gene mutations. Patients with RyR2 mutation become symptomatic earlier.(8) Catecholaminergic polymorphic ventricular tachycardia is associated with two genetic mutations; RyR2 and CASQ2. RyR2 is inherited in an autosomal dominant pattern and mediates the release of calcium from the sarcoplasmic reticulum that is required for myocardial contraction. The RyR2 mutation increases calcium release and can trigger life threatening ventricular arrhythmias. A second genetic form of CPVT, with an autosomal recessive inheritance, involves *mutations* in the *gene encoding* cardiac *calsequestrin* (*CASQ2*). The CASQ2 protein, which serves as the major calcium reservoir within the sarcoplasmic reticulum, has an ability to bind extremely large amounts of calcium. Mutations have also been reported in genes such as calmodulin1 (CALM1), triadine (TRDN) and SCN5A.(4)

Catecholaminergic polymorphic ventricular tachycardia can be difficult to diagnose, as ECG is normal in the absence of symptoms and echocardiography shows no specific findings. A typical finding on ECG is ventricular tachycardia with 180-degree alteration of the QRS axis (bidirectional tachycardia). Catecholaminergic polymorphic ventricular tachycardia is not inducible by programmed electrical stimulation. In patients suspected to have this disease, the arrhythmia must be recorded by holter monitoring or induced by exercise treadmill testing.(5) Lifestyle change should be recommended in the follow-up of the disease. Patients should avoid competitive sports, heavy exercise and stressful environments. When catecholaminergic polymorphic ventricular tachycardia is diagnosed, treatment should be planned on the basis of the patient's hemodynamic condition.(8) The focus of treatment is to suppress the adrenergic activity, therefore, beta-blockers are the most important drugs in the treatment of CPVT. Beta-blockers are effective for acute phase and maintenance treatment. Hayashi et al. (9) found that only five out of 81 patients with CPVT who had a mean follow-up of 7.9 years with beta blocker therapy had only fatal/non-fatal ventricular arrhythmias, and beta blocker treatment completely prevented recurrent arrhythmia attacks in the majority of patients. Implantable cardioverter defifrillator implantation and/or left cardiac sympathetic denervation is recommended if symptoms persist under medical treatment or if they have a polymorphic ventricular tachycardia attack. Flecainide is also an effective choice for arrhythmias developing under beta blocker treatment.(10)

Syncope or sudden cardiac death in childhood might occur due to other arrhythmogenic entities. These include arrhythmogenic right ventricular cardiomyopathy, Brugada syndrome, long QT syndrome, pre-excitation syndrome, commotio cordis, and Andersen-Tawil syndrome.(11,12) Any of these were not observed in our case. Our patient received an effective doseage of oral beta-blocker (propronalol) treatment and then no significant symptom or arrhythmia were detected during the follow-up.

In conclusion, rhythm disturbances should be considered in patients with recurrent syncope attacks. In the history, it should be questioned whether syncope attacks start with effort or emotional stress. Patients diagnosed with epilepsy or vasovagal syncope due to misdiagnosis may present with syncope as in our case or with sudden cardiac arrest as a result of adrenergic stimuli. Exercise stress test and holter ECG can be used in the diagnosis of these patients. Although catecholaminergic

polymorphic ventricular tachycardia can be rarely seen, it should be considered in the differential diagnosis of recurrent syncope attacks.

References

1- *Spears DA, Gollob MH, Genetics of inherited primary arrhytmia disorders. Appl Clin Genet 2015;8:215-33.*
2- *Reid DS, Tynan M, Braidwood L, Fitzgerald GR. Bidirectional tachycardia in a child. A study using His bundle electrography. Br Heart J 1975;37(3):339-44.*
3- *Laitinen PJ, Brown KM, Piippo K et al. Mutations of the cardiac ryanodine receptor (RyR2) gene in familial polymorphic ventricular tachycardia. Circulation 2001;103(4):485-90.*
4- *George CH, Higgs GV, Lai FA. Ryanodine receptor mutations associated with stress-induced ventricular tachycardia mediate increased calcium release in stimulated cardiomyocytes. Circ Res 2003;93(6):531-40.*
5- *Leenhardt A, Lucet V, Denjoy I, Grau F, Ngoc DD, Coumel P. Catecholaminergic polymorphic ventricular tachycardia in children. A 7-year follow-up of 21 patients. Circulation 1995;91(5):1512-9.*
6- *Tester DJ, Spoon DB, Valdivia HH, Makielski JC, Ackerman MJ. Targeted mutational analysis of the RyR2-encoded cardiac ryanodine receptor in sudden unexplained death: a molecular autopsy of 49 medical examiner/coroner's cases. Mayo Clin Proc 2004;79(11):1380-4.*
7- *Roston TM, Vinocur JM, Maginot KR et al. Catecholaminergic polymorphic ventricular tachycardia in children: analysis of therapeutic strategies and outcomes from an international multicenter registry. Circ Arrhythm Electrophysiol 2015;8(3):633–42.*
8- *Priori SG, Napolitano C, Memmi M et al. Clinical and molecular characterization of patients with catecholaminergic polymorphic ventricular tachycardia. Circulation 2002;106(1):69-74.*
9- *Hayashi M, Denjoy I, Extramiana F et al. Incidence and risk factors of arrhythmic events in catecholaminergic polymorphic ventricular tachycardia. Circulation 2009;119(18):2426-34.*
10- *Priori SG, Wilde AA, Horie M et al. HRS/EHRA/APHRS expert consensus statement on the diagnosis and management of patients with inherited primary arrhythmia syndromes: document endorsed by HRS, EHRA, and APHRS in May 2013 and by ACCF, AHA, PACES, and AEPC in June 2013. Heart Rhythm 2013;10(12):1932-63.*
11- *Gupta A, Lawrence AT, Krishnan K, Kavinsky CJ, Trohman RG. Current concepts in the mechanisms and management of drug induced QT prolongation and torsade de pointes. Am Heart J 2007;153(6):891-9.*
12- *Roden DM. Taking the "idio" out of "idiosyncratic": predicting torsades de pointes. Pacing Clin Electrophysiol 1998;21(5):1029-34.*

FT103

Is There a Relationship Between The Presence of Helicobacter Pylori Infection In Children and History of Gastric Complaints in Their Parents?

Melike Emiroğlu[1], Mehmet Akif Ağır[2], Meltem Gümüş[3], Halil Haldun Emiroğlu[3]

[1]Selcuk University Faculty of Medicine, Department of Pediatrics, Division of Pediatric Infectious Diseases

[2]Selcuk University Faculty of Medicine, Department of Pediatrics

[3]Selcuk University Faculty of Medicine, Department of Pediatrics, Division of Pediatric Gastroenterology, Hepatology and Nutrition

BACKGROUND

Helicobacter pylori (H.pylori) was declared to be a "first-degree carcinogen" by WHO in 1994. It is usually transmitted during infancy and does not cause any symptoms in some people. Although the transmission of H. pylori has not understood completely yet, the principal reservoir appears to be family members.

AİM

The purpose of this retrospective study was investigated to the relationship between the presence of H.pylori infection in children and their parental history of gastric complaints.

MATERIALS AND METHODS

612 children with gastric complaints (epigastric pain or dyspepsia), who underwent diagnostic esophagogastroduodenoscopy, were tested for H. pylori infection between 01.01.2012 and 31.12.2017. The diagnosis of H. pylori infection was made if histological examination was positive. The presence of gastric complaints in their parents was investigated. If there was no recorded knowledge about the history of gastric complaints in patient's parents, the child was excluded from this retrospective study. A total of 196 children (56 male, 140 female, average age 14.9 ± 3.5 years, median age 15.0 years, range 4–18 years) were included to the study for retrospective analysis.

The relationship between the presence of Helicobacter pylori infection in children and history of gastric complaints in their parents was reviewed retrospectively.

The SPSS 21.0 was used to analyse the statistical data. A p value <0.05 was considered an indication of statistical significance.

RESULTS

184 patients (93.9%) in 196 children had H. pylori infection. 106 of 196 (54.1%) children had parental history of gastric complaints.

H.pylori infection rate was similar in the children with parental history of gastric complaints compared without parental history of gastric complaints (98 of 106, 92.5% vs 86 of 90, 95.6%). The rate of parental history of gastric complaints was also similar in H. pylori-infected children compared non-infected children (98 of 184, 53.3% vs 8 of 12, 66.7%).

CONCLUSION

When their familial histories of gastric complaints were detected, it is not necessary for H.pylori screening to be conducted in all children if also without any gastric symptoms.

Key Words: *Helicobacter Pylori, Parents, Dyspepsia.*

INTRODUCTION

It is known that H. pylori can lead to many gastroduodenal inflammatory (gastritis, peptic ulcer) and neoplastic diseases (gastric mucosa-associated lymphoid tissue [MALT] lymphoma, gastric cancer) (1 – 3). H. pylori was declared to be a "first-degree carcinogen" by WHO in 1994. It is usually transmitted during infancy and does not cause any symptoms in some people (4, 5).

Although the transmission of H. pylori has yet to be fully understood, the principal reservoir appears to be family members (6 – 10).

The purpose of this retrospective study was to investigate the relationship between the presence of H.pylori infection in children and their parental history of gastric complaints.

MATERIAL AND METHODS

Patients

612 children with gastric complaints (epigastric pain or dyspepsia), who underwent diagnostic esophagogastroduodenoscopy, were tested for H. pylori infection between 01.01.2012 and 31.12.2017. The presence of gastric complaints in their parents was investigated. Age, gender, detailed endoscopic and histopathological reports of the patients were recorded on and processed by a computer. If there was no recorded knowledge about the history of gastric complaints in patient's parents, the child was excluded from this retrospective study. A total of 196 children (56 male, 140 female, average age 14.9 ± 3.5 years, median age 15.0 years, range 4–18 years) were included to the study for retrospective analysis. Among the 196 children, 184 whose endoscopy revealed H. pylori infection (55 boys, 129 girls), constituted the group infected with H. pylori. A total of 12 patients without H. pylori infection (1 boy, 11 girls) were included in the group of patients not infected with H. pylori.

Endoscopy and biopsy

During endoscopy, two biopsies were taken from the antrum and corpus, and stained with HE and Giemsa to identify H. pylori and histopathological changes. The diagnosis of H. pylori infection was made if histological examination was positive. In the event that histopathologic examination yielded negative results, the diagnosis was considered as H. pylori-negative.

Statistical analysis

IBM SPSS Statistics 21.0 was used to analyse the statistical data. Quantitative variables between the two groups (H.pylori infection and parental history of gastric complaints) were compared using the Mann Whitney U; qualitative parameters of the same groups were compared using Pearson's chi-square test and Fischer's exact test. All tests of statistical significance were two-sided with a p-value <0.05.

The relationship between the presence of H.pylori infection in children and history of gastric complaints in their parents was reviewed retrospectively.

RESULTS

Of the 196 children in the study, 184 patients (93.9%) had H.pylori infection. There was no significant difference between the rate of H.pylori infection and patient gender (p=0.185).

106 of 196 (54.1%) children had parents with history of gastric complaints. The rate of the parents with gastric complaints was similar among children with or without H. pylori infection (98 of 184, 53.3% vs 8 of 12, 66.7%). The difference between the rate of occurrence of H. pylori infection among children with and without history of parental gastric complaints was also insignificant (98 of 106, 92.5% vs 86 of 90, 95.6%) (p = 0.367) (Table 1).

DISCUSSION

The prevalence of H. pylori infection varies from country to country. In developed countries, the prevalence ranges from 10% to 16.7% in children (11, 12). The prevalence ranges from 9% to 78.6% among schoolchildren in developing countries (13, 14), and in Turkey it ranges from 43.9% to 64.4% (15, 16).

In epidemiological studies, noninvasive diagnostic methods (enzyme-linked immunoassay, the urea breath test with 13C-urea, the H. pylori stool antigen test) are widely used for the diagnosis of H. pylori infection since they are an appropriate method for use (17 –21). In our study, H. pylori infection was diagnosed by histopathological examination of antrum and corpus biopsy material obtained during diagnostic endoscopy.

Most adult patients acquire H.pylori infection during childhood, through various transmission pathways such as feco-oral, oro-oral or gastro-oral transmission (22). Intimate contact between the infected parents and their children provides a very important transmission route (23, 24). The highest incidence of contraction usually occurs up until the age of 4 years in both developed and developing countries, with incidence rates ranging from 2.1 to 11.7% and 14 to 26% in these countries, respectively (25 – 27). Some authors have demonstrated an increased prevalence of colonized children among parents infected with H.pylori (28 – 32). In our study, we observed similar rates of H.pylori infection positivity among children whose parents had history of gastric complaints compared to children whose parents had no history of gastric complaints.

CONCLUSION

This study showed that the prevalence of Helicobacter pylori is not higher among children with history of gastric complaints in their parents.

It is not necessary for all children with parental history of gastric complaints to be screened for H.pylori regardless of gastric symptoms in the patients themselves.

References

1- *Miwa H, Go MF, Sato N. H. pylori and gastric cancer: the Asian enigma. Am J Gastroenterol 2002; 97: 1106-1112.*
2- *Correa P, Houghton J. Carcinogenesis of Helicobacter pylori. Gastroenterology 2007; 133: 659-672*
3- *Wang C, Yuan Y, Hunt RH. The association between Helicobacter pylori infection and early gastric cancer: a metaanalysis. Am J Gastroenterol 2007; 102: 1789-1798*
4- *IARC. Working Group. IARC Monographs on the Evaluation of Carcinogenic Risk to Humans. Schistosomes, liver flukes and Helicobacter Pylori, Vol. 61. Lyon, France: IARC, 1994*
5- *Pelayo Correa. Helicobacter Pylori Infection and Gastric Cancer. Cancer Epidemiology, Biomarkers & Prevention. Vol. 12, 238s–241s, March 2003 (Suppl.)*
6- *Brown LM. Helicobacter pylori: epidemiology and routes of transmission. Epidemiol Rev 2000; 22: 283-297*
7- *Czinn SJ. Helicobacter pylori infection: detection, investigation, and management. J Pediatr 2005; 146: S21-S26.*
8- *Garg PK, Perry S, Sanchez L, Parsonnet J. Concordance of Helicobacter pylori infection among children in extended family homes. Epidemiol Infect 2006; 134: 450-459*
9- *Goodman KJ, Correa P. Transmission of Helicobacter pylori among siblings. Lancet 2000; 355: 358-362*
10- *De Schryver A, Van Winckel M, Cornelis K, Moens G, Devlies G, De Backer G. Helicobacter pylori infection: further evidence for the role of fecal-oral transmission. Helicobacter 2006; 11: 523-528*
11- *O'Donohoe JM, Sullivan PB, Scott R, et al. Recurrent abdominal pain and Helicobacter pylori in a community-based sample of London children. Acta Paediatr. 1996; 85: 961-4.*
12- *Yamashita Y, Fujisawa T, Kimura A, Kato H. Epidemiology of Helicobacter pylori infection in children: a serologic study of the Kyushu region in Japan. Pediatr Int. 2001; 43: 4-7.*
13- *Malaty HM, Kim JG, Kim SD, Graham DY. Prevalence of Helicobacter pylori infection in Korean children: inverse relation to socioeconomic status despite a uniformly high prevalence in adults. Am J Epidemiol. 1996; 143: 257-62.*

14- *Aguemon BD, Struelens MJ, Massougbodji A, Ouendo EM. Prevalence and risk-factors for Helicobacter pylori infection in urban and rural Beninese populations. Clin Microbiol Infect. 2005; 11: 611-7.*
15- *Yilmaz E, Dogan Y, Gurgoze MK, Unal S. Seroprevalence of Helicobacter pylori infection among children and their parents in eastern Turkey. J Paediatr Child Health 2002; 38: 183-6.*
16- *Selimoglu MA, Ertekin V, Inandi T. Seroepidemiology of Helicobacter pylori infection in children living in eastern Turkey. Pediatr Int 2002; 44: 666-9.*
17- *Fock KM, Katelaris P, Sugano K, Ang TL, Hunt R, Talley NJ, Lam SK, Xiao SD, Tan HJ, Wu CY, Jung HC, Hoang BH, Kachintorn U, Goh KL, Chiba T, Rani AA; Second Asia-Pacific Conference. Second Asia-Pacific Consensus Guidelines for Helicobacter pylori infection. J Gastroenterol Hepatol. 2009; 24: 1587-600.*
18- *Malfertheiner P, Megraud F, O'Morain C et al. Current concepts in the management of Helicobacter pylori infection: the Maastricht III Consensus Report. Gut 2007; 56: 772–81.*
19- *Perri F, Manes G, Neri M, Vaira D, Nardone G. Helicobacter pylori antigen stool test and 13C-urea breath test in patients after eradication treatments. Am. J. Gastroenterol. 2002; 97: 2756–62.*
20- *Gisbert JP, Pajares JM. Review article: C-urea breath test in the diagnosis of Helicobacter pylori infection – a critical review. Aliment. Pharmacol. Ther. 2004; 20: 1001–17.*
21- *Gisbert JP, Pajares JM. Stool antigen test for the diagnosis of Helicobacter pylori infection: a systematic review. Helicobacter 2004; 9: 347–68.*
22- *Rowland M, Daly L, Vaughan M, et al. Age-specific incidence of Helicobacter pylori. Gastro-enterology. 2006; 130: 65-72.*
23- *Ceylan A, Kirimi E, Tuncer O, Turkdogan K, Arıyuca S, Ceylan N. prevalence of Helicobacter pylori in children and their family members in a district in turkey J Health Popul Nutr 2007; 25: 422-427.*
24- *Escobar ML, Kawakami E. Evidence of mother-child transmission of Helicobacter pylori infection. Arq Gastroenterol. 2004; 41: 239-44.*
25- *Malaty HM, El-Kasabany A, Graham DY, et al. Age at acquisition of Helicobacter pylori infection: a follow-up study from infancy to adulthood. Lancet. 2002; 359: 931-5.*
26- *Glynn MK, Friedman CR, Gold BD, et al. Seroincidence of Helicobacter pylori infection in a cohort of rural Bolivian children: acquisition and analysis of possible risk factors. Clin Infect Dis. 2002; 35: 1059-65.*
27- *Ozen A, Ertem D, Pehlivanoglu E. Natural history and symptomatology of Helicobacter pylori in childhood and factors determining the epidemiology of infection. J Pediatr Gastroenterol Nutr. 2006; 42: 398-404.*
28- *Bujanover Y, Reif S, Yahav J. Helicobacter pylori and peptic disease in the pediatric patient. Pediatr Clin North Am 1996; 43: 213-34.*
29- *Drumm B, Perez-Perez GI, Blaser MJ, Sherman PM. Intrafamilial clustering of Helicobacter pylori infection. N Engl J Med 1990; 322: 359-63.*
30- *Malaty HM, Graham DY, Klein PD, Evans DG, Adam E, Evans DJ. Transmission of Helicobacter pylori infection studies in families of healthy individuals. Scand J Gastroenterol 1991; 26: 927-32.*
31- *Best LM, Veldhuyzen van Zanten SJ, Sherman PM, Bezanson GS. Serological detection of Helicobacter pylori antibodies in children and their parents. J Clin Microbiol 1994; 32: 1193-6.*
32- *Blecker U, Lanciers S, Mehta DI, Vandenplas Y. Familial clustering of Helicobacter pylori infection. Clin Pediatr 1994; 33: 305-6.*

Table 1. Distribution of parental history of gastric complaints in children infected and not infected with H. pylori

Parental history of gastric complaints (epigastric pain or dyspepsia)	Infected (n=184)		Non-infected (n=12)		P
	Number	%	Number	%	
Yes	98	53.3	8	66.7	0.367
No	86	46.7	4	33.3	

FT104

Investigation of The Presence of *Blastocystis* Spp. in Pediatric Patients Admitted To Our Hospital With The Diagnosis of Gastroenteritis

Gastroenterit Tanısı İle Hastanemize Başvuran Pediatrik Hastalarda *Blastocystis* Spp. Varlığının Araştırılması

Salih MAÇİN, Laman MUSAYEVA

Objective: The aim of this study was to investigate the prevalence of Blastocystis spp. in pediatric patients who have gastrointestinal complaints.

Materials and Methods: The parasitology data of pediatric patients who were sent to Selcuk University Medical Faculty Hospital Medical Microbiology Laboratory with the request of "stool parasite test" between October 2017 - October 2019 in Konya were retrospectively analyzed. The stool samples investigated for parasites by direct microscopic examination (iodine saline) and stool concentration methods.

Results:
Parasitic positivity was found in 739 (6,48%) out of 11393 stool specimens of pediatric patients. *Blastocystis* spp. was found in 233 (31.5%) of the positive samples. Of the pediatric patients who were positive for *Blastocystis* spp., 109 (46.7%) were male, 124 (53.2%) were female and 94.4% were polyclinics and 5.6% were service patients. In 66 cases (28.3%) only *Blastocystis* spp., in 165 (70.8%) *Blastocystis* spp. and *Entamoeba* spp., in one of the samples *Blastocystis* spp. and *Dientamoeba fragilis* (0.4%) and in one *Blastocystis* spp., *Entamoeba* spp. and *Dientamoeba fragilis* (0.4%) together was determined.
Conclusion: It was concluded that *Blastocystis* spp. and *Entamoeba* spp. were the most common parasitic agents and it was found that the patients infected with these parasites were mostly found in patients admitted to the Pediatric Emergency Department (48%). *Blastocystis* infections show different clinical picture in each patient. Some of the *Blastocystis* subtypes are thought to be pathogenic and some are non-pathogenic and therefore, new scientific studies are needed to determine the relationship between parasite and pathogenicity.

Keywords: *Blastocystis, gastroenteritis, pediatric patients*

Amaç:
Bu çalışmanın amacı gastrointestinal şikayetleri olan pediatrik hastalarda *Blastocystis* spp. prevalansını araştırmaktır.
Yöntem ve Gereç: Konya ilinde Ekim 2017 - Ekim 2019 tarihleri arasında Selçuk Üniversitesi Tıp Fakültesi Hastanesi, Tıbbi Mikrobiyoloji Laboratuvarına "gaita parazit tetkiki" istemi ile gönderilmiş olan çocuk hastalarının hastane laboratuvar işletim sistemindeki parazitoloji verileri retrospektif olarak incelenmiştir. Dışkı örnekleri parazitler için doğrudan mikroskobik inceleme (iyot salin) ve dışkı konsantrasyonu yöntemleriyle incelenmiştir

Bulgular:
Çocuk hastalara ait 11393 gaita örneğinden 739'ünde (%6,48) parazit pozitifliği saptanmıştır. Pozitif örneklerin 233'ünde (%31,5) *Blastocystis* spp. bulunmuştur. *Blastocystis* spp. pozitif pediatrik hastalarından 109'u (%46,7) erkek, 124'ü (%53,2) kız ve %94,4'ü poliklinik, %5,6'sı servis hastası olmuştur. *Blastocystis* spp. bulunan olguların 66'sında (%28,3) sadece *Blastocystis* spp., 165'inde (%70,8) *Blastocystis* spp. ile beraber *Entamoeba* spp., örneklerin birinde *Blastocystis* spp. ile

Dientamoeba fragilis (%0,4) ve birinde ise *Blastocystis* spp., *Entamoeba* spp. ve *Dientamoeba fragilis* (%0,4) birlikte saptanmıştır.

Sonuç:
Sonuçlarımıza göre, gastroenterit yakınması olan çocuklarda en sık rastlanan parazit etkenlerinin *Blastocystis* spp. ve *Entamoeba* spp. olduğu ve bu parazitlerle enfekte olguların daha çok Çocuk Acil kliniğine (%48) başvuran hastalarda saptandığı görülmüştür. *Blastocystis* enfeksiyonları Türkiyede önemli sağlık problemleri arasında devam etmektedir. Bu enfeksiyonlar semptomatik ve asemptomatik olarak her hastada farklı klinik tablo göstermektedir. *Blastocystis* alt tiplerinin bazılarının patojen, bazılarının ise non-patojen olduğu düşünülmektedir ve bu yüzden parazitin patojenitesi ile ilişkisini ortaya koymak için yeni bilimsel çalışmalara ihtiyaç vardır.

***Anahtar Kelimeler**: Blastocystis, gastroenterit, çocuk hastalar*

Introduction:
Intestinal parasites may cause asymptomatic infections or present with clinical complaints such as abdominal pain, flatulence, nausea and vomiting, loss of appetite, weight loss and diarrhea.
Blastocystis spp. *Giardia intestinalis, Cryptosporidium* spp. And *Entamoeba histolytica* are the most common protozoan parasites that causes gastroenteritis in children (1).
Blastocystis has a global distribution and has been reported to be the most common intestinal protozoan in human stool specimens in many studies (2). Fecal-oral transmission can occur either directly or by consuming food and drinks contaminated with feces (3). Disease caused by this parasite was named as Blastocystosis and it was found that the most common complaints were abdominal pain (39.3%), itching (36.1%) and diarrhea (3.3%) (4). There is a view that different serotypes may be pathogenic at different levels (5). Although, a large number of molecular techniques have been developed in order to identify subtypes (STs), a standard methodology has not yet been established. Human *Blastocystis* isolates are limited to STs 1–9 (6).
The aim of this study was to evaluate the distribution of *Blastocystis* spp. in pediatric patients who have gastrointestinal complaints in our hospital.

Materials and Methods:
A total of 11393 pediatric patients who were admitted to the Medical Microbiology Laboratory of Selcuk University Medical Faculty Hospital between October 2017 and October 2019 and asked for parasitic examination by the clinicians were evaluated retrospectively. The data obtained as a result of direct microscopic examination (iodine-saline) and LJ-200 Stool Analyzer device methods were evaluated together with the patients' **clinical information.**

Results:
Parasitic positivity was found in 739 (6,48%) out of 11393 stool specimens of pediatric patients who were examined in the last two years. *Blastocystis* spp. was found in 233 (31.5%) of the positive samples (Table 1).
Blastocystis spp. and *Entamoeba* spp. were detected together in 165 samples. The rate of cases infected with *Blastocystis* spp. alone was 66. Of the pediatric patients who were positive for *Blastocystis* spp., 109 (46.7%) were male, 124 (53.2%) were female and 94.4% were polyclinics and 5.6% were service patients. In one of the samples *Blastocystis* spp. and *Dientamoeba fragilis* (0.4%) and in one of them *Blastocystis* spp., *Entamoeba* spp. and *Dientamoeba fragilis* (0.4%) were determined together.

Blastocystis spp. positive specimens were mostly found in patients admitted to the Pediatric Emergency Department (48%),Outpatient Clinic for Child Health and Diseases (27,9) and Pediatric Gastroenterology, Hepatology and Nutrition Polyclinic (16,3) (Table 2).

Discussion:

According to our results, between 2017-2019 in children with gastroenteritis It was concluded that *Blastocystis* spp. and *Entamoeba* spp. were the most common parasitic agents and it was found that the patients infected with these parasites were mostly found in patients admitted to the Pediatric Emergency Department (48%). Clinical symptoms attributed to *Blastocystis hominis* include acute or chronic diarrhea, bloating, flatulence, abdominal cramps, and fatigue İn a study, more than 75% of the patients with GIS and dermatological complaints had medium to dense parasite densities in their stool samples respectively. This suggests a positive correlation between parasite density and GIS and dermatologic symptomatology (7).

Genetic diversity revisions have led to the identification of 17 subtypes (STs) within the *Blastocystis* genus, and 9 (ST1 to ST9) have been reported in humans with varying prevalence (8). İn another study, out of the 138 patients who had functional abdominal pain and *Blastocystis* , 37 patients did not receive any treatment (26.8%), while 101 received it and were treated with different antimicrobial agents (73.2%); regarding the improvement of symptoms, a statistically significant difference ($p<0.001$) was observed (9).

Conclusion:

Since the members of the genus revealed a large genetic diversity, several molecular modalities of subtyping methods have been developed. Although the pathogenic role of *Blastocystis* spp. in humans is still controversial, it is supposed to the presence of this parasite is associated with disorders gastrointestinal symptoms. Therefore, new scientific studies are needed to determine the relationship between parasite and pathogenicity.

References:

1. *Almeida IA, Jeske S, Mesemburg MA, Berne MEA, Villela MM. Prevalence of and risk factors for intestinal parasite infections in pediatric patients admitted to public hospitals in Southern Brazil. Rev Soc Bras Med Trop 2017; 50(6):853-6.*
2- *Stensvold CR, Clard CG. Molecular Identification and Subtype Analysis of Blastocystis. Curr Protoc Microbiol. 2016; 18;43:20A.2.1-20A.2.10.*
3- *Tan KSW. "New insights on classification, identification, and clinical relevance of Blastocystis spp." Clinical microbiology reviews 2008; 21(4): 639-65.*
4- *Ertuğ S, Malatyalı E, Ertabaklar H, et al. Aydın ilinde elde edilen Blastocystis izolatlarının alt tip dağılımı ve klinik semptomların değerlendirilmesi. Microbiyol Bul 2015;49: 98-104.*
5. *Fadime E. Blastocystis'in moleküler epidemiyolojisi. Dicle Med J 2015;42(4): 541-5.*
6. *Yoshikawa H, Iwamasa A. Human Blastocystis subtyping with subtype-specific primers developed from unique sequences of the SSU rRNA gene. Parasitol Int 2016;65(6): 785–91.*
7. *Tunalı V, Akdur Öztürk E, Ünver A, Turgay N. The Prevalance of Blastocystosis among Patients with Gastrointestinal and Dermatologic Complaints and Effects of Blastocystis spp. Density on Symptomatology. Turkiye Parazitol Derg 2018; 42(4): 254-7.*
8. *Toro Monjaraz EM, Vichido Luna MA, Montijo Barrios E et al. Blastocystis hominis and Chronic Abdominal Pain in Children: Is there an Association between Them? J Trop Pediatr 2018;64(4): 279–83.*
9. *Bogumiła Skotarczak. Genetic diversity and pathogenicity of Blastocystis. Ann Agr Env Med 2018;25(3): 411–6.*

Table-1.Distribution of *Blastocystis* spp. Positivity according to patients ages

Age grup	n (%)
0-6	87 (37.3)
6-12	51 (21.9)
12-18	95 (40.8
Total	233 (100)

Table-2. Rates of *Blastocystis* spp. infected cases sent by polyclinics and services.

Polyclinics and Services	N (%)
Pediatric Emergency Outpatient Clinic	112 (48)
Pediatric Health and Diseases Polyclinic and Service	65 (27.9)
Pediatric Gastroenterology, Hepatology and Nutrition Polyclinic and Service	38 (16.3)
Pediatric Infectious Diseases Polyclinic and Service	4 (1.7)
Pediatric Oncology Polyclinic and Service	2 (0.8)
Pediatric Nephrology Polyclinic and Service	2 (0.8)
Pediatric Cardiology Polyclinic	1 (0.4)
Pediatric Intensive Care Unit	1 (0.4)
Pediatric Allergy and Immunology Polyclinic	1 (0.4)
Pediatric Neurology Polyclinic	1 (0.4)
Pediatric Surgery Polyclinic	1 (0.4)
Anesthesiology and Reanimation Polyclinic	1 (0.4)
Total	233 (100)

The Chıld Who Crıes When She Smıles: A Cephalıc Tetanus Case Presentatıon

Zafer Bağcı, MD

Department of Pediatrics, Konya Education and Research Hospital, University of Health Sciences, Konya, Turkey

ABSTRACT

Introduction: Tetanus is a preventable infectious disease with vaccination. Cephalic tetanus is the rarest form in which local tetanus can involve the cranial nerves.

Case Report: In this case report, we aimed to evaluate a case of cephalic tetanus in a 16-month-old girl who had never been vaccinated and had an interesting clinical presentation.

Discussion: We believe that this is the first case reported in the literature of cephalic tetanus in such a young child wherein the disease originated from a wound on the cheek mucosa. The clinical symptom presented in this case could only be associated with this disease (a child who cries when she smiles).

Conclusion: In addition to detailed anamnesis and meticulous physical examination, the clinical symptoms that we have described for the first time in a child with cephalic tetanus should also be considered for early and accurate diagnosis.

Keywords: *Cephalic tetanus, child, cheek mucosa*

INTRODUCTION:

Tetanus is an infectious disease with high mortality rates; it progresses with tonic muscle spasms and is caused by exotoxin (tetanospasmin) of the anaerobic bacterium *Clostridium tetani*. Tetanus is a preventable disease; therefore, vaccination is vital for prevention. The risk of exposure in general population is high due to the prevalence of *C. tetani* spores in nature; spores usually enter the body through trauma and open injury[1-3].

Tetanus is divided into four clinical types: generalised, localised, cephalic and neonatal tetanus. Generalised tetanus is the most common form of the disease constituting 80% of the cases. Cephalic tetanus is the rarest form in which local tetanus can involve the cranial nerves. In two-thirds of the patients with cephalic tetanus, the disease may revert to the generalised form; mortality rate is 15%–20%[4]. In this case report, we aimed to evaluate a case of cephalic tetanus in a 16-month-old girl who had never been vaccinated and had an interesting clinical presentation with the disease development on a wound surface on the cheek mucosa; she was successfully treated as a result of early diagnosis.

CASE REPORT:

A 16-month-old girl from Somalia was brought to the emergency room of a training and research hospital in Somalia-Mogadishu with complaints of extreme restlessness, mouth sores, difficulty in feeding and constant crying. Patient history revealed that a wound developed in her mouth 2 weeks ago, she had been extremely restless for 2 days and had been crying constantly. Her salivation had increased; she had difficulty feeding because she could not close her mouth completely. Physical examination revealed a mucosal erosion of 5 mm in diameter on the inner surface of the right cheek as well as rigidity in both the jaw and neck muscles. Interestingly, during the examination, it was found that as soon as the child smiled at her mother, risus sardonicus developed on her face and she started crying (Figure 1). This clinical symptom occurred every time the child smiled at her mother. Therefore, it created the impression of a ‘child who cries when she smiles’. Findings of other physical examinations, such as complete blood count, electrolyte levels, urinalysis, chest X-ray and head and neck computed tomography of the patient, were all within normal limits. Detailed

anamnesis from the mother revealed that the child had never been vaccinated against tetanus; the mother had seen the child playing with soil about a week ago and the soil had been removed from her mouth. Based on patient history and clinical findings, the patient was diagnosed with cephalic tetanus. After 0.5 ml tetanus vaccine and 250 IU tetanus immunoglobulin (HTIG) administration, the patient was hospitalised in the paediatric clinic, penicillin was intravenously administered and metronidazole treatment was initiated. Midazolam was given intermittently for sedation. After 10 days of treatment in a room with light and sound isolation, the patient was discharged with full recovery.

DISCUSSION:

Tetanus results from inadequate immunisation and is considered a problem characteristic of failed public health systems[5]. The national vaccination program was insufficient in the Somalia region where our patient lived; He was never vaccinated against tetanus. Crushing and penetrating injuries and infected surgical wounds that facilitate anaerobic bacterial growth create a favourable environment for tetanus toxin production[6]. Cephalic tetanus usually develops after craniofacial injury and sometimes during the course of otitis media[5,7]. Cephalic tetanus cases of dental origin and the ones associated with stomatitis have also been previously reported[8,9]. In our case, it is highly probable that the entry site for the tetanus spores was the wound on the right cheek mucosa, which was contaminated by the soil ingested into the mouth by the patient. To the best of our knowledge, this is the first case reported in the literature in which tetanus developed due to a wound on the cheek mucosa.

Cephalic tetanus is a rare form of localised tetanus defined as paralysis of one or more cranial nerves along with the trismus. It accounts for 1%–3% of the total number of reported tetanus cases[10]. Approximately two-thirds of cephalic tetanus cases progress to generalised tetanus with poor prognosis. Prognosis is good in patients who have not progressed to generalised tetanus. In our patient, signs and symptoms were limited with bilateral facial nerve palsy and involvement of the jaw and neck muscles. Our patient did not progress to generalised tetanus because of early diagnosis and immediate treatment.

Treatment for cephalic tetanus is the same as that for generalised tetanus. The treatment aims to eliminate toxin production and involves antitoxin administration, active immunisation and supportive care. In our patient, we performed vaccination and HTIG administration and initiated intravenous penicillin and metronidazole treatment. In addition to light and sound isolation, intermittent midazolam treatment was used for sedation. The patient's clinical signs and symptoms gradually improved; she was discharged with full recovery after 10 days of treatment.

Cephalic tetanus is a rare type of tetanus; it is unique because it is characterised by muscle spasms and paralysis. Early diagnosis is very important because the disease can transform into its generalised form[10]. This is the first case reported in the literature in terms of being cephalic tetanus seen in such a young child and that the disease originated from a wound on the cheek mucosa; the case presenting with a clinical symptom that can only be associated with this disease (a child who cries when she smiles).

CONCLUSION:

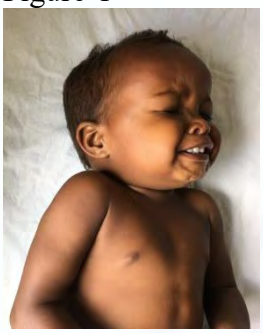
In patients with cephalic tetanus, cranial nerve palsy accompanying trismus may make early and accurate diagnosis extremely difficult. In addition to detailed anamnesis and meticulous physical examination, the clinical symptom that we have described for the first time in a child with cephalic tetanus should also be considered for early and accurate diagnosis.

ACKNOWLEDGMENT:
The patient's parents has signed in her native language the consent form for the figure that discloses her face. The author declares that there are no conflicts of interest. The assistance of all who took part in the care of the patient is gratefully acknowledged.

References:

1- *Cook TM, Protheree RT, Handel JM. Tetanus: a reviev of the literatüre. Br J Anesth 2001;87:477-87.*
2- *Topçu AW, Söyletir G, Doğanay M. Infectious diseases and microbiology. Nobel Bookstore: Istanbul; 2002:1043-1049.*
3- *Bleck TP. Clostridium tetani (Tetanus). In: Mandell GL, Bennet JE, Dolin R, editors. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Disease. 6th ed. Philadelphia: Elsevier, Churchill Livingstone; 2005. p. 2817-22.*
4- *Edlich RF, Hill LG, Mahler CA et al. Management and prevention of tetanus. J Long Term Eff Med Implants 2003;13(3):139-54.*
5- *Alhaji MA, Abdulhafiz U, Atuanya CI et al. Cephalic Tetanus: A Case Report. Case Reports in Infectious Diseases. 2011:2.*
6- *Ataro P, Mushatt D, Ahsan S. Tetanus: a review. South Med J. 2011;104:613-617.*
7- *Ogun OA, Ashaye AO, Oba SO. Cephalic tetanus: a case report of a rare complication of orbito-ocular injury in a Nigerian. Nigerian Journal of Ophthalmology 2005;13(1):32-35.*
8- *Burgess, JA et al. Report of Cases: Reviewing Cephalic Tetanus. The Journal of the American Dental Association. 1992;123(7):67-70.*
9- *Bernardes M, Lo Presti S, Ratzan K. 2018. A case of cephalic tetanus in an elderly patient with trismus. Case Rep Infect Dis;1247256:1-3.*
10- *Jagoda A, Riggio S, Burguieres T. Cephalic tetanus: a case report and review of the literatüre. American Journal of Emergency Medicine 1988;6(2):128-130.*

Figure-1



Tetanic spasm of the patient.

FT106

Trombosit Transfüzyonunda Trombosit Sayısı ile Trombosit Kitlesi Kullanımının Karşılaştırılması

Ahmet ÖKTEM,Ahmet ÖZYAZICI,Ayşegül ZENCİROĞLU

TC Sağlık Bakanlığı, SBÜ, Ankara Dr. Sami Ulus Kadın Doğum ve Çocuk Sağlığı,Hastalıkları EAH, Yenidoğan Kliniği

Amaç:

Yenidoğanlarda transfüzyon amaçlı en sık kullanılan ikinci kan ürünü trombosit süspansiyonlarıdır. Yenidoğan yoğun bakım birimine başvuran hasta bebeklerin yaklaşık %20-35'inde trombositopeni saptanmaktadır. Trombosit sayısının 150 000/µL 'nin altında olması trombositopeni, olarak tanımlanır. Erken başlangıçlı trombositopeninin(Yaşamın ilk üç gününde gelişen) en sık nedenleri maternal preeklampsi,maternal diyabet, IUGR, perinatal enfeksiyonlar, perinatal asfiksi, maternal allo- ya da oto-antikorların transplasental geçişi neden olurken geç başlangıçlı trombositopeniye(Yaşamın ilk üç gününden sonra gelişen) en sık postnatal enfeksiyonlar ve NEK neden olmaktadır.Ciddi trombositopenisi olan yenidoğanlarda en korkulan komplikasyon major kanama, esas olarak da intrakranial kanamalardır. Transfüzyon öncesi yenidoğanların kan grubu tiplendirmesi ve anne kaynaklı pasif geçiş gösteren antikorlar açısından tarama yapılmalıdır.

Trombositopeni tedavisinde kullanılan trombosit süspansiyonları donörlerin tam kanından ayrılan havuzlanmış trombosit süspansiyonu veya aferez trombosit süspansiyonu olarak hazırlanmaktadır.Trombosit süspansiyonu hazırlarken lökosit filtrasyonu ile alloimmünizasyon ve enfeksiyon sıklığı azaltılır. Yine ışınlama yapılarak GVHH gelişime riski azaltılmaktadır. Donör taraması ve seroloji testleri normal, ABO ve Rh uyumlu trombosit süspansiyonu 10-20 ml/ kg dozunda uygulanır. Trombosit transfüzyonu için ayrı bir damar yolu kullanılmalı, yavaş infüzyon hızı ile başlanıp, reaksiyon gelişmediği takdirde infüzyon hızı arttırılarak 1 saat içinde tamamlanmalıdır. Trombosit transfüzyonu ile ilgili en önemli riskler enfeksiyon, alloimmünizasyon, ateş, hemolitik ve alerjik reaksiyonlardır. Trombosit transfüzyonlarında, trombosit süspansiyonunun oda ısısında saklanmasına sekonder olarak bakteriyel enfeksiyon riski diğer kan ürünlerine göre fazladır. Trombosit süspansiyonları platelet aktive edici faktör gibi biyoaktif faktörler içerdiği için inflamasyonu arttırabilir. Yine çoklu trombosit süspansiyonu transfüzyonunun artmış mortalite ile de ilişkili olduğu gösterilmiştir.

Tanımlayıcı nitelikte olan bu çalışmada, Sağlık Bilimleri Üniversitesi (SBÜ) Ankara Dr. Sami Ulus Kadın Doğum, Çocuk Sağlığı ve Hastalıkları Sağlık Uygulama ve Araştırma Merkezi (SUAM) yenidoğan kliniğinde yatarak izlenen hasta popülasyonu incelenmiştir. Çalışmamızda; Transfüzyon sonrası gelişen komplikasyonların, Preterm ve term bebekler arasında TS kullanım sayısı, sıklığı, klinik tanılar, endikasyon ve komplikasyon açısından Türk Neonatoloji Derneği Kan Ürünleri Transfüzyon Rehberine uygun olarak transfüzyon standardizasyonu protokolünün oluşturulması için değerlendirilmesi amaçlandı.

Yöntem:

Ocak2017-Aralık2017 arasında yenidoğan yoğun bakım servisimizde kanama, ciddi trombositopeni ve/veya majör cerrahi öncesi gibi endikasyonlarla trombosit transfüzyonu yapılan 47 (27E,20K) hasta ve 2018 Ocak-2019 Ocak ayları arasında trombosit transfüzyonu yapılan demografik bilgileri benzer 39 vaka (19K,20E) çalışmaya alındı. Hasta sonuçlarına Microsoft Windows tabanlı çalışan Statistical Package for Social Sciences version 18.0 (SPSS inc. Chicago, Illinois, USA) paket

programı kullanılarak tanımlayıcı ve analitik istatistikler yapıldı. P değerinin 0,05'in altında olması istatistiksel anlamlılık için eşik değer olarak kabul edildi.

Bulgular:
47 hastanın ortalama gebelik yaşı 36±1 hafta (25-42 hf), ortalama DA 2829±70 gr.(600-4400gr)idi.Transfüzyon öncesi trombosit sayısı ortalaması 42.978/µL,(4.000-98.000) ve transfüzyon sonrasıtrombosit ortalaması 116.170/ µL, (20.000-339.000) olarak tespit edildi. Hastalarda mortalite %32di.
Transfüzyon endikasyonları üçana başlıkta toplandı:
1)Trombosit < 20.000µL: Kanama yok(6/47)
2)Trombosit <50.000µL: Kanama,koagülopati, <1500g ve <7 gün (21/47)
3)Trombosit >100.000µL: Major kanama,cerrahi öncesi/sonrası (20/47)
39 hastanın ortalama gebelik yaşı 37 ±1 hafta (27-41 hf), ortalama DA 2963±50 gr.(720-4350 gr)idi.Transfüzyon öncesi trombosit sayısı ortalaması 38.840 /µL,13.000-125.000) ve transfüzyon sonrası trombosit ortalaması 122.160/ µL, (40.000-256.000)di. Hastaların 29/39(%74) unda transfüzyon trombosit kitle indeksi(TKİ) transfüzyon endikasyonları ile uyumlu iken 10/39 (%26) hastada değildi. Ancak bu 10 hasta preoperatif dönem konjenital kalp hastası ve diyafram hernisi bulunan vakalar olduğu için trombosit sayısı 100000/ µL üzerinde tutulması amaçlanmıştı. Hastalarda mortalite %28di. Cerrahi hastalarda TKİ sırası ile 800, unstabil veya invaziv girişim uygulanacak hastalarda TKİ sırası ile 400 ve stabil bebeklerde TKİ sırası ile 160 üzerinde tutulması hedeflenmiştir.
Her iki grupta hastalarımızın tanıları arasında acil cerrahi gerektiren KKH, sepsis ve DİK, NEK ve böbrek yetmezliği bulunmaktaydı. Tanılar açısından anlamlı fark bulunmamaktadır. (p>0.05)
Sonuç:
Aktif kanaması olan ve ciddi trombositopenisi bulunan yenidoğanlarda trombosit süspansiyonunun yararı tartışılmaz olsa da, günümüzde sıklıkla ciddi trombositopenisi olan hastalarda major kanamaların önlenmesi amacı ile profilaktik trombosit transfüzyonu uygulanmaktadır. Ancak hasta yararı gözetilirken transfüzyon komplikasyonları akılda tutulmalıdır. Son yıllarda trombosit sayısı yerine trombosit kitlesine bakılarak bu değerin sırası ile 800, 400 ve 160'ın üzerinde olması hedeflenmiş ve böylece profilaktik trombosit uygulama sıklığının azaltılabileceği bildirilmiştir.

Tablo: Türk Neonatoloji Derneği trombosit transfüzyonu için önerilen eşik trombosit değerler

<20.000/µL	Tüm bebekler
20.000-49.000/µL	<1000 gram ADDA'lı bebek* Hasta bebek Eşlik eden koagülopati Ciddi morbidite (evre 3-4 IVK, NEK, sepsis) İnvaziv girişim Minör kanama
50.000-100.000/µL	Aktif/major kanama DİK Preoperatif/postoperatif
>100.000/µL	ECMO Nöroşirürji operasyonları

* Özellikle stabil olmayan, invaziv girişim uygulanan, trombosit fonksiyonlarını etkileyebilecek ilaç uygulanan ve <1 haftalık bebeklerde artmış IVK riski nedeni ile.

Genel bir kural olarak, trombosit sayısının kanaması olmayan ve klinik olarak stabil bebeklerde >20.000/µL (trombosit kitlesi >160 fl/nl), stabil olmayan ya da invaziv girişim uygulanacak bebekler ile ADDA'lı bebeklerde >50.000/µL (trombosit kitlesi >400 fl/nl), kanaması olanlarda ise 50.000-100.000/µL olması önerilmektedir. Yine trombosit süspansiyonu kan merkezinden transfüzyondan hemen önce istenmelidir ve gelir gelmez transfüzyona başlanmalıdır. Transfüzyon öncesi, sırası ve sonrası vital bulguların takip edilmesi önem arzetmektedir.

Bu çalışmada ikinci grup hastada TKİ kullanılarak tronmbosit transfüzyonu yapılmıştır. Ancak 10 hastada TKİ değeri 800 üzerinde olmamasına karşın major cerrahi operasyon endikasyonu nedeniyle trombosit transfüzyonu tercih edilmiştir. Benzer hasta grupları üzerinde yapılan değerlendirmede trombosit transfüzyon sayısında anlamlı bir azalma görülmemektedir.

Günümüzde trombosit transfüzyonlarının büyük çoğunluğu profilaktik olarak uygulanmakta olup, bu yaklaşımın yarar ve zararları tartışmalıdır. Bu nedenle, belirtilen eşik trombosit sayılarına ve hastanın klinik durumuna göre transfüzyonun gerçekleştirilmesi, transfüzyon sıklığının azaltılması ve olası komplikasyonların önlenmesi amaçlanmalıdır. Trombosit sayısı yerine trombosit kitlesi kullanımı için daha fazla çalışmaya ihtiyaç duyulmaktadır.

Kaynaklar:

1. *Çetinkaya M, Atasay B, Perk Y. Turkish Neonatal Society guideline on the transfusion principles in newborns. Turk Pediatri Ars. 2018 Dec 25;53.*
2. *Christensen RD, Henry E, Wiedmeier SE, Stoddard RA, Sola-Visner MC, Lambert DK, Kiehn TI, Ainsworth S. Thrombocytopenia among extremely low birth weight neonates: data from a multihospital healthcare system. J Perinatol 2006;26:348–353.*
3. *Sola MC, Del Vecchio A, Rimsza LM. Evaluation and treatment of thrombocytopenia in the neonatal intensive care unit. Clin Perinatol 2000;27:655–679.*
4. *Christensen RD. Advances and controversies in neonatal ICU platelet transfusion practice. Adv Pediatr 2008;55:255–269.*
5. *Wiedmeier SE, Henry E, Sola-Visner MC, Christensen RD. Platelet reference ranges for neonates, defined using data from over 47,000 patients in a multihospital healthcare system. J Perinatol 2009;29:130–136.*
6. *Slichter SJ. Relationship between platelet count and bleeding risk in thrombocytopenic patients. Transfus Med Rev 2004;18:153–167.*
7. *Blajchman MA, Slichter SJ, Heddle NM, Murphy MF. New strategies for the optimal use of platelet transfusions. Hematology Am Soc Hematol Educ Program 2008:198–204.*
8. *Kline A, Mackley A, Taylor SM, McKenzie SE, Paul DA. Thrombopoietin following transfusion of platelets in preterm neonates. Platelets 2008;19:428–431.*
9. *Murray NA, Howarth LJ, McCloy MP, Letsky EA, Roberts IA. Platelet transfusion in the management of severe thrombocytopenia in neonatal intensive care unit patients. Transfus Med 2002;12:35–41.*
10. *Baer VL, Lambert DK, Henry E, Snow GL, Sola-Visner MC, Christensen RD. Do platelet transfusions in the NICU adversely affect survival Analysis of 1600 thrombocytopenic neonates in a multihospital healthcare system. J Perinatol 2007;27:790–796.*
11. *Andrew M, Vegh P, Caco C, Kirpalani H, Jefferies A, Ohlsson A, Watts J, et al. A randomized, controlled trial of platelet transfusions in thrombocytopenic premature infants. J Pediatr 1993;123:285–291.*
12. *Del Vecchio A, Sola MC, Theriaque DW, Hutson AD, Kao KJ, Wright D, Garcia MG, et al. Platelet transfusions in the neonatal intensive care unit:factors predicting which patients will require multiple transfusions. Transfusion 2001;41:803–808.*
13. *Garcia MG, Duenas E, Sola MC, Hutson AD, Theriaque D, Christensen RD. Epidemiologic and outcome studies of patients who received platelet transfusions in the neonatal intensive care unit. J Perinatol 2001;21:415–420.*

FT107

Pediatric Headache: A Single Center Experience

Hülya Kayılıoğlu[1], İbrahim Önder Yeniçeri[2], Özlem Yayıcı Köken[3],

[1]Muğla Sıtkı Koçman University Research and Training Hospital, Department of Pediatric Neurology, Muğla, Turkey

[2]Medical Faculty of Muğla Sıtkı Koçman University, Department of Radiology, Muğla, Turkey

[3]SBU, Dr. Sami Ulus Research and Training Hospital, Department of Pediatric Neurology, Ankara, Turkey

Keywords: *Pediatric headache, migraine, tension-type headache, secondary headeche, red flags*

Introduction

Headaches, which are one of the most frequent causes of admission to pediatric neurology clinics, are rarely associated with a serious medical condition and have been classified as primary and secondary headaches by the International Headache Association (1) The third subset includes neuropathies, facial pain and other headaches.

Primary pediatric headache disorders include migraines, migraine variants, tension-type headaches, and the trigeminal autonomic cephalalgias. Several etiologies have been defined for secondary headaches in children. The International Classification of Headache Disorders, 3rd Edition (ICHD-3), broadly categorizes secondary headaches into the following: headaches due to trauma, headaches due to cranial or cervical vascular disorders, headaches attributable to nonvascular intracranial disorders, headaches attributable to substance abuse or withdrawal, headaches due to infection, headaches due to disorders of homeostasis, headaches/facial pain due to disorders of the head or facial structures, and headaches due to psychiatric disorders. Considering the general diagnostic criteria for a secondary headache, the temporal relationship between headache onset and the presumed cause should be defined. Specifically, the headache should worsen in relation to the underlying cause and/or improve with treatment or resolution of the presumed cause and have characteristics typical for the disorder (1).

The existence of a secondary cause needs to be ruled out in children and adolescents by using physical examination and laboratory techniques. Using a bundle which consists of blood tests and cranial imaging in every patient with a headache due to medicolegal concerns causes loss of resources and time. In addition, false positive test results and incidental findings increase medical cost and time loss. For this reason, it is necessary to increase the experience of clinicians with studies conducted in pediatric patient populations presenting with a headache.

Material and Methods

This retrospective, descriptive, single-center study was conducted at the department of Pediatric Neurology of Muğla Sıtkı Koçman Research and Training Hospital, Muğla, Turkey. One hundred sixty (n:160) children (93 boys and 67 girls) between 6 and 18 years of age who were admitted to the pediatric neurology clinic with a headache between June 2018 – June 2019 were evaluated for the study.

A participant was excluded if he or she or a parent: 1) was unwilling to participate in this study, 2) had incomplete hospital records.

In our clinic, headaches are classified according to the International Classification of Headache Disorders proposed by the Committee of the International Headache Society, 2017 (IHS) (1). Classification of the patients were made by type of primary headaches (migraine, tension-type, cluster and other), etiology of secondary headaches (attributable to trauma or injury to the head or neck, cranial or cervical vascular disorders, sudden drug cessation or withdrawal, infections, disorders of homeostasis or headache or facial pain attributable to other facial and cervical

structures). Also, age, gender, patient and family medical history, initial headache such as duration, location, duration of episodes, cranial MRI and EEG findings (if applied) were recorded.
Cranial MRI results were classified as normal or abnormal. EEGs were classified as normal or epileptic abnormalities
Twenty red flags were evaluated if asked or recorded; systemic symptoms, history of neoplasm, neurologic deficit or dysfunction, sudden or abrupt onset, pattern change or recent onset of headache, positional headache, precipitated by sneezing, coughing, exercise, or Valsalva maneuver, papilledema, vomiting, progressive headache, painful eye with autonomic features, posttraumatic onset of headache, immunocompromised child or adolescent, painkiller overuse or new drug at onset of headache, onset under 3 years old, atypical presentation, comorbid seizures, consistently worse in the morning, existence of a visual aura, headache awakening from sleep at night (2,3). .

Statistical Analyses

Data analyses were performed by using SPSS for Windows, version 22.0 (SPSS Inc., Chicago, IL, United States). Kolmogorov-Smirnov test was used to determine whether the distribution of continuous variables was normal or not. Levene's test was used for the evaluation of homogeneity of variances. Continuous data were described as mean ± SD. Categorical data were described as number of cases (%).

Results

A total of 160 children and adolescents (93 boys, 58.1 %) were included in the study. Ninety-three (58.1 %) had primary and 67 (41,9 %) patients had secondary headache. The average age of the patients with a primary and secondary headache was 141,5 ± 38,3 and 115,1 ± 38,8 months, respectively (p: 0,018). Family history for primary headache was positive in 36.3 % (n:58) of the patients. Family history for primary headache was positive in 53,7 % (n:50) of the primary headache group and 11,9 % (n:8) of the secondary headache group (p<0,001).
All the patients were admitted to the hospital within the first three years from the onset of symptoms. 25 % (n:40) of total were admitted to the hospital in the first month from the onset of symptoms. 10,6 % of all the patients (n:17) were admitted initially to the emergency service.
Episodic headaches (50 %) are the most frequent type of headaches. Three (1,9 %) patients had chronic progressive, 36 patients (22.5 %) had acute (with a duration of less than a month) while 41 (25,6 %) patients had chronic non-progressive headaches.
Forty-eight percent (n:78) of the 93 (58,1%) patients who were diagnosed with a primary headache had tension type headaches. Migraine was detected in 71 (23,1%) of the patients. Only 3 (1,9%) patients had chronic daily headaches.
Secondary headaches were found in 41,9% of the patients and 80% (n:31) of these had infectious causes which could be treated with antibiotics. Rhinosinusitis was the most frequent cause in this group (n:22). Two (1,3%) of the patients had a secondary headache attributable to nonvascular intracranial disorders (one neurofibromatosis and one hydrocephalus secondary to a intracranial mass). 1 patient had a toothache and one patient had bruxism which means 1,3% of the patients had a headache attributable to head, neck and other facial structures. A pediatric psychiatry consult was deemed necessary for 7 (4,4%) patients and the headache was attributed to psychiatric reasons.
Red flags which indicate secondary headaches were present in 7,4% (n:12) of all patients however, 6 of these patients were diagnosed with a primary headache. Ten of 12 patients with red flags had more than one red flag. As a result, 12 patients had a sudden or abrupt onset (duration less than a month), 8 patients had vomiting, 6 patients had systemic symptoms (fever, weight loss, sweating), 4 patients had a headache awakening from sleep, 3 patients had a pattern change or recent onset of headache, 3 patients had progressive headaches, 3 patients had atypical presentations, 2 patients were consistently worse in the morning, 1 patient had neurologic deficits or dysfunction (abnormal neurologic

examination findings including movement disorders, decreased consciousness and confusion), 1 patient had a positional headache, 1 patient had a headache which was precipitated by sneezing, coughing, exercise or Valsalva maneuver and 1 patient had papilledema. Headache localization was as follows: 50,6% (n:81) frontal, 7,5% (n:12) occipital, 7,5% (n:12) frontotemporal, 15,6% (n:25) not localized. No distinct localization could be defined in 30 patients. 6 patients in the primary headache group and 6 patients in the secondary headache group had at least 1 red flag.

Cranial MR imaging was performed in 26,3% (n:42) of the patients and was found to be within normal limits in half of the patients. The most frequent pathologic finding in the cranial MR imaging was rhinosinusitis with various localizations (n:21). One patient was diagnosed with neurofibromatosis and one patient was diagnosed with an intracranial mass as a result of cranial MR imaging.

Epileptic activity was detected in the EEG 2 of 31 patients with episodic, atypically presenting headaches accompanied with auras, who were diagnosed with childhood epilepsy.

Discussion

Headache is a common neurological disorder seen in pediatric patients and can have both primary and secondary etiologies. Diagnosis, management and treatment of headaches have been defined by international protocols and clinicians need to evaluate clinical features in order to detect pathologies which require urgent treatment.

Headaches are a major health concern in the United States in both adult and pediatric patients. The median age of onset is 7,5 years [1,2], and it is estimated that by 15 years of age, 57–82% of children will have had a headache of any type (4). In school-age children, boys tend to be more affected than girls, whereas there is a female preponderance after the onset of puberty (5). The number of boys who were admitted with a headache was greater than the number of girls in our study group where average age was 14,2.

Primary headaches, as expected, were more frequent than secondary headaches. Tension headaches were observed in 48,8% (n:78) of the 93 (58,1%) patients who were diagnosed with a primary headache. The incidence of migraine was lower (23,1%, n:37). No patients were diagnosed with TCA. This distribution is concordant with the literature (4,5).

Various causes have been detected as etiologies of secondary headaches and 80% (n:31) were infectious causes which could be treated with antibiotics. However, contrary to the literature, life threatening intracranial pathologies were detected only 1,9% of the cases.

There was no statistically significant difference concerning the number of red flags indicating intracranial pathologies requiring urgent treatment between the primary and secondary headache groups. Six patients in the primary headache group and 6 patients in the secondary headache group had at least one red flag. This indicates that there was no correlation between the number of red flags and the severity of the clinical situation.

Neuroimaging was performed for approximately ¼ of the group and rhinosinusitis was detected in half of these patients. Epileptic activity in EEG was observed and a diagnosis of epilepsy was made in two of the 160 patients who were admitted with headaches.

Headaches are more frequent than believed or reported where clinicians can easily estimate the type using history and physical examination and can plan advanced laboratory tests in the presence of red flags. Our study aims to present demographic and clinical features of children and adolescents who were admitted to a single center with headaches in a one-year period and thus enrich the literature on this frequently observed symptom.

Referanslar

1- *Olesen J. From ICHD-3 beta to ICHD-3. Cephalalgia. 2016 Apr;36(5):401-2. doi: 10.1177/0333102415596446. Epub 2015 Jul 10.*

2- *Yonker M. Secondary Headaches in Children and Adolescents: What Not to Miss. Curr Neurol Neurosci Rep. 2018 Jul 30;18(9):61. doi: 10.1007/s11910-018-0865-z.*

3- *Lewis DW, Ashwal S, Dahl G, et al. Practice parameter: evaluation of children and adolescents with recurrent headaches. Report of the Quality Standards Subcommittee of the American Academy of Neurology and the Practice Committee of the Child Neurology Society. Neurology 2002; 59:490 – 498*
4- *Straube A, Heinen F, Ebinger F, von Kries R. Headache in school children: prevalence and risk factors. Dtsch Arztebl Int 2013; 110:811 – 818.*
5- *Gallelli L, Iannacchero R, De Caro E, et al. A questionnaire-based study on prevalence and treatment of headache in young children. J Headache Pain 2005; 6:277 – 280.*

FT108

A Dysrhythmia Rarely Seen in Acute Rheumatic Fever: Mobitz Type 1 2nd-Degree AV Block

Emin Ünal[1], Mehmet Burhan Oflaz[1], Celal Gür[1], Muhammed Güneş[1], Hüseyin Yılmaz[1], Fatih Şap[1], Bülent Ataş[2], Tamer Baysal[1]

[1] Necmettin Erbakan University. Department of Child Health and Diseases, Department of Cardiology. Konya, Türkiye.

[2] Necmettin Erbakan University. Department of Child Health and Diseases, Department of Nephrology. Konya, Türkiye.

Özet

Akut romatizmal ateşin (ARA) en önemli bulgusu kardittir. ARA'da akut dönemde birçok ritim bozukluğu görülebir. Mekanizma tam olarak bilinmese de toksemiye bağlı vagal tonus artışının en sık neden olduğu düşünülmektedir. ARA'da görülen kalp blokları antienflamatuar tedaviye iyi yanıt verir. Nadiren geçici veya kalıcı pacemaker ihtiyacı olur. Akut romatizmal ateşin sık görüldüğü ülkelerde, AV blok olan hastalarda ARA'nın düşünülmesi gerektiği vurgulanmaktadır. Bu nedenle ülkemiz koşullarında açıklanamayan EKG anormallikleri varlığında kapak tutulumu saptanmasa bile ARA akılda tutulmalıdır.

Anahtar kelimeler: *Akut romatizmal ateş, Mobitz tip 1 AV blok*

Abstract

The most important finding of acute rheumatic fever (ARF) is carditis. Several dysrhythmias may develop during acute phase of ARF. Although the exact mechanism is unknown, increased vagal tonus due to toxemia is thought to be the most common cause. Cardiac blocks seen in ARF respond well to anti-inflammatory treatment. It rarely requires a transient or permanent pacemaker. It has been highlighted that ARF should be suspected in patients with an AV block in countries where acute rheumatic fever is common. Thus, ARA should be considered in presence of unexplained ECG abnormalities, even if there is no valvular involvement, in our country.

Keywords: *Acute rheumatic fever, Mobitz type 1 AV block*

Introduction

Acute rheumatic fever is a nonsuppurative inflammatory connective tissue disease that occurs following a throat infection caused by Group A beta-hemolytic streptococci (1). The most important major finding of the disease is carditis. Rheumatic cardiac disease, which is a complication of carditis, is an important public health issue in developing countries (2). Carditis seen in acute rheumatic fever is pancarditis. In association with pancarditis, conduction pathways may be affected (3). First-degree antrioventricular block is among minor modified Jones criteria. However, an association between several dysrhythmias and ARF has been demonstrated in the literature (4). In this manuscript, a case in which there was a complete regression of 2nd-degree AV block after steroid treatment in a patient diagnosed with ARF is reported.

Case Report

Acute phase reactants were determined to be elevated in work-ups requested from orthopedics outpatient clinic of our hospital where he admitted due to joint swelling and pain firstly in left ankle, followed by left and right knees that began five days ago. After septic arthritis was discarded, the

patient was referred to pediatric cardiology outpatient clinic as he mentioned about having had a throat infection about ten days ago.

The 15 year-old patient who was evaluated in pediatric cardiology outpatient clinic, who was conscious and whose general condition was fine and vital signs were stable had arrhythmic heart sounds, with a 1-2/6 systolic murmur on cardiac apex. Circumference of the right knee was 0.5 cm larger than the left one and there was increased heat on the right knee. On the electrocardiogram (ECG), Mobitz type 1 2nd-degree AV block with a ventricular rate of 79/min was detected (figure 1). On echocardiographic examination, there were mild mitral regurgitation and 1st-degree aortic regurgitation. Left ventricular systolic functions were normal. In the laboratory work-up white blood cell count (12.200/mm3), acute phase reactants (erythrocyte sedimentation rate 72 mm/hour), C-reactive protein 206,39 mg/L) and anti-streptolysin-O titer (420 IU/mL) were determined to be high.

Acute rhematic fever and carditis were considered and the patient was hospitalized. Cardiac monitorization and absolute bed rest were recommended. Benzathine penicillin G (1,200,000 İU, intramuscular) was administered and prophylactic administration at every 21 days was recommended. After other etiologies of arthritis were discarded, steroid (prednisolone) treatment was initiated. Daily ECG monitoring was performed. By the second day of the treatment articular complaints regressed; at the third day the AV block was resolved and sinus rhythm was begun to be observed. Five days after initiation of steroid treatment, there was a regression of acute phase reactants in control blood tests. After prednisolon was administered at a full-dose for 2 weeks, the steroid treatment was gradually reduced and then discontinued; at the final week of reduction, acetylsalicylic acid was added to the treatment. The overall treatment was completed in 8 weeks and then discontinued. In the holter examination performed before discharge no ectopic beats, pauses or blocks were observed. In the control visit after 6 months, ECG was on sinus rhythm and there was no significant change in valvular regurgitations.

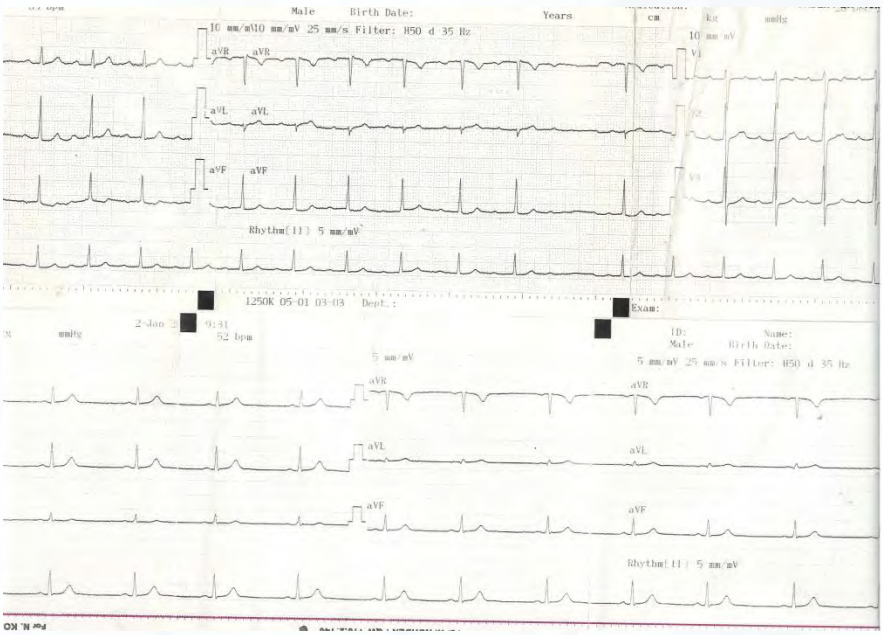


Figure 1. Electrocardiographic examination of the patient at the time of diagnosis and at 3rd day of steroid treatment

Discussion

Apart from first-degree AV block; electrocardiographic abnormalities including second-degree AV block, AV complete block, bundle blocks, sinus tachycardia, atrial or ventricular premature beats,

accelerated nodal rhythm, supraventricular tachycardia, junctional and ventricular tachycardia, prolonged QT duration and "torsades de pointes" can also be seen in acute phase of ARF (5). Although the exact mechanism is unknown, increased vagal tonus due to toxemia is thought to be the most common cause (6). It has also been suggested that a myocardial inflammation involving the AV node or a vasculitis involving the AV nodal artery can also cause development of conductional abnormalities (7).

Heart blocks seen in ARF tend to be self-limiting, they do not become chronic and respond well to anti-inflammatory treatment (5, 7). Although advanced-degree AV block is a finding of cardiac involvement, it is not associated with vasculities. Furthermore, it does not have a prognostic significance (8). Rarely a transient pacemaker is required in patients with syncope or those who are hemodynamically instable; there are reported cases for which a permanent pacemaker was placed in the literature, although rare (9). In our patient who we were found to have 2nd-degree type 1 AV block on ECG, normal sinus rhythm was observed by the third day of steroid treatment and no additional treatment was required for AV block.

It has been highlighted that ARF should be considered in differential diagnoses of patients with first-degree or Mobitz type 1 AV block in countries where acute rhematic fever is common, even in absence of evidence of arthritis or carditis (5). Although there is no definite data regarding incidence of the disease in our country, it is thought to have similar incidence with that of Middle Eastern and Mediterranean countries (25-100/100,000) (10). In our country, in a study conducted in Konya, 3.4% of the patients admitted to department of pediatric cardiology were diagnosed with ARF (11). Thus, ARA should be considered in presence of unexplained ECG abnormalities, even if there is no valvular involvement, in our country.

References

1- *Eroğlu AG. Update on diagnosis of acute rheumatic fever: 2015 Jones criteria. Turk Pediatri Ars 2016; 51: 1-7.*
2- *Narin N, Mutlu F, Argun M, et al. Incidence and clinical features of acute rheumatic fever in Kayseri, Central Anatolia, 1998-2011. Cardiol Young 2015; 25: 745-51.*
3- *Karacan M, Işıkay S, Olgun H, Ceviz N. Asymptomatic rhythm and conduction abnormalities in children with acute rheumatic fever: 24-hour electrocardiography study. Cardiol Young 2010; 20: 620-30.*
4- *Aylan Ö, Özdemir Ö, Cihan G, Demirkan D. Atriyoventriküler tam blok ve presenkop atağı ile başvuran akut romatizmal ateş olgusu. T Klin Kardiyoloji 2003, 16: 103-106.*
5- *Güvenç O, Ergül Y. Akut romatizmal ateşte nadir görülen bir durum: Mobitz tip 1 II. derece AV blok. Çocuk Sağlığı ve Hastalıkları Dergisi 2017; 60: 16-18*
6- *Clark M, Kieth JD. Atrioventricular conduction in acute rheumatic fever. Br Heart J 1971;33 : 12-5.*
7- *Balli S, Oflaz MB, Kibar AE, Ece I. Rhythm and conduction analysis of patients with acute rheumatic fever. Pediatr Cardiol 2013; 34: 383-389.*
8- *Cristal N, Stern J, Gueron M. Atrioventricular dissociation in acute rheumatic fever. Br Heart J 1971 ; 33 : 12-5.*
9- *Poudel CM, Gajurel RM, Barkoti M, Acharya SM, Anil OM. Complete heart block in acute rheumatic fever. Nepalese Heart Journal 2012; 9: 56-58.*
10- *Köksal AÖ, Soylu A, Özdemir Ö. Akut romatizmal ateş. Türkiye Çocuk Hastalıkları Dergisi 2016; 4: 283-296.*
11- *Karaaslan S, Oran B, Reisli I, Erkal I. Acute rheumatic fever in Konya Turkey. Pediatr Int 2000 ; 42 (1) : 71- 5.*

FT109

Bir Çocuk Hastanesi Yoğun Bakım Ünitesinde İzlenen Zehirlenme Olgularının Değerlendirilmesi

Dr. Emine Polat, Dr. Hüsniye Yücel

SBÜ Dr. Sami Ulus Kadın Doğum Çocuk Sağlığı ve Hastalıkları SUAM

GİRİŞ

Zehirlenme, hayatı tehdit etme potansiyeli olan zehirli bir maddenin yanlışlıkla veya intihar amaçlı alınması olgularını tanımlamak için kullanılmaktadır. İlaç ve kimyasal maddelere bağlı zehirlenmeler çocuklarda mortalite ve morbiditenin önemli bir nedenidir. Tüm yaş gruplarında gözlenebilse de, çocuklarda daha sık görülür ve ölümcül seyredebilir.

Olguların çoğunluğu 5 yaşın altında ve adolesan dönem olmak üzere iki dönemde pik yapar. İlk dönemde küçük çocukların çevreyi merak etme ve yürümeye başlamaları evdeki ilaçlar veya kimyasal maddeleri istem dışı yoldan alma riskini arttırır ve bu vakalar genelde kaza ile olmaktadır. Diğer zirve dönemi olan adölesanlarda ise madde bağımlılığı veya istemli kendine zarar verme daha ön plandadır.

Toplumların sosyokültürel düzeyinin artmasına bağlı olarak enfeksiyon ve malnutrisyonla ilişkili hastalıklardan ölüm oranları azalırken zehirlenme çocuklarda önemli bir ölüm riski olarak kalmaktadır. Gelişmiş ülkelerde çocuk ölümlerinin %2'si, gelişmekte olan ülkelerde %5'den fazlası zehirlenmelere bağlıdır. Bölgesel farklılıklar görülmekle birlikte, özellikle gelişmekte olan ülkelerde zehirlenme olgularında artış gözlenmiştir.

Türkiye'de akut zehirlenmelere ilaçlar, ev kimyasalları, zehirli gazlar, yemek ve bitki kimyasalları ve zehirli hayvanlar tarafından ısırılmalar sebep olmaktadır. Ulusal zehir danışma merkezi (UZEM) verilerine göre evde kazayla alınan ev içi hazırlanmış ürünler, kozmetik ve temizlik ürünleri veya bitkiler en sık zehirlenme sebepleridir.

UZEM' in verilerine göre; Tıbbi yardım gerektiren sebepler için de en sık olan ağızdan farmasötik ajan alımıdır. En sık maruz kalınan madde ise insan sağlığı ürünleri olarak rapor edilmiştir. Zehirlenme etkenleri çoğrafi bölgeye, mevsimlere, toplumun gelenek ve göreneklerine, yaş grubuna ve sosyo-kültürel düzeye göre farklılıklar gösterir. Uygun korunma ve tedavi yöntemlerinin geliştirmesi, sağlık personeli eğitimi ve toplumun bilinçlendirilmesi için her bölgenin kendi epidemiyolojik verilerini belirlemesi ve güncellemesi gereklidir.

Zehirlenme olgularının yoğun bakım izlemleri ile ilgili çalışmalar kısıtlı sayıdadır. Bu çalışmada; hastanemiz yoğun bakım ünitesinde takip edilen zehirlenme olgularının geriye dönük olarak değerlendirilmesi amaçlandı.

MATERYAL VE METOD

SBU Dr. Sami Ulus Kadın Doğum, Çocuk Sağlığı ve Hastalıkları SUAM, Pediatrik yoğun bakım ünitesine 2008-2013 yılları arasında akut zehirlenme nedeniyle başvuran 154 hastanın kayıtları geriye dönük olarak incelendi. Demografik özellikler, zehirlenme türü ve nedeni (özkıyım veya kaza), tedavi yöntemleri ve hastaların sonuçları gözden geçirildi.

BULGULAR

Çalışma döneminde zehirlenme ile izlenen toplam hasta sayısı 154 idi. Ortalama hasta yaşı 8,7 yıl (dağılım: 0,5-17 yıl) idi. Hastaların çoğunluğunu kadınlar oluşturmaktaydı ve kadınların oranı % 58,4; erkeklerin oranı % 41,6'ydı. Tablo 1' de yaş grupları dağılımı görülmektedir.

Hastaların % 56.5'de zehirlenme kaza nedenli gerçekleşirken % 43.5 deözkıyım nedenli idi. Hastalarımızın % 98'i şifa ile iyileşti. Üç hasta kaybedildi.

Tablo 1: Yaş grupları dağılımı

Yaş aralığı (yıl)	Sayı	Yüzde
0-4	51	33.1
5-9	31	20.1
10-14	25	16.3
14-17	47	30.5

Tablo 2: Yatış süreleri dağılımı

Yatış süresi (gün)	Sayı	Yüzde
0-1	64	41.5
1-3	47	30.5
3-5	35	22.8
5->	8	5.2

Tablo 3: Zehirlenme etkenleri

Zehirlenme etkeni	Sayı	Yüzde
Trisiklik antidepresan	24	14.6
Antidepresan-antipsikotik	9	5.8
Parasetamol	23	14.9
Kolşisin	9	5.8
Antihipertansifler	12	7.8
Çoklu ilaç zehirlenmesi	19	12.3
CO zehirlenmesi	11	7.2
Anti epileptikler	10	6.5
Diğer ilaçlar	37	24

Tablo 4: Tedavi uygulamaları

Tedavi	Sayı	Yüzde
Aktif kömür-gastrik lavaj	126	81.8
Aktif kömür	2	1.3
Gastrik lavaj	7	4.5
Hiperbarik oksijen	6	3.9
Uygun antidot	8	5.2
Plazma exchange	1	0.6
Diğer tedaviler	4	2.6

TARTIŞMA

Zehirlenmeler çocukluk çağının sık görülen ve önlenebilir morbidite ve mortalite nedenleri arasındadır. Gürültülü ve/ veya sinsi semptomlarla seyretmesi, klinikte hızlı bozulmaya yol açması, ölümcül olabilmesi nedeniyle yoğun bakım ünitelerinde sık olarak tedavi edilmektedir.

UZEM'in 2008 yılı çalışma raporunda Türkiye'deki tüm zehirlenme olgularının yaklaşık %60'ının 18 yaş altında olduğu bildirilmiştir. İntihar amaçlı zehirlenmeler 15- 19 yaş grubunda daha fazla iken 2-3 yaş çocuklarda ise kaza ile zehirlenmelerin daha sık olduğu belirtilmiştir.

Ülkemizde yapılan zehirlenme ile ilgili çalışmalarda 0-5 yaş ve adölesan yaş grubunda iki pik yaptığı bildirilmiştir. Çalışmamızda da benzer şekilde hasta sayısının 2-4 yaş ve 14-16 yaş arasında daha fazla olduğu görüldü. Cinsiyet dağılımına baktığımızda kızların oranı daha yüksekti. Hastaların %41,6'i (64) erkek iken, %58,4'ü (90) kız idi.

Olgularımızın zehirlenme nedenlerine göre dağılımı değerlendirildiğinde en çok kaza nedenli zehirlenmeler (%56,5) saptandı.Literatürde çocuklarda yapılan pek çok çalışmada kız çocuklarında intihar amaçlı zehirlenmeler, erkek çocuklarında ise kaza ile zehirlenmeler daha sık görülmektedir. Bu çalışmada da intihar amaçlı zehirlenmelerin kızlarda daha yüksek olduğu saptandı.

UZEM'in 2008 yılı çalışma raporuna göre çocukluk yaş grubunda tek ajan ile zehirlenme oranı % 66.42, çoklu ilaç ile zehirlenme oranı ise %33.58 olarak bildirilmiştir. Çalışmamızda çoklu ilaç zehirlenme oranı %12.3 olarak bulunmuştur. Türkiye'de yapılan çalışmalarda ise zehirlenme olgularının hastanede yatış süreleri 12 saat ile 25 gün arasında değişmektedir. Bu çalışmada hastaların yatış süreleri 1-8 gün arasında değişmekteydi ve % 72' si 3 gün yatırılmıştı.

Ülkemizde çocuk zehirlenme olgularının değerlendirildiği çalışmalarda zehirlenme etkenlerinin ilk sırasında genellikle ilaçlar yer almaktadır. Trisiklik antidepresan grubu ilaçlar, parasetamol ve çoklu ilaç zehirlenmeleri bizim çalışmamızda yüksek oranda tespit edildi.

Ülkemizde zehirlenme olgularının izleminde UZEM'in önerileri ile tedavi planı yapılmaktadır. Hastaların klinik bulgularına ve etken maddeye göre tedavi planı yapılmakla birlikte en sık aktif kömür ve gastrik lavaj uygulanmaktadır. Aktif kömür ilk 1 saat içinde kullanılırsa etkilidir. Nazogastrik sonda ile direk mideye verilmesi ve ya ağızdan alınması önerilir. Aspirasyon açısından dikkatli olunmalıdır.

Mortaliteyi etkileyen en önemli faktörler hastanın yaşı, hastaneye getiriliş zamanı, toksik maddenin cinsi ve miktarıdır. Gelişmiş ülkelerde zehirlenmelerde mortalite oranı %1 iken, gelişmekte olan ülkelerde %1.8 ile %11.6 arasında değişen yüksek oranlar bildirilmektedir. Çalışmamızda 3 hasta kaybedildi. Yüksek doz Ca kanal blokeri+ACE inhibitörü ve kolşisin alımı sonrası erken dönemde kaybedilen iki hasta suicid amaçlı iken; bir hastamız CO zehirlenmesi sonucu kaza ile gerçekleşmişti.

SONUÇ

Çocukluk çağı zehirlenmeleri hastaneye başvuruların en sık nedenlerinden biridir. Zehirlenmelerin çoğunu ilaçlar özellikle antidepresanlar oluşturur. Zehirlenmenin erken fark edilmesi ve uygun tedavi yaklaşımları hayat kurtarıcıdır. Aile eğitimi, ilaçların çocukların ulaşamayacağı yerlerde saklanması, reçetesiz ilaç satılmaması ve güvenli kapakların kullanılması gibi koruyucu önlemler önemlidir.

Kaynaklar

1- *Tortorolo L. Acuteintoxicationandpoisoning in children: theexperience of a tertiary-carehospitalfrom 2001-2012. Signavitae: journalforintesivecareandemergencymedicine. 2015;10(2.):3-0.*
2- *Jepsen F, Ryan M. Poisoning in children. Curr Pediatr. 2005;15:563-8.*
3- *Lozano R, Naghavi M, Foreman K, Lim S, Shibuya K, Aboyans V, et al. Global andregionalmortalityfrom 235 causes of deathfor 20 agegroups in 1990 and 2010: a systematicanalysisforthe Global Burden of DiseaseStudy 2010. TheLancet. 2013;380(9859):2095-128.*
4- *Kelebek F, Satar S, Kozacı N, Acıkalın A, Gulen M, Acehan Acil Servise Başvuran Pediatrik Zehirlenme Olguları. TheJournal Of AcademicEmergencyMedicineJaemArticle in Press doi:10.5152/Jaem.2013.005.*
5- *Hoikka M, Liisanantti J, Dunder T. Acutepoisoning in childrenundertheage of six: a two-decadestudy of hospitaladmissionsandtrends. Actapaediatrica. 2013;102(7).*
6- *Nurhan ÖZCAN, Didem İKİNCİOĞULLARI Ulusal Zehir Danışma Merkezi 2008 Yılı Çalışma Raporu Özeti Türk Hij. Den. Biyol. Derg. 2009; 66 (3) Ek 3*
7- *Özcan N, İkincioğulları D. Ulusal zehir danışma merkezi 2008 yılı çalışma raporu Özeti. Türk Hij Den BiyolDerg. 2009;66(Özel Sayı 3):29-58.*

8- *Nazan Ülgen Tekerek, Adem Dursun, Başak Nur Akyıldız Çocuk Yoğun Bakım Ünitesinde Takip Edilen Zehirlenme Olgularının Geriye Dönük Değerlendirilmesi J Pediatr Emerg Intensive Care Med 2016;3:21-6*
9- *Dilek Aygin1, Hande Açıl1 Çocuk Acil Ünitesine Başvuran 0-18 Yaş Arası Zehirlenme Olgularının İncelenmesi TheMedicalBulletin of Şişli EtfalHospital, Volume: 48, Number 1, 2014; 27-33*
10- *Resul Yılmaz, Süleyman Ekrem Albayrak, Ali Gül Retrospective Evaluation of Poisoning CasesTreated at PediatricIntensiveCareUnit Pediatr PractRes 2017; 5(2):19-26*

FT110

The Awareness of Family Physicians About Cocooning Strategy

Gökce Celep[1] MD,PhD, Aysu Duyan Çamurdan[2] MD,Professor

[1] Amasya University Medical Faculty, Sabuncuoğlu Şerefeddin Education and Research Hospital, Department of Paediatrics, Amasya

[2] Gazi University Medical Faculty, Department of Community Pediatrics, Ankara, Turkey

Sabuncuoğlu Şerefeddin Education and Research Hospital, Merkez/Amasya/ TURKEY

AMAÇ:
Aşılama pratiğinde koza stratejisi "herhangi bir nedenle kendisi aşılanamayan duyarlı bireylerin çevresindekileri bağışıklayarak onları enfeksiyonlardan korumak" olarak tanımlanır. Etkin aşılama yanıtının henüz oluşmadığı bebeklerin, bağışıklığı baskılanmış bireylerin yakın çevresindeki kişiler aşılanarak enfeksiyon hastalıklarının bu duyarlı bireylere bulaşması önlenir. Günümüzde daha çok küçük bebeklerin influenza ve boğmacadan korunması için uygulanmaktadır. Aslında sağlık personeli ve toplu ortamlarda çalışanları da içeren daha kapsamlı bir kavramdır. Bu çalışmada amaç, aile hekimlerinin koza stratejisi hakkındaki farkındalığının değerlendirilmesidir

YÖNTEM:
Çalışma Orta Karadeniz'de küçük bir il merkezinde aile hekimlerine yönelik olarak planlandı. Elektronik posta yoluyla uygulanan anket içeriğinde sosyodemografik özellikler kayıt edildi ve "koza uygulaması" tanımlandı, hekimlerin bu konuda farkındalık ve tutumları soruldu.
Veriler SPSS v15.0 (Chicago, IL).istatistik programıyla değerlendirildi, tanımlayıcı istatistikler, ki-kare, Fisher Exact test, Mann Whitney U testleriyle analiz edilerek sunuldu. P<0,05 değeri istatistiksel olarak anlamlı kabul edilid.

BULGULAR:
Çalışmaya 35'i kadın (%36,4), 62'si erkek (%63,6); yaşları 25-61 arasında değişen (ortalama 39,70±7,70; ortanca: 40 yıl) 97 aile hekimi katıldı. Katılımcıların %47,5'i (n=46) koza stratejisi hakkında yeterli bilgiye sahip olmadıklarını belirttiler. Bu uygulamanın yararlı olduğunu düşünen hekimlerin oranı %16,5 (n=16) idi. Hekimlerin yaklaşık %60'ı konuyla ilgili olarak uzman görüşüne başvurmak istediklerini bildirdi.

SONUÇ:
Koza uygulamaları aşıyla önlenebilir hastalılıklara duyarlı; ancak aşılanamayan bireyler için önemli bir korunma aracıdır. Bağışıklama hizmetlerinin sahadaki kaptanları olan aile hekimlerinin konu hakkındaki farkındalık ve bilgilerinin arttırılması küçük bebekler kadar risk gruplarındaki erişkinler, gebeler ve yaşlılar içinde yararlı olacaktır. Maliyet ve klinik etkinliğin sağlanması için birey, hastalık, aşı ve uygulama zamanlaması açısından kişiye veya gruba özel takvim oluşturmak gereklidir. Bu çalışmanın sonuçlarına göre aile hekimlerinin büyük kısmı koza uygulamaları konusunda çekimserdir. Uygulanacak eğitimler farkındalık ve uygulama sıklığının artışına katkıda bulunacaktır.

Anahtar sözcükler: *Koza stratejisi, aile hekimi, bağışıklama*

AIM:
In vaccination practice cocooning strategy is defined as "immunizing the close contacts of the vulnerable individuals who cannot be vaccinated for any reason to protect them from vaccine preventable diseases". It is usually applied for the protection of young infants from influenza and pertussis. In fact it is a more comprehensive concept that includes healthcare workers and people working in crowded settings. The aim of this study was to evaluate the awareness of family physicians about cocooning strategy.

METHODS:
The study was conducted in a small provincial centre in the Middle Black Sea region of Turkey. It was designed for family physicians based on surveys. In the questionnaire via e-mail, sociodemograhic features were recorded and "cocooning strategy" was defined, the awareness and attitudes of the physicians were asked.
Statistical analysis was performed using SPSS v15.0 (Chicago, IL). Data were presented with descriptive statistics and analyzed by chi-square, Fisher Exact and Mann-Whitney-U tests. A p-value of less than 0.05 was considered statistically significant.

RESULTS:
Thirty-five women (36.4%) and 62 men (63.6%) from a total of 97 family physicians aged between 25-61 years old participated to the study. Forty-six (47.4%) of the participants stated that their knowledge about cocooning strategy was insufficient and the rate of physicians who thought that this application as beneficial was 16.5 %(n=16). Approximately 60% of the doctors stated that they needed expert consultation in case of cocooning decision.

CONCLUSION:
Cocooning strategy is important to prevent vaccine preventable diseases of vulnerable individuals. Raising awareness and knowledge of family physicians, who are the captains of immunization in the field, will be beneficial for adults in risk groups, pregnant women and the elder population as well as young babies. In order to ensure cost and clinical effectiveness, it is necessary to create a personal or group-specific schedule in terms of individual, disease, vaccination and timing of administration. According to the results of this study, most of the family physicians are abstained about cocooning applications. Trainings will contribute to increase awareness and frequency of implementation.

Key words: *Cocooning strategy, family physician, immunization*

INTRODUCTION

"Cocooning" is a word which means to protect someone or something from danger or harm by surrounding it with a protective layer. In public health, it is a strategy to protect the vulnerable individuals from infectious diseases indirectly by reducing the possibility of infection (1). The target population to be protected is under risk of severe infections, but cannot be vaccinated for some reasons such as immunsupression, continuing treatments, pregnancy or being too young to have vaccination or active immunization response. To be a vaccination strategy, it means to administer vaccines to the close contacts of the susceptible population to protect them from vaccine preventable diseases (1). In practice, the term "cocooning" is usually used for the pertussis and influenza protection of the neonates and young infants younger than 6-12 months. The centre of the cocoon is the infant and the components are the baby's household contacts, healthcare workers; all people spending time with the baby. Pertussis and influenza are both droplet borne infections that can be severely complicated in young infants, resulting in high morbidity and mortality with long hospital and intensive care unit stay. By immunizing the close contacts of the infants we protect them from

pertussis or influenza so that transmission of the infection is prevented. The prevalence of the infection is reduced and contribution to eradication efforts is provided through herd immunity (1, 2). The Global Pertussis Initiative recommends adolescent vaccination, immunization during pregnancy and cocooning as the appropriate control strategies to control pertussis (3). Maternal immunization and cocooning are also valid for influenza (1)

The immunity to pertussis does not last lifelong either by natural infection or immunization (4, 5). Pertussis immunization coverage is high, but in the first six months of life since the baby has not or just has completed the primary vaccination series of diphtheria, pertussis, tetanus (DTaP), immune response is not efficient to protect the baby from acute infections; in addition maternal antibodies providing passive immunization wane (6-8) . Influenza immunization can be implemented after the sixth month, at the earliest, so the first six month of life becomes challenging for lower respiratory tract infections. To get rid of this problem two strategies are in current affairs: The first one is to "cocoon" the infant by immunizing the household and all close contacts around or to vaccinate the expectant mother during pregnancy to provide protection by passive antibody transmission through placenta and the mother herself as the closest contact. It is a known fact that the source of infection in young infants is the asymptomatic adults (9,10). However cocooning is difficult in daily practice because it is efficient when enough number of people is vaccinated. It is not easy to persuade everyone to get vaccinated and cost affectivity is a challenging problem (11, 12).

In this study we aimed to learn the family physicians' point of view about cocooning strategy. The captains of immunization in the field are family physicians and their knowledge and attitude may provide new insights for the prevention of severe lower respiratory tract infections of young infants.

MATERIALS and METHODS

This cross sectional study was conducted in a small city in the Middle Black Sea Region of Turkey in a period of six months (June 1st and December 31st 2016). It was based on a survey applied by e mail or face to face interviews with family physicians. One of the authors contacted with the physicians and written consent forms were signed before filling the questionnaires. Family physicians working at family healthcare centres participated to this study. The surveys had two parts: In the first part, information about the age, gender, working place, active working time in the profession, number, acceptance of vaccination and rejection rates were questioned. In the second part of the questionnaire, cocooning was defined and the physicians were asked whether they recommend this strategy to their patients and believe in its benefit or not.

Ethics:

The study was approved by the ethical committee of Gazi University with the decision number: 77082166-604.01.02 and by the regional committees of all collaborating local public health institutions.

Statistical analysis:

Statistical analysis was performed using SPSS version 15.0(SPSS, Chicago, IL). The variables were tested using visual (histograms, probability plots) and analytical methods (Kolmogorov Smirnov test) to determine whether they were distributed normally or not. Sociodemographic and professional features of the participants were presented by descriptive statistics. Categorical variables were compared using Pearson's chi-square test, Yate's corrected chi-square test and Fisher's exact test , Mann Whitney U test where appropriate. Results for $p < 0.05$ were considered as statistically significant.

RESULTS

Thirty-five women (36.4%) and 62 men (63.6%); totally 97 family physicians aged between 25-61 years old (mean 39.70 ± 7.70; median: 40) participated to the study. Sixty-one (62.9%) of the

participants worked in the rural areas and 49.5% (n=48) of them had been active in profession for more than 15 years. Thirty-seven percent (n= 36) of the participants reported that they met opposition to vaccination, but final decision was 98% acceptance because to obey the vaccination schedule of the Turkish Ministry of Health was a formal recommendation. Most of the family physicians thought that their general knowledge about immunization was sufficient, however 29.9% (n=29) declared willingness to take courses on new insights of immunization, such as cocooning strategy. Forty-six (47.4%) of the participants stated that they did not have sufficient knowledge about cocooning strategy, 16.5% (n=16) thought that it is beneficial for the protection of young infants, but none of them recommended vaccination for this reason, recommendations were usually related with vaccine receiver's health problems. Most of the caregivers stated that they had not investigate the task adequately or they needed expert consultation (56.7%; n=55). Non- routine immunizations were recommended to the patients when there was the history of a chronic illness or there was an epidemia or when the demand came from the patients (43.3%; n= 42). To be one of the ways of cocooning, Immunization during pregnancy was thought to be a risk as they could not estimate the outcomes for the foetus; only five (5.1%) physicians recommended adult type pertussis vaccine (Tdap) and 38 (38.2%) recommended influenza vaccination during pregnancy, but for maternal reasons; not for cocooning. Gender, age, working place active profession time had no significant effect on decision about **cocooning (Table 1)**

DISCUSSION

Cocooning strategy is a widespread entity, but in practice, it defines the protection of young infants from pertussis and influenza via breaking the infection chain by immunizing the people around them. It is difficult and expensive to administer, but high coverage provides herd immunity for the eradication of infection and reduces health care costs by decreasing the intensive care and hospital stay costs of the infants (12, 13). In developed countries it is administered via different ways and advisory committees about preventive health care recommend pertussis and influenza vaccinations to the pregnant women, house-hold contacts of the infants, adolescents and healthcare workers (14). However, in our country cocooning strategy is a new concept. In this study the family physicians, the captain of immunization procedures in the field, stated that although they thought cocooning was beneficial they did not recommend the process. The main concern to decide on adult immunization was the health problems of the vaccine receiver, not the protection of the young infants. The main reason for this excuse was not having sufficient knowledge about cocooning and administration of other new strategies about immunization. Approximately 30% of the participants stated that they needed to take courses about the improvements in immunization.

While deciding cocooning, the people who are to be vaccinated must be determined according to the social contact patterns of the infants. In Germany pertussis vaccination is recommended to every adult who has close contact with infants younger than 12 months and who has not received adult type pertussis vaccination in the last 10 years (15) A recent study from our country reported that an infant might have 1-18 social contacts daily. Although the longest contact was with the mother, 50.3% of the participants had contacts with non-house hold individuals. Attending crowded places, having schoolchildren siblings were important risk factors for respiratory tract infections. Therefore, the authors concluded that parents should keep their babies away from crowded places and school age siblings and their mother should be vaccinated primarily (16). These reports are necessary to determine the target populations of immunization, but our study concluded that health care professionals should be educated about the new concepts of immunization such as cocooning strategy and adult immunization. Herd immunity can be provided by high vaccination coverage so that all vulnerable individuals can be protected from vaccine preventable diseases; not only the young infants. Immunization schedule for everyone must be planned individually for non- routine immunizations and cost affectivity must be always in consideration.

References

1. *Grizas AP, Camenga D, Vazquez M. Cocooning: a concept to protect young children from infectious diseases. Current Opinion in Pediatrics 2012; 24(1):92-7*
2. *World Health Organization (WHO). Pertussis vaccines: WHO position paper-August 2015. Weekly epidemiological record. Vol 90. Switzerland: World Health Organization; 2015. p.433-60.*
3. *Forsyth K, Plotkin S, Tan T, Wirsing von König CH. Strategies to decrease pertussis transmission to infants. Pediatrics 135(6), e1475–e82*
4. *Acosta AM, DeBolt C, Tasslimi A, et al. Tdap vaccine effectiveness in adolescents during the 2012 Washington State pertussis epidemic. Pediatrics 2015;135(6):981-9.*
5. *Choi YH, Campbell H, Amirthalingam G, van Hoek AJ, Miller E. Investigating the pertussis resurgence in England and Wales, and options for future control. BMC Med 2016;14(1): 121-32.*
6. *World Health Organization (WHO). Turkey: WHO and UNICEF Estimates of Immunization Coverage: 2015 Revision. World Health Organization; 2016. p.1-17.*
7. *Carrico CA, O'Keefe C. Protecting infants against pertussis: the cocooning strategy in practice. Nurse Pract 2013;38(3):40-5.*
8. *Gall SA, Myers J, Pichichero M. Maternal immunization with tetanus-diphtheria-pertussis vaccine: effect on maternal and neonatal serum antibody levels. Am J Obstet Gynecol 2011;204(4):334.e1-5.*
9. *Wiley KE, Zuo Y, Macartney KK and McIntyre PB Sources of pertussis infection in young infants: A review of key evidence informing targeting of the cocoon strategy. Vaccine 2013; 31 (4): 618–625.*
10. *Warfel JM, Zimmerman LI, Merkel, TJAcellular pertussis vaccines protect against disease but fail to prevent infection and transmission in a nonhuman primate model. Proceedings of National Academy of Sciences 2014; 111(2): 787–92.*
11. *Meregaglia M, Ferrara L, Melegaro A, Demicheli V. Parent "cocoon" immunization to prevent pertussis-related hospitalization in infants: the case of Piemonte in Italy. Vaccine 2013;31(8):1135-7.*
12. *Visser O, Hautvast JL, van der Velden K, Hulscher ME. Intention to accept pertussis vaccination for cocooning: a qualitative study of the determinants. PLoS One 2016;11(6): e0155861.*
13. *Lugnér AK, van der Maas N, van Boven M, Mooi FR, de Melker HE. Cost-effectiveness of targeted vaccination to protect new-borns against pertussis: comparing neonatal, maternal, and cocooning vaccination strategies. Vaccine 2013;31(46):5392-7.*
14. *World Health Organization (WHO). WHO SAGE Pertussis Working Group: Background Paper SAGE April 2014. World Health Organization; 2014. p.82.*
15. *Robert Koch InstituteEmpfehlungen der Ständigen Impfkommission (STIKO)am Robert Koch-Institut/Stand: Juli 2004. Epidemiology Bulletin, 2004; 30: 235–50.*
16. *Oguz MM, Camurdan AD, Aksakal FN, Akcaboy M, Altinel Acoglu E. Social contact patterns of infants in deciding vaccination strategy: a prospective, crosssectional, single-centre study. Epidemiology and Infection 2018; 146, 1157–1166. https://doi.org/ 10.1017/S0950268818001048*

Table 1. The sociodemographic characteristics and attitude about immunization strategies of the participants

GENDER	Male	Female	
	n=62; 63.6%	n= 35; 36.4%	
AGE	<40 years old	>40 years old	
	n=51; 53.1%	n=46; 47.4%	
WORRKING PLACE	Urban area	Rural area	
	n=36; 37.1%	n=61; 62.9%	
PROFESSIONAL TIME	<15 years	>15 years	
	n=49; 50.5%	48; 49.5%	

PERCETION IN IMMUNİZATIN KNOWLEDGE	Sufficient n=86; 88.6%	Insufficient n=11; 11.4%	
ATTITUDE ABOUT COCOONING STRATEGY	Beneficial n=35; 36%	Not beneficial n= 16; 16.5%	No idea n=46; 47.5%
"ADULT IMMUNIZATION SHOULD BE APPLIED WHEN MEDİACALLY NECESSARY FOR THE INDIVIDUAL HER/HIMSELF"		I agree n=32; 33%	No idea n=59; 60.8%

FT111

Tips in The Development of Family Central Care

*Emine GEÇKİL**

** Necmettin Erbakan University Faculty of Nursing, Konya, Turkey*

INTRODUCTİON

It began to be accepted in the 19th century when children were not miniatures of adults, but had unique physical, psychological, cognitive and spiritual developmental processes and needs. This perspective led to the understanding that children should be treated differently than adults, and this understanding led to the opening of children's hospitals. n these hospitals, mothers were initially allowed to stay with their sick children, but families were banned from visiting and worried about the spread of infections, and this perspective continued for nearly a century (Smith 2018, Yılmaz and Gözen 2019). These events continued until the Second World War. The father of the Family Centered Care (FCC) Bowlby has revealed the devastating effects of hospitalization on children, apart from their families (Yılmaz and Gözen 2019). Dr. Bowly and Robertson's paper led to the establishment of a "maternal care organization for hospitalized children"in the UK and the preparation of the Platt Report in 1959. The Platt report includes admission of pediatric patients to the hospital with their mothers, allowing parents to visit their in-patient children, providing play opportunities, and training nurses to meet the emotional needs of children and their families (Shields and Tanner 2004). "Family-centered care ğü, which Western medicine sees as something new and different, is in fact a deep-rooted value in cultures like us that place strong emphasis on family ties and networks (Igel and Lenner 2016).

We see that the concept of patient and family centered care is used more frequently. Patient and family-centered care is a collaborative approach between health professionals, patients, and families in planning, delivering and evaluating health care (Johnson and Abraham 2012). Patient and family-centered care emphasizes cooperation not only for children, but also for people of all ages in the whole care setting. This cooperation is not only related to care, but also includes quality development, research, policy-making, training of health workers, design of health care facilities and safety issues (IPFCC, 2019). In patient and family-centered care, there is no concept of "doing for patients or families", but instead of "doing with patients and families."

In pediatric nursing, the importance of the primary caregiver role of the family in meeting the physical, cognitive, psychosocial, spiritual and developmental needs of the child and increasing the health and welfare of the child is increasingly recognized. The FCC provides a holistic approach to patient care, including psychological, spiritual, cultural and emotional dimensions. This term also recognizes the role of family members of the patient in the planning and implementation of home care. Family-centered care is beneficial not only for children but also for all (Clay and Parsh 2016). Implementation of FCC improves patient outcomes, contributes to faster recovery, reduces the number of patients coming back to the emergency room, reduces costs, and increases employee satisfaction (Clay and Parsh 2016, Öztürk, Ayar 2019). The FCC involves family involvement in care and decisions and allows the use of autonomy. In this sense, the FCC is a rising value that contributes to the ethically defensible service provided (Igel and Lenner 2016). The FCC has been listed as a "ten rules for redesigning health care to improve quality in the US by the Institute of Medical (IOM) Health Care Quality Institute (Clay and Parsh 2016).

TIPS IN THE DEVELOPMENT OF FCC

The first step in the development of FCC is to identify and reduce the factors that prevent it. Nurses lack of knowledge and understanding of FCC, lack of workforce, health professionals believe that families do not want to participate in decisions, lack of support from corporate administrations, lack

of guidance for families' duties and responsibilities in hospitals, communication barriers between employees and families (such as differences in language, culture, etc.). These situations constitute obstacles for the implementation of the FCC (Yılmaz, Gözen 2019, Güdücü Tüfekçi and Kara 2019, Taş Arslan and Özkan 2019).

Communication and Cooperation: Although pediatric nurses are the main advocates of the FCC, paternalistic attitudes and lack of cooperation with parents remain (Uhl et al. 2013). Recognizing the importance of the role of family members in health care, establishing and supporting good and safe relationships with patients and their families, clarifying how the strengths and weaknesses of families affect health care, including patients' own health decisions needs to be better informed about treatment options and improved access to information (Clay and Parsh 2016, Khajeh et al. 2017). Parents' ability to participate in care is influenced by their communication with the health care team, especially nurses (Uhl et al. 2013). The patient and family members should be involved in the care discussions and the creation of records. Empowering parents in collaboration with them can contribute to the development of FCC practices (Uhl et al. 2013). Asking if they want to participate in the care and being invited to cooperate will contribute to the development of the FCC as it expresses such a right. Supporting the patient and his / her family to increase health literacy and providing clear information is important for the development of FCC.In order to support the development of FCC, IOM recommended that the patient be treated individually, respecting the values and culture, giving discharge training, informing patients about their rights, explaining dietary restrictions affecting treatment, and informing patients and loved ones (IOM 2001). Language and cultural differences need to be taken into account when providing information and making clinical decisions.Although parental participation in doctor and nurse visits is controversial, it can contribute to the development of FCC because it provides a true source of information, acceptance, and the opportunity to seek advice (Uhl et al. 2013). Only health professionals who accept the importance of their loved ones in patients' health / illness experiences can try to work with patients and their families. Therefore, the inclusion of concepts such as FCC and its principles, cooperation, holistic care and support resources in the education and training curricula of health professionals may increase the applicability of FCC (Simith 2018, Güdücü Tüfekçi and Kara 2019). It is also important that hospitals and health care institutions address these concepts in in-service training programs (Khajeh et al. 2017). It is recommended that FCC applications should be required in order for hospitals to be included in some programs such as Baby Friendly, Family Friendly, Mother Friendly, Magnet hospitals (eg American Nurses Credentialing Center necessitates FCC applications of hospitals to become Magnet Hospital). It is important that hospitals and health institutions provide literature, guidelines and policies for better implementation of FCC in their institutions, that hospital environments are designed in accordance with FCC and that they provide the necessary budget for all these (Khajeh et al. 2017). In the hospital, family, sibling visit scope and hours are flexible, providing physical facilities (kitchen, bathroom, religious places of worship, etc.) to meet the needs of the attendant. regulations will contribute to the development of FCC (Güdücü Tüfekçi and Kara 2019, Öztürk and Ayar 2019, Taş Arslan and Özkan 2019).

Continuous evaluation of FCC applications offered in institutions and hospitals will contribute to the development of FCC (Öztürk and Ayar 2019, Taş Arslan and Özkan 2019). There are limitations in the assessment of FCC in the hospital setting and in other health care providers. The evaluation of the FCC should include a variety of perspectives in terms of children, family and employees (Taş Arslan and Özkan 2019). In this sense, measurement tools were developed to evaluate patient and parent perspectives (Taş Arsan et al. 2019, Yıldız and Geçkil 2019) and nurse view vaccines (Kara 2019). It is important to have sufficient number and quality of nurses and other human resources in the institution in order to ensure the principles of FCC (Khajeh et al. 2017).

Accepting that the FCC can no longer be used not only for pediatrics but also for patients of all ages and in any health care institution may contribute to the development of FCC.

CONCLUSION

Pediatric nurses are the best advocates of FCC, and also play a key role in the implementation and development of FCC. Identifying barriers to FCC implementation, developing and evaluating applications are critical.

References

1- *Clay AM, Parsh B. Patient- and Family-Centered Care: It's Not Just for Pediatrics Anymore. American Medical Association Journal of Ethics 2016,;18, (1): 40-44.*

2- *Güdücü Tüfekci F, Kara A. Pediatride aile merkezli bakım uygulamalarının durumu, uygulamada karşılaşılan güçlükler ve geliştirilmesi için öneriler. Geçkil E, editör. Pediatri Hemşireliğinde Aile Merkezli Bakım. 1. Baskı. Ankara: Türkiye Klinikleri; 2019. p.44-8.*

3- *Igel LH, Lenner BH. Moving Past Individual And "Pure" Autonomy: The Rise Of Family-Centered Patient Care. AMA J Ethics 2016; 18(1): 56-62.*

4- *Institute of Medicine Committee on Quality of Health Care in America. Crossing the Quality* ***Chasm:*** *A New Health System for the 21st Century. Washington, DC: National Academy Press; 2001.*

5- *IPFCC. Patient- and Family-Centered Care. https://ipfcc.org/about/pfcc.html (Last Access: 11.10.2019).*

6- *İşler A, Conk Z. Pediatride Aile Merkezli Bakım. Ege Pediatri Bülteni. 2006;13(3):187- 93.*

7- *Kara A. Çocuk Hemşireliğinde Yeni Bir Ölçek: Aile Merkezli Bakım Tutum Ölçeği. 2. Uluslararası 7. Ulusal Pediatri hemşireliği kongresi. Sözel bildiri. 27-30 Kasım 2019, İzmir.*

8- *Kara A. Aile Merkezli Bakım Davranış Ölçeği Geçerlik Güvenirlik Çalışması. 2. Uluslararası 7. Ulusal Pediatri hemşireliği kongresi. Sözel bildiri. 27-30 Kasım 2019, İzmir.*

9- *Khajeh M, Dehghan Nayeri N, Bahramnezhad F, Sadat Hoseini AS. Family centered care of hospitalized children: A hybrid concept analysis in Iran. Health Promot Perspect. 2017;7(4):210-215. doi: 10.15171/hpp.2017.37*

10- *Öztürk C, Ayar D. Pediatride aile merkezli bakımın çocuk, aile ve hemşireler üzerine yansımaları. Geçkil E, editör. Pediatri Hemşireliğinde Aile Merkezli Bakım. 1. Baskı. Ankara: Türkiye Klinikleri; 2019. p.12-7.*

11- *Shields L, Tanner A. Pilot Study Of A Tool To Investigate Perceptions Of Family-Centered Care in Different Care Settings. Pediatric Nursing Journal. 2004;30(3):189-96.*

12- *Smith W. Concept Analysis of Family-Centered Care of Hospitalized Pediatric Patients. Journal of Pediatric Nursing. 2018;42:57-64.*

13- *Johnson, B. H. & Abraham, M. R. (2012).* Partnering with Patients, Residents, and Families: A Resource for Leaders of Hospitals, Ambulatory Care Settings, and Long-Term Care Communities. *Bethesda, MD: Institute for Patient- and Family-Centered Care.*

14- *Taş Arslan F, Geçkil E, Aldem M, Çelen R. The family-centered care assesment scale: Development and psychometric evaluation in Turkish sample. Journal of Pediatric Nursing. Article in press. 2019, DOI: https://doi.org/10.1016/j.pedn.2019.06.001*

15- *Taş Arslan F, Özkan S. Pediatride aile merkezli bakım uygulamalarının değerlendirilmesi. Geçkil E, editör. Pediatri Hemşireliğinde Aile Merkezli Bakım. 1. Baskı. Ankara: Türkiye Klinikleri; 2019. p.71-6.*

16- *Uhl T, Fisher K, Docherty SL, and Brandon DH. Insights into Patient and Family-Centered Care Through the Hospital Experiences of Parents. JOGNN 2013; (42): 121-131. DOI: 10.1111/1552-6909.12001*

17- *Yıldız N, Yenidoğan Aile Merkezli Bakım Ölçeği Geliştirilmesi. Yükseklisans Tezi. Danışman: Emine Geçkil . Necmettin Erbakan Üniversitesi Sağlık Bilimleri Enstitüsü. 2019.*

18- *Yılmaz ÖE, Gözen D. Pediatri hemşireliğinde aile merkezli bakımın önemi ve bakım kalitesini geliştirmedeki değeri. Geçkil E, editör. Pediatri Hemşireliğinde Aile Merkezli Bakım. 1. Baskı. Ankara: Türkiye Klinikleri; 2019. p.5-11.*

FT112

İslami İlimler Fakültesi Öğrencilerinin Kan Bağışına Yönelik Tutumları

The Attitudes of the Students of the Faculty of Islamic Sciences Towards Blood Donation

Nejla Canbulat Şahiner, Yasemin ŞANLI

Karamanoğlu Mehmetbey Üniversitesi Sağlık Bilimleri Fakültesi, Ebelik Bölümü, Karaman-Karamanoğlu Mehmetbey Üniversitesi Sağlık Bilimleri Fakültesi, Hemşirelik Bölümü

Amaç:
Bu araştırmanın amacı İslami İlimler Fakültesi öğrencilerinin kan bağışına yönelik tutumlarının belirlenmesidir.

Yöntem:
Tanımlayıcı nitelikte olan çalışmanın evrenini 2018-2019 Eğitim-Öğretim Yılı Bahar Dönemi'nde Karamanoğlu Mehmetbey Üniversitesi İslami İlimler Fakültesi'nde öğrenim gören 320 öğrenci oluşturdu. Örneklemine ise araştırmaya katılmayı kabul eden evrendeki tüm öğrenciler alındı. Araştırmayı kabul eden 309 öğrencinin kan bağışına yönelik tutumları belirlendi. Araştırma verilerinin toplanmasında "Tanıtıcı Bilgi Formu" ve "Kan Bağışı Tutum Ölçeği" kullanıldı. Veriler sayı, yüzde, student t testi ve varyans analizi ile değerlendirildi.

Bulgular:
Araştırmaya katılan öğrencilerin yaş ortalamalarının 21.87±5.53 olduğu ve %75.1'inin kadın ve %24.9'unun erkek olduğu belirlendi. Öğrencilerin %70.9'unun kan bağışında bulunmak istemesine karşın %41.1'inin bağışta bulunduğu ve %45.3'ünün konuyla ilgili yeterli bilgiye sahip olmadığını ifade ettiği saptandı. Ölçeğin Cronbach-alpha güvenilirlik katsayısı .74 olarak hesaplandı. Öğrencilerin kan bağışı tutumu toplam puan ortalamaları 91.49±15.19 idi. Ölçeğin alt boyutları değerlendirildiğinde; öğrencilerin kan bağışı tutum ölçeği toplumsal ve sosyal sorumluluk, endişe ve toplumsal görüş ve anlayış boyutu puan ortalamalarının sırasıyla 51.29±11.84, 28.80±5.26, 12.23±2.33 olduğu belirlendi. Toplumsal ve sosyal sorumluluk alt boyutu ortalamasının kadınlarda daha yüksek ve istatistiksel olarak anlamlı olduğu saptandı ($p<0.05$).

Sonuç:
Araştırma sonucunda İslami İlimler Fakültesi öğrencilerinin kan bağışı tutum ve davranışlarının olumlu olduğu görüldü.

Anahtar Kelimeler: *Kan bağışı, tutum, öğrenci*

Abstract
Aim:
The aim of this study is to determine the attitudes of the students of the Faculty of Islamic Sciences towards blood donation.

Materials and Methods:
The universe of this descriptive study consisted of 320 students studying in the Faculty of Islamic Sciences at Karamanoğlu Mehmetbey University in the Spring Term of 2018-2019 Academic Year. All the students in the universe who agreed to participate in the study were included in the sample of the study. Therefore, the attitudes of 309 students who admitted taking part in the blood donation

study were determined. For this, “Introductory Information Form” and “Blood Donation Attitude Scale” were used in order to collect the research data. The data were evaluated by the number, percentage, student t-test and variance analysis.

Results:
The mean age of the students was found to be 21.87±5.53, and 75.1% of the participants was female and 24.9% of them was male. Although 70.9% of the students wanted to donate blood, only 41.1% of them donated, and 45.3% of the students stated that they did not have enough information about the subject. Cronbach-alpha reliability coefficient of the scale was calculated as .74. The mean of total blood donation attitude score of the students was determined to be 91.49±15.19. When the sub-dimensions of the scale were evaluated, the mean score of “social responsibility” sub-dimension, the mean score of “anxiety” sub-dimension, and lastly, the mean score of “social opinion and understanding” sub-dimension were determined to be as 51.29±11.84, 28.80±5.26, and 12.23±2.33, respectively. The mean score of “social responsibility” sub-dimension was observed to behigher and statistically significant in women ($p<0.05$).

Conclusion:
The blood donation attitudes and behaviours of the students of the Faculty of Islamic Sciences were found to be positive.

Keywords: *Blood donation, attitude, student*

Introduction
Blood donation is the process of donating whole blood or at least one of its components (1). There is no alternative other than human to obtain the blood of human origin. Therefore, blood donation is the most primary way to save a person's life (2).
In the vast majority of countries in the world, almost all of the blood supply is provided by voluntary donations. While the ratio of voluntary blood donations to the population reaches 5% in developed countries, this rate is 3.6% in our country (1).
The Turkish Red Crescent continues its activities within the framework of the Law (No. 5624) and the Blood and Blood Products Regulation (No. 27074) published in the Official Gazette which specifies the standards of the establishment of blood donation centres and regional blood centres, devices, materials, personnel, quality management and quality control (3).
The most essential task of blood banks is to provide sufficient and safe blood to society (4). The only source of blood supply is “voluntary blood donors” (5). In this regard, in order to make individuals aware of their social responsibilities, they should be informed and educated so that they could increase their blood donations (6, 7). For these reasons, determining the attitudes of university students who can afford the majority of donations today and in the future is of great importance in terms of increasing blood donation rates and identifying initiatives to encourage blood donation. In this study, it was aimed to investigate the knowledge and attitudes of the students of the Faculty of Islamic Sciences who will guide the people's thoughts and behaviours through this subject with their behaviours and opinions in the future.

Materials and Methods
The universe of this descriptive study consisted of 320 students studying in the Faculty of Islamic Sciences of Karamanoğlu Mehmetbey University in the Spring Term of 2018-2019 Academic Year. All the students in the universe who accepted to participate in the study were included in the sample. The percentage of the universal coverage is 96.6%. Attitudes of 309 students who agreed to the study

about blood donation were determined in the research. “Introductory Information Form” and “Blood Donation Attitude Scale” were used to collect the research data.

Introductory Information Form:

It consists of a total of 20 open and closed-ended questions including information about their age, gender, class, department, income status, blood donation information, thoughts and behaviours.

Blood Donation Attitude Scale:

This is a 5-point Likert-type scale consisting of 24 items with 3 sub-dimensions. Sub-dimensions are specified as follows: “Social responsibility”, “anxiety” and “social opinion and understanding”. In all three dimensions, question items are scored as “1” strongly disagree, “2" disagree, “ 3 ” undecided, “4” agree, and “5” strongly agree. Negative items are defined as follows: 2, 13, 14, 15, 16, 17, 18, 22, 23, and 24. The highest score to be taken from the scale is 120 in total. The increase in the score indicates that the attitude towards blood donation increases positively. It was developed by Çelik and Güven (2015), and its validity and reliability studies were conducted. Cronbach alpha reliability coefficient is .83 (5). In this study, Cronbach-alpha reliability coefficient of the scale was calculated as .74.

Results

It was determined that the mean age of the students participating in the study was 21.87±5.53 and that 75.1% were female and 24.9% were male. It was found that although 70.9% of the students wanted to donate blood, only 41.1% of them donated, and that 45.3% of them did not have adequate information about blood donation. The mean total blood donation attitude score of the students was read at 91.49 ± 15.19. When the total scores of the scale were compared with the students' gender, class, income, blood donation and willingness to donate, and having sufficient information about blood donation, no statistically significant difference was found ($p > 0.05$) (Table 1).

When the sub-dimensions of the scale were evaluated, it was found that the mean scores of the students' blood donation attitude scale’s social responsibility sub-dimension, anxiety sub-dimension, and social opinion and understanding sub-dimension were 51.29±11.84, 28.80±5.26, and 12.23±2.33 respectively. The mean of social responsibility sub-dimension was found to be higher and statistically significant in women (t: 2.271 p: 0.012) (Table 2). There was no statistically significant difference between students' class, income, blood donation and willingness to donate, having sufficient information about blood donation and social responsibility sub-dimension, anxiety sub-dimension, and social opinion and understanding sub-dimension ($p > 0.05$) (Table 2).

Discussion

In this study, it was determined that the blood donation attitudes of the students of the Faculty of Islamic Sciences were positive. In the literature, similar studies evaluating the attitudes and knowledge of university students towards blood donation were found to be parallel with this current study which indicates a positive result for students about blood donation (1, 6, 8).

When the sub-dimensions of the scale were assessed, it was discovered that the average score of ”social responsibility” sub-dimension was higher in women. There is only one study in the literature with the “Blood Donation Attitude Scale”. In the study of Efteli, Tuğrul and Ergin, the mean score of this sub-dimension was found to be significantly higher in women (6). Although the findings of the study overlap with similar findings in the literature, men donate more blood than women according to the Red Crescent data (9). There are also studies in the literature proving that men donate more blood to support this inclination (1, 4, 10,11). Although women have more positive attitudes about blood donation than men, low blood donation rates among women may be caused by the idea of endangering their health by donating blood.

Conclusion

It was determined that the blood donation attitudes and behaviors of the students of the Faculty of Islamic Sciences were positive, that the social responsibility sub-dimension of women was higher than that of men, that although the majority of the students wanted to donate blood, almost half of them donated, and that half of the students did not have enough information about blood donation. Increasing blood donations in our society will only be possible by developing positive attitudes, encouraging young people to donate blood, and carrying out education and information activities particularly during the university years.

Table 1. Comparison of Student's Descriptive Characteristics and Mean Scores of Blood Donation Attitude Scale

Descriptive Characteristics			**The Mean Scores of Blood Donation Attitude Scale**		**Test and p value**
	n	**%**	**X**	**SS**	
Gender					
Woman	232	75.1	91.29	15.36	t: 0.120
Man	77	24.9	92.11	14.67	p: .793
Class					
Preparatory Class	94	30.4	89.68	14.04	
1	116	37.9	88.69	17.83	
2	52	16.5	87.98	12.55	F: 1.370
3	47	15.2	92.12	8.70	p: .244
Income					
Income lower than the expense	40	12.9	92.95	21.87	
Income equivalent to the expense	241	78	90.21	13.55	F: 1.405
Income higher than the expense	28	10.1	89.30	12.44	p: .247
Blood Donation		41.1	90.76	13.96	t: 1.440
Yes	26	58.9	88.30	15.33	p: .878
No	183				
Willingness to Donate Blood					
Yes	219	70.9	90.95	14.94	t: 3.086
No	90	29.1	85.30	13.77	p: .796
Having Enough Information about Blood Donation					
Yes	167	54.7	91.23	16.34	t: 2.567
No	142	45.3	87.32	12.39	p: .110

Table 2. Comparison of Students' Descriptive Characteristics and Mean Scores of Sub-Dimensions in Blood Donation Attitude Scale

Descriptive Characteristics	Social Responsibility		Anxiety		Social Opinion and Understanding	
	X	SS	X	SS	X	SS
Gender						
Woman	52.42	11.98	28.64	5.12	12.18	2.32
Man	49.95	11.48	29.28	5.65	12.38	2.39
Test and p value	t:2.271	**p:0.012 ***	t:1.268	p:.262	t:1.169	p:.280
Class						
Preparatory Class	51.52	10.41	28.86	5.06	12.22	2.31
1	51.03	15.40	28.52	5.71	12.20	2.44
2	50.19	8.05	28.45	50.27	12.25	2.61
3	53.20	6.09	29.90	4.41	12.32	2.26
Test and p value	F:1.240	p:.294	F:.794	p:.540	F:.249	p:.910
Income						
Income lower than the expense	54.32	18.80	29.42	6.10	12.12	3.10
Income equivalent to the expense	50.85	10.48	28.64	5.25	12.28	2.24
Income higher than the expense	50.78	9.86	29.28	3.98	11.92	1.77
Test and p value	F:1.506	p: .224	F: .501	p: .606	F: .328	p: .721
Blood Donation						
Yes	52.41	10.26	29.25	5.60	12.13	2.24
No	50.51	12.80	28.48	4.99	12.29	2.39
Test and p value	t:1.390	p: .679	t:1.268	p: .262	t:1.169	p: .280
Willingness to Donate Blood						
Yes	52.45	12.09	29.31	4.86	12.25	2.35
No	48.47	10.76	27.57	5.97	12.17	2.31
Test and p value	t:2.710	p: .604	t:2.656	p: .351	t:.254	p: .934
Having Enough Information about Blood Donation						
Yes	52.53	12.85	29.53	5.77	12.26	2.47
No	50.10	10.20	27.97	4.49	12.19	2.16
Test and p valu	t:1.803	p: .472	t:2.599	p: .046	t:.252	p: .253

* $p<0.05$

References

1- *Özpulat F. Üniversite öğrencilerinin kan ve organ bağışına ilişkin düşünceleri. HSP 2017; 4(2): 71.*
2- *Argan M. Kan Bağış Davranışını Etkileyen Faktörlerin Planlı Davranış Teorisi Çerçevesinde İncelenmesi. ACÜ Sağlık Bilimleri Dergisi 2016; (2) : 96-104.*
3- *Saygılı S. Kan ve Kan Ürünleri Yasasında Kurumların Rolü: Kızılay'ın Rolü, XXXVI. Ulusal Hematoloji Dergisi 2010; 84-86.*
4- *Arege G, Ibrahim S, Adimasu E. Blood donation practice and its associated factors among health professionals of University of Gondar Hospital, Northwest Ethiopia: a cross sectional study, Arage et al. BMC Res Notes 2017; (10):294-300.*
5- *Çelik C, Güven G. Kan Bağışı Tutum Ölçeğinin Geliştirilmesi: Geçerlilik ve Güvenilirlik Çalışması, Erzincan Üniversitesi Eğitim Fakültesi Dergisi 2015; 17(2):504-521.*
6- *Efteli E, Tuğrul E, Ergin S. Hemşirelik Bölümü Öğrencilerinin Kan Bağışına Yönelik Tutumlarının Belirlenmesi. Hemşirelik Bilimi Dergisi 2018; 1(1):05–09.*
7- *Hablemitoğlu G, Özkan Y, Yıldırım F. Bir fedakârlık örneği olarak " Kan bağışı". Sosyal Politika Çalışmaları Dergisi 2010; 20(20).*
8- *Daştan N.B, Daştan M, Kıranşal N. Practices and attitudes towards blood donation in health high school students. Journal of Human Sciences 2013; 10(1): 293-306.*
9- *Türk Kızılayı. Kan hizmetleri genel müdürlüğü faaliyet kitabı Ankara, 2018. Erişim Tarihi:01.11.2019.http://www.kanver.org/Upload/Dokuman/Dosya/9348 8678_khgm_2018.pdf.*
10- *Soyal H, Yarar O. Sağlık Hizmetleri Meslek Yüksekokulu öğrencilerinin kan bağışına karşı tutum ve davranışları. Marmara Sağlık Hizmetleri Dergisi 201; 1(2):65-68.*
11- *Şıhbaraklıoğlu H. Kayseri ilinde toplumun kan bağışına karşı tutum ve davranışları Yüksek Lisans Tezi. 2014, İstanbul.*

FT113

Anxiety in Children 8-10 Years

Saniye TEZE

Gaziantep University Vocational School of Social Sciences

Department of Child Care and Youth Services, Gaziantep

AIM

This study was conducted to determine anxiety scores of 8-10 year old children.

MATERIALS AND METHODS

This descriptive study was conducted on the parents of 288 children aged 8-10 years from Karaman. The population of the study consisted of the parents of healthy children aged 8-10 years and the study group consisted of volunteers to participate in the study. Spence Children's Anxiety Scale (SCAS) –Parent Version was used as data collection tool. Data were analyzed using descriptive statistics and t test in SPSS package program.

FINDINGS

In this study, the total score average of the scale was found to be 25,1 ±15,26.
The mean total score of the girls was found to be 22.69 ± 13.44; The mean score of the scale was found to be 27.59 ± 16.66 in men. The mean score of anxiety in boys was higher than the anxiety score of girls and it was found that there was a statistically significant difference ($p < 0.01$).

RESULTS

In this study, it was concluded that the anxiety level of males was higher than the girls in the 8-10 age group

Keywords: *8-10 years old child, Anxiety, gender*

INTRODUCTION

Anxiety is normal and healthy. When we're presented with something dangerous in the world, our anxiety response protects us from danger (childmind.org/2018report). Anxiety, worry and fear in child can take many forms. All children experience fears and phobias at particular stages of their lives, and this is normal part of growing up. But sometimes, worrying and fears can reach a point where they start to cause a problem fort the child. These excessive fears are often temporary and transient. On the other hand, some children will experience worries and fears to a much greater degree than their peers, and some continue to experince fears long after other children their age have outgrown them. Many adults believe that childhood is a times of carefree days and no responsibility in fact, anxiety is the most common problem reported by children of all ages (Rapee et al., 2014). Scale for Children - parent form consist of six subscales: panic attack and agoraphobia, separation anxiety, physical injury fears, social phobia, obsessive compulsive disorder, and generalized anxiety. If there is anxiety disorder in children, one of the conditions required for early intervention is the availability of valid and reliable measurement tools (Orbay and Ayvaşık, 2006). According to the DSM-IV Diagnostic Criteria Reference Book (American Psychiatric Association, 1994) on anxiety disorders in children: Separation anxiety is defined as the intensity of anxiety that affects the normal development of the child in important persons or from leaving home. Common anxiety is defined as extreme anxiety and anxiety associated with mobility and motor tension. The most prominent feature of panic disorder is the deep concern about panic attacks and the likelihood or consequences of their

recurrence. Social phobia is defined as marked and persistent fear in social settings that may be associated with embarrassment or in situations requiring performance. Specific phobia is often defined as a significant and persistent anxiety that occurs when a feared object or situation is encountered that elicits escape behavior. Obsessive-compulsive disorder is defined by the presence of disturbing thoughts, ideas, images and repeated mental activities or behaviors to relieve anxiety. This study was conducted to determine anxiety scores of 8-10 year old children.

Inclusion criteria;
• Have children between the ages of 8-10,
• Communication and cooperation are open
• Does not have any psychological / thinking problems,
• Has no communication and language problems • Mothers who volunteered to participate in the study were included.

Research Questions
1. According to the mothers received; What is the total anxiety score of children aged 8-10?
1.1. What is the subscale score of separation anxiety and fear of physical injury of children?
1.2. What is the panic attack subscale score of children?
1.3. What is the social phobia subscale score of children?
1.4. What is the children's obsessive-compulsive disorder subscale score?
1.5. What is the agoraphobia subscale score of children?

2. According to the mothers received; What is the total anxiety score of 8-10 years old children according to their gender?
2.1. What is the score of separation anxiety and fear of physical injury subscale score according to gender?
2.2. What is the panic attack subscale score according to the gender of children?
2.3. What is the social phobia subscale score according to the gender of children?
2.4. What is the subscale score of obsessive-compulsive disorder according to gender of children?
2.5. What is the agoraphobia subscale score according to the gender of children?

MATERIALS AND METHODS
This descriptive study was conducted on the parents of 288 children aged 8-10 years from Karaman. The population of the study consisted of the parents of healthy children aged 8-10 years and the study group consisted of volunteers to participate in the study. “Spence Children’s Anxiety Scale (SCAS) –Parent Version was used as data collection tool. Verbal consent was obtained from the mothers for the research. Data were analyzed using descriptive statistics and t test in SPSS package program.

FINDINGS
According to Orbay and Ayvaşık (2006); Spence Anxiety Scale for Children - parent form was created in 1999 by Spence so that the items in the child form can be responded to by parents. The scale consists of 38 items related to anxiety and two open-ended questions that were not scored. The highest score obtained from the scale was calculated as 114 and the cut-off point was suggested as 28 points. forms consist of six subscales: panic attack and agoraphobia, separation anxiety, physical injury fears, social phobia, obsessive compulsive disorder, and generalized anxiety. SCAS-P was previously adapted for Australian, German, and Japanese populations. Turkey has made on the scale of the validity and reliability study in 2006 Orbay and Ayvaşık. Each item is evaluated on a four-

point Likert-type scale between zero and three. (0 = Never, 1 = Sometimes, 2 = Often, 3 = Always). The subscale scores are obtained by summing the scores obtained from the items of each scale and the total score is obtained by summing the subscale scores. In this study, the total score average of the scale was found to be 25,1 ±15,26.

The mean total score of the girls was found to be 22.69 ± 13.44; The mean score of the scale was found to be 27.59 ± 16.66 in men. The mean score of anxiety in boys was higher than the anxiety score of girls and it was found that there was a statistically significant difference ($p < 0.01$).

In this study;

Separation anxiety and fear of physical injury subscale score of the scale was found to be 8.31 ± 5. In males, 9.37 ± 5.02; in girls, it is 7.27 ± 4.79. The mean score of separation anxiety and fear of physical injury was higher in boys than girls and there was a statistically significant difference ($p < 0.01$).

The panic attack subscale score of the scale was 3.29 ± 3.8. In males 3.42 ± 4.16; in girls it is 3.18 ± 3.44. The mean score of panic attacks of males was higher than females, but no statistically significant difference was observed ($p > 0.05$).

The scale's social phobia subscale score was found to be 8.02 ± 4.63. In males, 8.58 ± 4.94; in girls, it is 7.49 ± 4.27. The mean score of social phobia was higher than females and there was a statistically significant difference ($p < 0.05$).

The obsessive-compulsive disorder subscale score of the scale was found to be 3.26 ± 2.94. In males 3,57 ± 3,18; 2.94 ± 2.66 in girls. The mean score of obsessive-compulsive disorder was higher in males than in females and this difference was statistically significant ($p < 0.05$).

The agoraphobia subscale score of the scale was found to be 2.76 ± 2.64. In males 3,08 ± 2,93; In girls, it is 2.48 ± 2.3. The mean score of agoraphobia was higher in males than females. and this difference was statistically significant ($p < 0.05$).

RESULTS

In this study, it was concluded that the total anxiety level of males was higher than the girls in the 8-10 age group. When viewed as sub-scales; Separation anxiety and fear of physical injury, social phobia, obsessive compulsive disorder and agoraphobia subscales were higher than boys and this difference was statistically significant. Although panic attack subscale score was higher than boys, this result was not statistically significant.

Referances

1- *American Psychiatric Association (1994). DSM-IV diagnostic criteria reference handbook (4th edition). E. Koroglu, (Translated). Ankara: Association of Physicians.*

2- *childmind.org/2018report. Understanding Anxiety in Children and Teens 2018 Children's Mental Health Report, www.infocoponline.es › pdf › ANSIEDAD*

3- *Orbay Ö., Ayvaşık H.B. (2006). Spence Anxiety Scale for Children - Parent Form: Preliminary Study, Turkish Psychology Articles, 9 (18): 33-48.*

4- *Rapee R.M., Spence S.H., Cobham V., Wignall A. (2014). Helping Your Anxious Child. (Translated by Rasim Baykaldı) (2nd Edition): Ankara.*

FT114

What Methods Do Mothers Use To Stop Breastfeedıng?

Saniye TEZE

Gaziantep University Vocational School of Social Sciences

Department of Child Care and Youth Services

Gaziantep

AIM
This study was carried out to determine the solutions used by mothers to stop breastfeeding.

MATERIALS AND METHODS: The descriptive study was conducted on mothers with 5-7 years of age in Karaman province. The population of the study was composed of mothers with children aged 5-7 years, and the sample was composed of volunteers (n = 141). Verbal consent was obtained from the mothers for the research. Data were analyzed using descriptive statistics in SPSS package program.

FINDINGS
The mothers in the scope of the research were the solution to separate the baby from breast milk by %14,2 He said that every time he wanted to suckle, he gave additional food, formula or bottle.
The rate of those who stated that the baby stopped sucking when the milk decreased or the mother started to work was 36.2% and mothers stated that they were both upset and emotionally forced.
He stopped breastfeeding by rubbing or scaring from the breast by saying hair was on the chest, bitter nail polish, tape, cotton, pepper, black cream, shoe polish by %22,7 and ve This method is used by the elders said.
At the end of the breastfeeding period, the rate of stopping by the grandmother for a few days was by 09%; The rate of discontinuation of breastfeeding was determined as 17.7% by explaining that it now grows when the baby wants to suck, and by increasing the interval between two breastfeeding, by pulling his attention in the other direction.

RESULTS
In the study, it was concluded that for a significant portion of mothers, if their breast milk decreased, their babies had to quit their mother's milk before time and some of them used various methods to separate their baby from breast milk. Therefore; by child development specialists and health professionals; It is recommended that mothers who cannot breastfeed their babies due to the decrease in milk in the first months should be educated and advised about the methods of increasing the milk.

Key Words: *Mother, Baby, Breastfeeding, Method Used.*

INTRODUCTION
Breastfeeding is a condition that almost every mother who wants to be a mother and to feed her baby healthy wants to do it. Breastfeeding is the most useful food for the baby when he is born, and as both are happy in breastfeeding, he creates an indispensable emotional bond between mother and baby. Therefore, both the mother and the baby may be forced by the end of this period. The World Health Organization defines weaning as the gradual discontinuation of breastfeeding and the transition to complementary nutrition that includes solid and liquid foods other than breast milk.

Although breastfeeding is common in Turkey, and not only at the level desired by mother's milk feeding habits. In the first six months, about two of every five children are exclusively breastfed. The average duration of breastfeeding in our country is 16 months. Baby food and other liquids are common and earlier onset is preferable to bottle feeding (Turkey Demographic and Health Survey, 2013; Cangöl and Şahin, 2014). Mothers' ignorance and anxiety about breastfeeding, mothers are not encouraged enough about breastfeeding, women take more place in the working life, urbanization, wrong traditions, aesthetic concerns, formula foods to replace breast milk, encouraging breastfeeding rates decrease.
It is stated that some mothers have problems in weaning, especially the mothers who breastfeed their babies until the age of 2 and are forced to use traditional methods (İnce et al., 2010; Abu Hamad and Sammour, 2013).
Sociocultural factors such as working outside the home of the mother, working hours leading to the mother being separated from her baby for a long time, and breastfeeding in public areas are also mentioned as important obstacles to sustaining breastfeeding (Thurman and Allen, 2008). This study was carried out to determine the solutions used by mothers to stop breastfeeding.

MATERIALS AND METHODS

The descriptive study was conducted on mothers with 5-7 years of age in Karaman province. The population of the study was composed of mothers with children aged 5-7 years, and the sample was composed of volunteers (n = 141) and verbal consent was obtained from the mothers for the research. Data were analyzed using descriptive statistics in SPSS package program.

Inclusion criteria;

- Have children between the ages of 5-7,
- Open to communication and cooperation
- Breastfeeding experience,
- Does not have any psychological / perception problems,
- Has no communication and language problems
- Mothers who volunteered to participate in the study were included in the study.

Research Questions
What methods do mothers use to separate their babies from breast milk?
2. What are the methods used by mothers to differentiate them from breast milk according to their working status?
3. What are the methods used by mothers to differentiate them from breast milk according to their educational level?

FINDINGS

The age of the mothers was between 23-44 and the mean age was 29.66 ± 5.02. When the working conditions of the mothers were examined; 37.5% of employees; non-working 62.5%.
When working mothers stop breastfeeding methods;

- 5.3% using bottle, formula;
- 34.2% stopped sucking the baby by milk reduction;
- 28.9% of them were using disgust and intimidation;
- Leaving 5.3% to grandmother;
- 18.4% discontinue breastfeeding by talking to their children and distracting them.

When the mothers who do not work are given the methods of stopping breastfeeding;

- 14.5% using bottle, formula;

• 28.2% stopped sucking the baby herself with a decrease in milk;
• 15.5% using disgust and intimidation;
• 10% leave to grandmother;
• 13.6% discontinue breastfeeding by talking to their child and distracting them.

When the educational status of the mothers is examined; 29.5% are literate; 31.3% high school; 17.6% associate degree; It is seen that 21.6% have undergraduate and graduate degrees.
Looking at the methods of cessation of breastfeeding according to education level; 25% of those who are literate using bottle, formula; 23.1% stopped sucking the baby himself with a decrease in milk; 11.5% using disgust and intimidation; 1.9% leave to grandmother; 7.7% of them talk to their children, attention to the other direction to stop breastfeeding.
High school graduates; 3.6% of them using bottle, formula; 36.4% stopped sucking the baby by milk; 12.7% of them were using disgust and intimidation; 12.7% leave to grandparents; 14.5% speaks to their children and stops breastfeeding.
Graduates of college; 12.9% using bottle, formula; 29% stopped sucking the baby by milk reduction; 22.6% were using disgust and intimidation; 9.7% were left to grandparents; 9,7% of them stop breastfeeding by talking to their child and distracting them.
Undergraduate and graduate graduates; 5.3% using bottle, formula; 34.2% stopped sucking the baby himself with a decrease in milk; 28.9% of them using disgust and intimidation; Leaving 5.3% to grandparents; 18.4% of them stop talking to their children and stop breastfeeding.

RESULTS

In this research, as the solution methods used by mothers in separating their babies from breast milk; It was found that she used the method of stopping breastfeeding by using baby bottle, formula, stopping breastfeeding herself with the decrease of milk, disgusting-intimidation method, leaving to grandmother-grandmother or talking with her child and drawing attention to another direction. It was concluded that most of the working and non-working mothers had to stop breastfeeding due to the decrease in milk and that some of them used traditional methods of breastfeeding and intimidation.
In line with these results; by specialists (child development specialists, health workers, etc.) who are dealing with the mother; It is recommended that mothers who cannot breastfeed because of the decrease in milk during the breastfeeding period (two years; especially in the first six months) should be educated about the methods of increasing milk and breastfeeding mothers - timely - about the process of separation from breastmilk, and breastfeeding mothers to stop breastfeeding abstain from using traditional methods, further studies should be made to contribute to the literature.

Referances

1- *Abu Hamad BA, Sammour HK. (2013). Weaning practices of mothers attending United Nations Relief and Works Agency health centres in the Gaza Governorates. JAN; 69:773-781.*
2- *Cangöl E., Şahin, N.H. (2014). Factors Affecting Breastfeeding and Breastfeeding Counselling. Zeynep Kamil Medical Bulletin; 45:100-5.*
3- *İnce T., Kondolot M., Yalçın SS., and Yurdakök K. (2010). Breastfeeding consultation status of mothers. Journal of Child Health and Diseases; 53: 189-197.*
4- *Thurman SE, Allen PJ. Integrating lactation consultants into primary health care services: are lactation consultants affecting breastfeeding success? Pediatr Nurs 2008; 34: 419-425.*
5- *Turkey Demographic and Health Survey (2013). Hacettepe University Institute of Population Studies in Ankara, Turkey.*

FT115

Yenidoğan Yoğun Bakımda İnfluenza Salgını: İnfluenza Enfeksiyonunun Binbir Yüzü

Şükran YILDIRIM,

Sağlık Bilimleri Üniversitesi, Okmeydanı Eğitim ve Araştırma Hastanesi, Çocuk Sağlığı ve Hastalıkları Kliniği, Yenidoğan Yoğun Bakım Ünitesi, İstanbul

Aim

The purpose of this article is to emphasize the variability of symptoms of influenza virus as a causative agent of nosocomial infection in NICU (neonatal intensive care unit), through description of an outbreak in our unit.

Materials and methods

Symptoms, test results and treatment of neonates are discussed during an outbreak in Okmeydani Training and Research Hospital in 2018 influenza season.

Results

Symptoms showed a wide range, a baby was asympthomatic, another showed characteristic viral respiratory tract illness signs. All the babies had monocytosis. Preterm babies showed neutropenia. All the babies were treated with oseltamivir without any side effects.

Conclusion

In many neonatal intensive care units (NICU), if infants deteriorate, standard approach is usually to evaluate for bacterial sepsis. Viral pathogen as a causative agent is not a part of routine evaluation. However, there has been an increasing number of reports on influenza infections in neonates and descriptions of influenza spread within neonatal units. Symptoms may be variable. Monocytosis and neutropenia in periferic blood smear may be a sign of viral respiratory tract infection.

Keywords: *Influenza, newborn, NICU outbreak, monocytosis, neutropenia, oseltamivir*

Amaç

Bu yazının amacı yenidoğan bebeklerde influenza virusunun çok çeşitli bulgularla ortaya çıkabileceğini göstererek, yenidoğan yoğun bakım ünitelerinde viral nozokomiyal enfeksiyonlarla ilgili farkındalığı artırmaktır.

Yöntem

Okmeydanı Eğitim ve Araştırma Hastanesi yenidoğan yoğun bakımda, 2018 yılı influenza sezonunda, influenza virüs enfeksiyonu tespit edilen 5 bebeğin kliniği, laboratuvar bulguları ve tedavisi anlatılmıştır.

Bulgular

Klinik, asemptomatik olmaktan tipik viral solunum yolu enfeksiyonu semptomlarına varan çeşitlilik göstermiştir. Tüm bebeklerde monositoz, preterm bebeklerde ek olarak nötropeni gözlenmiştir. Tüm bebekler oseltamivir ile tedavi edilmiş ve her hangi bir yan etki görülmemiştir.

Sonuç

Yenidoğan yoğun bakımda yatmakta olan bebeklerde, klinik kötüleşme olduğunda standart yaklaşım, bebeği ilk olarak bakteriyel sepsis açısından değerlendirmektir. Bu kapsamda viral bir etkenin varlığı rutin olarak araştırılmamaktadır. Ancak literatürde yenidoğan yoğun bakımlarda azımsanmayacak

sayıda nozokomiyal influenza virüs enfeksiyonları bildirilmeye başlanmıştır. Erken tanı, etkin izolasyon önlemlerinin alınması ve gereksiz antibiyotik kullanımına son verilmesi bakımından son derece önemlidir. Semptomlar değişken olabilir. Periferik yaymada monositoz ve nötropeni, viral solunum yolu enfeksiyonu açısından uyarıcı olabilir.

Anahtar kelimeler: *İnfluenza, yenidoğan, yenidoğan ünitesi salgını, monositoz, nötropeni, oseltamivir*

Giriş

İnfluenza, *Orthomyxoviridae* ailesinden bir RNA virusudur. Çoğunlukla damlacık yolu veya kontamine ellerle bulaşır (1, 2). İnkübasyon süresi 1-5 gündür, bulaştırıcılık semptomların başlamasından 1 gün öncesinden başlayarak semptomların varlığı süresince devam eder (3). Yenidoğanda korunma ve tedavi seçenekleri kısıtlıdır (4). Mevcut influenza aşıları 6 ayın altında kullanılmamaktadır (5). Tek korunma yöntemi izolasyon önlemlerine ek olarak bakım verenlerin aşılanmasıdır, ancak ne yazık ki sağlık çalışanları arasında bile aşı kompliansı da son derecede düşük saptanmıştır (6, 7).

Influenza semptomları çoğu zaman bakteriyel enfeksiyon semptomları ile aynıdır ve son derece çeşitlidir: morarma, takipne, sekresyon artışı, apne, mekanik ventilasyon desteği veya mekanik ventilasyon parametrelerinde artış, bradikardi, yüksek ateş, akciğerde hışıltı veya raller, hatta nöbet. Bu nedenle tanı için yüksek klinik şüphe gerekir (6-10). Bir preterm bebekte influenza virusuna bağlı solunum yetmezliği nedeniyle ölüm de bildirilmiştir (11). Yine de, daha büyük yaş grupları ile karşılaştırıldığında morbidite ve mortalite düşüktür (12).

Influenzanın tanısında yaygın olarak hızlı antijen testleri ve moleküler testler kullanılır (13). Tedavi ve profilakside, çoğu yenidoğan ünitesi salgınında bir nöraminidaz inhibitörü olan oseltamivir kullanılmış ve çoğunlukla iyi tolere edilmiştir (6-9, 11,12).

Yöntem

Okmeydanı Eğitim ve Araştırma Hastanesi yenidoğan yoğun bakımda Mart-Nisan 2018 tarihlerinde influenza virüs enfeksiyonu tespit edilen 5 bebeğin kliniği, laboratuvar bulguları ve tedavisi anlatılmıştır.

Bulgular

Bebeklerin demografik, klinik ve laboratuvar özellikleri tablo 1'de özetlenmiştir. İndeks vaka tablodaki ilk bebektir. Annesinin viral solunum yolu enfeksiyonu geçirdiği öğrenilmiştir. İnfluenza antijeni pozitif saptanan 5 bebeğe, oseltamivir 3 mg/kg/doz-günde 2 kez, eş zamanlı olarak yenidoğan ünitesinde yatmakta olan ancak influenza antijeni negatif saptanan diğer 5 bebeğe profilaktik olarak 3 mg/kg/gün oseltamivir tedavisi 10 gün süre ile verilmiştir. Hastaların hiçbirinde oseltamivir ile ilişkili yan etki saptanmamıştır. Son influenza antijeni pozitif saptanan bebek taburcu olana kadar üniteye yeni hasta alınmamış ve solunum izolasyon önlemlerine dikkat edilmiştir. Tüm bebeklerde tam iyileşme görülmüştür. Yalnız indeks vaka ilk 6 ayında iki kez daha hiperreaktif hava yolu hastalığı nedeni ile yatırılmıştır.

Tartışma

Semptomların silik olması, yenidoğan döneminde viral solunum yolu enfeksiyonlarına çoğu zaman geç tanı konmasına neden olmakta, bu da izolasyon önlemleri ve tedavi için önemli bir zamanın yitirilmesi sonucunu doğurmaktadır (15). Bu nedenle kliniği bozulan yenidoğanda bakteriyel sepsisin yanı sıra viral enfeksiyonların da akla gelmesi gerekmektedir (3). Yenidoğan ünitemizdeki Mart-Nisan 2018 sezonunda influenza antijeni pozitif saptanan 5 bebekte de klinik prezantasyon, asemptomatik seyirden tipik viral solunum yolu bulgularına varan bir geniş bir yelpazede kendini

göstermiştir. Tam kan sayımındaki bazı değişiklikler de influenza açısından uyarıcı olabilir. Influenza pozitif hastalarda lenfopeni, monositoz, trombositopeni ve nötropeni bildirilmiştir (16, 17). Hastalarımızda gözlenen nötropeni ve monositoz bizim için tanı açısından uyarıcı olmuştur.

Tanıda en sık hızlı antijen testleri ve RT-PCR (reverse transcription-polimerase chain reaction) yöntemi kullanılır. Hızlı antijen testleri 15 dakikada sonuç verebilmesi nedeniyle, antiviral tedavinin hemen başlanabilmesini ve kısa sürede izolasyon önlemlerinin alınabilmesini sağlar. Ancak bu testlerin sensitivitesi %50-70 civarındadır. Bu nedenle hastanede yatan veya sezon dışında influenza benzeri hastalık gösteren hastalarda RT-PCR ile doğrulama gerekir. RT-PCR yönteminin sensitivitesi % 90'ların üzerindedir. Yaklaşık 45 dakika gibi bir sürede sonuç alınır. Tanıda altın standart kabul edilmesine rağmen, teste erişim hızlı antijen testi kadar kolay değildir (13). Hastalarımızda bu yöntemle doğrulama yapamamış olmamız bu çalışmanın kısıtlayıcı yönünü oluşturmaktadır.

Tedavide en yaygın kullanılan farmakolojik ajan oseltamivirdir (14). Wooltorton ve arkadaşlarının, 2004 yılında yaptıkları bir çalışmada, farelere çocuklara verilen dozun 250 katı dozunda oseltamivir verilmiş ve hayvanların hepsi kaybedilmiştir (18). Bu çalışma nedeniyle oseltamivirin güvenilirliği ile ilgili endişeler doğmuş olsa da, FDA (Food and Drug Administration) 2009 H1N1 pandemisinde 1 yaş altında acilen oseltamivir onayı vermek zorunda kalmıştır (19). Sınırlı sayıda bildirilen yenidoğan kullanımında şu ana kadar yenidoğanda tolerasyonun iyi olduğu görülmüştür (6-9, 11,12). Yalnızca bir çalışmada yenidoğan ünitesi salgını sırasında oseltamivir verilmemiş ve bu hastaların da tamamı iyileşmiştir (10). Şu an için önerilen tedavi dozu term yenidoğanda günde 3 mg/kg, 2 doz, profilakside ise günde 1 doz 3 mg/kg/gündür (14). Preterm bebeklerde önerilen oseltamivir dozu, günde 2 kez 1 mg/kg/doz, profilakside günde 1 kez 1 mg/kg/dozdur (20). Semptomların başlamasından veya maruziyetten sonraki ilk 48 saatte tedavi veya profilaksi başlanmalıdır (21, 22). Yenidoğanda oseltamivir dozu, kullanım süresi ve profilaktik kullanımla ilgili ek verilere ihtiyaç devam etmektedir.

Sonuç

Yenidoğanda influenza enfeksiyonu çoğu zaman doğrudan solunum yolu bulguları göstermemekte, klinik bulgular, asemptomatik seyirden emerken yorulma, tartı almama ve apne gibi genel semptomlara kadar değişebilmektedir. Özellikle preterm doğmuş bebeklerde semptomlar daha silik olabilmekte ve tanı için yüksek klinik şüphe gerekmektedir. Çeşitli semptomlarla birlikte monositoz ve nötropeni, influenza enfeksiyonu gibi viral enfeksiyonlarını akla getirmelidir. Preterm bebeklerde nötropeni daha belirgin olabilmektedir. Oseltamivir yenidoğanda oldukça iyi tolere edilebilen bir antiviral ajandır.

Kaynaklar

1. *Woods CR, Abramson JS. The next influenza pandemic: will we be ready to care for our children? J Pediatr 2005;(147)147–155. doi: 10.1016/j.jpeds.2005.04.066.*
2. *Tellier R. Aerosol transmission of influenza A virus: a review of new studies. JR SocInterface 2009; 6 (Suppl 6): 783-90. doi: 10.1098/rsif.2009.0302 focus. Epub 2009 Sep 22.*
3. *Gelber SE, Ratner AJ. Hospital-acquired viral pathogens in the neonatal intensive care unit. Semin Perinatol 2002;(26)346–356. doi: 10.1053/sper.2002.36268.*
4. *Whitley RJ, Monto AS (2006). Prevention and treatment of influenzain high-risk groups: Children, pregnant women, immunocompromised hosts, and nursing home residents. J Infect Dis 2006, 194(Suppl 2):133–138. doi: 10.1086/507548.*
5. *Principi N, Esposito S. (2004). Are we ready for universal influenza vaccination in paediatrics?*

Lancet Infect Dis 2004(4)75–83. doi: 10.1016/S1473-3099(04)00926-0.

6. *Milupi M, Madeo M, Brooke N, Ahmad SJ. Neonatal influenza A/H1N1/2009 outbreak in a UK district general hospital. J Hosp Infect 2012(81)131–133. doi: 10.1016/j.jhin.2012.04.005.*
7. *Tsagris V, Nika A, Kyriakou D, et al. Influenza A/H1N1/2009 outbreak in a neonatal intensive care unit. J Hosp Infect 2012(81)36–40. doi: 10.1016/j.jhin.2012. 02.009.*
8. *Rocha G, Pissarra S, Silva G, Guimares H. Experience with oseltamivir in term and preterm newborns. Res. Gate 2010(5)327–331. doi: 10.3233/JPI-2010-0270.*
9. *Pannaraj PS, Tam B, Akan D. Oseltamivir treatment and prophylaxis in a neonatal intensive care unit during a 2009 H1N1 influenza outbreak. J Perinatol 2011(31)487–493. doi: 10.1038/jp.2010.159.*
10. *Vij NK, Stryker CC, Esper FP, et al. Influenza A/H1N1/09-10 infections in a NICU during the 2009-2010 H1N1 pandemic. Pediatrics 2011(128)1297–1301. doi: 10.1542/peds. 2011-0219.*
11. *Jajoo M, Gupta R. H1N1 influenza in a preterm neonate. Indian J Pediatr 2010(77)1045–1046. doi: 10.1007/s12098-010-0166-2.*
12. *Bhat N, Wright JG, Broder, KR, et al. Influenza-associated deaths among children in the united states, 2003-2004. N Engl J Med 2005(353)2559–2567. doi: 10.1056/NEJMoa051721.*
13. *https://www.cdc.gov/flu/professionals/diagnosis/overview-testing-methods.htm.*
14. *Kimberlin DW, Acosta EP, Prichard MN et al. Oseltamivir pharmacokinetics, dosing, and resistance among <2 years with influenza. J Infect Dis 2013(5):709-20. doi:10.1093/infdis/jis765. Epub 2012 Dec 10.*
15. *Ronchi A, Michelow IC, Chapin KC, et al. Viral respiratory tract infections in the neonatal intensive care unit: the virion-i study. J. Pediatr 2014(165)690-6. doi: 10.1016/j.jpeds.2014. 05.054.*
16. *Coşkun O, Avci IY, Sener K, et al. Relative lymphopenia and monocytosis may be considered as a surrogate marker of pandemic influenza a (H1N1). J Clin Virol 2010(4):388-9. doi.1016/j.jcv.2010.01.007. Epub 2010 Feb 4.*
17. *Wang N, Liu X, Zhang Y, et al. Hematologic Markers of Influenza A H1N1 for Early Laboratory Diagnosis and Treatment Assessment. LabMedicine 2011(42)607-611.*
18. *Wooltorton, E. Oseltamivir (Tamiflu) unsafe in infants under 1 year old. CMAJ 2004(170):336.*
19. *FDA, Issuance letter for Tamiflu , 2009. Available at http://www.fda.gov/downloads/Drugs/DrugSafety/InformationbyDrugClass/UCM153547.pdf Accessed 8 September 2009.*
20. *Acosta EP, Jester P, Gal P, et al. Oseltamivir dosing for influenza infection in premature neonates. J. Infect Dis 2010(202)563–566. doi: 10.1086/654930.*
21. *Munoz FM. Influenza virus infection in infancy and early childhood. Paediatr. Respir. Rev 2003(4)99–104. doi: 10.1016/S1526-0542(03)00027-7.*
22. *Matheson NJ, Harnden AR, Perera R, et al. Neuraminidase inhibitors for preventing and treating influenza in children. Cochrane Database Syst Rev 2004(24):CD002744. doi: 10.1002/14651858.CD002744.pub2.*

Tablo 1:İnfluenza virüs antijeni pozitif saptanan yenidoğan bebeklerin demografik, klinik ve laboratuvar bulguları

		Hematolojik bulgular					
Postnatal yaş/ Gestasyonel yaş	**Semptomlar**	**Lökosit (10^3 /uL),**	**Hematokrit (%)**	**Trombosit (10^3 /uL)**	**Periferik yayma**	**C-Reaktif protein (mg/L)**	**Akciğer grafisi**
52 gün/40 hafta	Tartı almama, emerken yorulma	10420	33	416000.	lenfosit: %72 **monosit: %11** **nötrofil: %15 (ANS*: 1560)** %2 eozinofil	0.75	Normal
30 gün/35 1/7 hafta	Göz muayenesi sırasında ağır apne	7580	41	215000	%73 lenfosit **%12 monosit** % 5 eozinofil **%10 nötrofil (ANS: 758)**	**13.04**	Normal
7 gün/40 1/7	Semptom yok	13170	29	351000	lenfosit: %72 **monosit: %11** **nötrofil: %15 (ANS: 1975)** eozinofil: % 1 bazofil: % 1	3.3	Normal
14 gün/39 hafta	Emerken yorulma	7500	33	325000	lenfosit: %56 **monosit: %13** bazofil: %1 eozinofil: %3 nötrofil: %27 (ANS: 2000)	0.2	Normal
12 gün/41 4/7 hafta	Yüksek ateş, burun tıkanıklığı, öksürük	11190	46	402000	lenfosit: %39 **monosit: %10** nötrofil: %51 (ANS: 5700)	4.09	Bilateral retikulonoduler infiltrasyon

*Kısaltmalar: *ANS: Absolü nötrofil sayısı*

FT116

Çoçuklarda Sağlık Okuryazarlığının Geliştirilmesinde Aile Eğitimi

Selin YURDAKUL, Şerife KOÇ

Ereğli Devlet Hastanesi, Konya, Karamanoğlu Mehmetbey Üniversitesi Sağlık Bilimleri Fakültesi, Karaman

Ülkenin gelişmişlik düzeyi göstergelerinden bir tanesi de çocuk sağlığıdır. Günümüzde teknolojik gelişmeler, değişen yaşam şekilleri ve artan kronik hastalıklar ile birlikte sağlık sistemi bireylerin sağlıklarını koruma ve geliştirmeyi benimsemesi, sağlık hizmetlerine aktif katılım ve kendi sağlıkları konusunda karar verme yetisine sahip olunmasını gerektirmektedir. Bu durum sağlık okuryazarlığı kavramını ön plana çıkarmıştır. Sağlık okuryazarlığı sağlık eğitiminin bir sonucu olup bireylerin sağlık davranışlarına etki eden önemli bir faktördür. Sağlığın korunması ve geliştirilmesinde bireylerin kendi sağlık sorumluluklarını alabilmeleri için sağlık okuryazarlık bilgi ve becerisi kazanmış olmaları gerekmektedir. Sağlıklı yaşam biçiminin benimsenmesi ve olumlu davranışların sergilenmesi için sağlık okuryazarlığının çocukluk döneminde geliştirilmesi önemlidir. Çocuklarda olumlu sağlık davranışlarının kazanılmasında sağlık okuryazarlığı önemli bir faktördür. Düşük sağlık okuryazarlık düzeyindeki çocukların daha kötü sağlık davranışları sergiledikleri belirlenmiştir. Çocukların ilk toplumsallaştıkları ve kişiliklerinin geliştiği, kültür, eğitim öğretim ve yaşantılar ile sağlık davranışlarının benimsenmesine etki eden çevre ailedir. Düşük sağlık okuryazarlık düzeyine sahip ebeveynlerin daha yüksek sağlık okuryazarlık düzeyindeki ebeveynlere göre daha düşük sağlık bilgisine sahip oldukları ve çocuklarının daha kötü sağlık davranışları sergiledikleri saptanmıştır. Ülkelerin gelişmişlik düzeyini arttırmada ve sağlık göstergelerinin iyileştirilmesinde önemli bir faktör olan sağlık okuryazarlığını yükseltmek adına aile eğitimi önemlidir.Ebeveynlerin sağlık okuryazarlık şekli kadar, çocukların da okuryazarlık deneyimleri aileleri tarafından şekillenmektedir. Normal gelişim gösteren ya da özel gereksinime ihtiyaç duyan çocukların sadece okul eğitimine ait becerilerin gelişmesi yanında ebeveynlerinin de sağlık okuryazarlık ile ilgili eğitilerek sistemin içinde yer alması ile sağlık okuryazarlık düzeyleri gelişme gösterecektir. Bu yüzden sağlık profesyonelleri tarafından sağlık okuryazarlığı konusunda oluşturulan aile eğitim programları çocuklarda sağlık okuryazarlığının geliştirilmesinde önemli etki sağlayacaktır.

Anahtar kelimeler:*çocuk, sağlık okuryazarlığı, aile eğitimi*

Abstract

One of the indicators of development level of the country is child health. Nowadays, technological developments, changing life styles and increasing chronic diseases together with the health system require individuals to adopt the protection and development of their health, active participation in health services and the ability to make decisions about their own health. This situation brought the concept of health literacy to the forefront. Health literacy is a result of health education and is an important factor affecting the health behaviors of individuals. Individuals must acquire health literacy knowledge and skills in order to take their own health responsibilities in the protection and development of health. In order to adopt a healthy lifestyle and to exhibit positive behaviors, it is important to develop health literacy in childhood. Health literacy is an important factor in acquiring positive health behaviors in children. It was determined that children with low health literacy level exhibited worse health behaviors. The environment in which children first socialize and develop their personalities is the family that influences the adoption of culture, education and experiences and health behaviors. It was found that parents with a lower level of health literacy had lower health knowledge than their parents with higher levels of health literacy and their children had worse health

behaviors. Family education is important in order to increase health literacy, which is an important factor in increasing the level of development of countries and improving health indicators.As well as the health literacy of parents, the literacy experiences of children are shaped by their families. The health literacy levels of the children with normal development or need of special needs will be improved by being educated not only about school education skills but also by parents' education about health literacy. Therefore, family education programs established by health professionals on health literacy will have a significant impact on the development of health literacy in children.

Key words: *child, health literacy, family education*

Giriş

Temel olarak okuma yazma becerilerine sahip olmak şeklinde tanımlanan okuryazarlık, geniş anlamda bireylerin bilgisini potansiyelini geliştirmesi, amaçlarına ulaşması ve sosyal yaşamını aktif bir şekilde sürdürebilme yeteneği şeklinde tanımlanmaktadır (1).Okuryazarlık becerisi, bireylerin sağlıklı yaşam biçimi benimsemesini ve yaşam kalitesini artıran becerilerin başında yer almaktadır. Okuryazarlık sadece örgün eğitim ve öğretim için gereken uygulamalar değildir. Sağlıkla ilgili bilgi ve becerilerin farklı zaman ve durumlarda belli amaçlara yönelik kendiliğinden kullanılabilmesi olarak tanımlanan sağlık okuryazarlığı çocuklara toplumsal yaşamı ve sağlıklı yaşamı öğretmede kolaylaştırıcı bir öğedir. Okulda sağlanan eğitimin yanı sıra ev ortamında ailenin katılımı ve işbirliği ile farklı olanaklar sağlanması çocuklarda sağlık okuryazarlığı bilgi ve becerisinin geliştirilmesi ve yaşam boyu devam etmesi için çok önemlidir (2).

Fiziksel ve bilişsel yapıda meydana gelen değişiklikler gibi etkenler çocukların öz bakımlarını, yeterliliklerini, sunulan hizmetlerin kullanım şekillerini ve sağlık personelleri ile iletişimini etkilemektedir. Bireylerin örgün eğitim ve öğretim kurumlarından aldıkları eğitimin yanı sıra sağlık okuryazarlığı bilgi ve becerisi kazanmaları; kendi ve yakınlarının sağlık hizmetlerinden yararlanma, bilgi alma, üzerine düşen sorumlukları ve haklarını bilme, kendi sağlıkları ile ilgili sağlık personeli ile doğru iletişim kurabilme ve birlikte karar almayı da beraberinde getirecektir. Sağlık okuryazarlığı sağlığı geliştirici, koruyucu hizmetler ve hastalık durumunda tedavi ve bakım hizmetlerine ilişkin temel düzeyde sağlık bilgileri ile hizmetleri etkin bir şekilde edinebilmeyi, yorumlamayı ve anlayabilmeyi kapsar (3).

Çocukların tüm yaşamını etkileyecek olan olumlu sağlık alışkanlıklarının ve davranışların erken yaşlarda geliştirilmesi çok önemlidir Çocukların olumlu sağlık davranışlarının kazanılmasında sağlık okuryazarlığı önemli bir faktördür. Düşük sağlık okuryazarlık düzeyindeki çocukların daha kötü sağlık davranışları sergiledikleri belirlenmiştir. Çocukların sağlık okuryazarlık düzeyine etki eden pek çok faktör bulunmaktadır. Aile, çocukların ilk toplumsallaştıkları, kişiliklerinin geliştiği, kültür, eğitim öğretim ve yaşantılar ile sağlık davranışlarının benimsenmesine etki eden en önemli çevre olması bakımından çocukların okuryazarlık düzeyleri aileleri tarafından etkilenmektedir. Düşük sağlık okuryazarlık düzeyine sahip ebeveynlerin daha yüksek sağlık okuryazarlık düzeyindeki ebeveynlere göre daha düşük sağlık bilgisine sahip oldukları ve çocuklarının daha kötü sağlık davranışları sergiledikleri saptanmıştır. Çocukluk çağında kazanılan alışkanlıkların yetişkinlik dönemine etki ettiği gerçeğinden hareketle çocuklarda sağlık okuryazarlığının geliştirilmesi ve olumlu sağlık davranışlarının kazandırılması için ebeveynlere yönelik sağlık personelleri tarafından hazırlanan sağlık okuryazarlığı ile ilgili aile eğitim programları çocuklarda sağlık okuryazarlığının geliştirilmesinde önemli etki sağlayacaktır.Bu anlamda pediatri hemşireleri ve okul sağlığı hemşirelerine büyük görev ve sorumluluklar düşmektedir (4).

Bu çalışmanın amacı, çocuk sağlığını koruma ve geliştirmede önemli konular arasında yer alan sağlık okuryazarlığını irdelemek ve çocuklarda sağlık okuryazarlığını geliştirmedeaile eğitiminin önemini vurgulamaktır.

Çocuklarda Sağlık Okuryazarlığının Geliştirilmesinde Aile Eğitiminin Önemi

Çocuklar anne karnından yetişkinlik dönemine kadar belirli oranlarda ebeveynlerine bağımlıdır. Çocuklara doğumdan itibaren daha iyi bir ebeveynlik yapılması ve daha iyi bakım sunulması için ebeveynlerin sağlık ile ilgili temel bilgi ve becerilere sahip olması gerekmektedir. Ebeveynlerin sağlık okuryazarlık düzeyi kendilerinin ve çocuklarının sağlık bakımını üstlenmelerini, sağlık bakımını yerine getirmelerini, olumlu sağlık davranışlarını sergilemelerini ve sağlık hizmetlerinden yararlanma durumlarını etkileyecektir. Sağlık okuryazarlık düzeyi yüksek olan ebeveynlerin kendilerinde ve çocuklarında daha iyi sağlık sonuçları, daha olumlu sağlık davranışları ve sağlık hizmetlerinden daha fazla yararlanma gibi olumlu etkileri olacaktır (5; 4).

Çocukların ilk toplumsallaştıkları ve kişiliklerin geliştiği, olumlu ya da olumsuz etkileri içerisine alan çevre ailedir. Aile aynı zamanda eğitim ve öğretim yeridir. Çocukların sağlıklı gelişimlerinin devam edebilmesi için anne, babaların ve ailenin diğer bireylerinin çocukların eğitimine ve gelişimine katkı sağlamaları ve bunun gerçekleşmesi için de ailenin katılımı ve aile üyelerinin eğitilmesi gerekir. Son yıllarda Milli Eğitim Bakanlığı çocukların eğitimi ve gelişimine katkı sağlanması amacıyla aile eğitimi ve aile katılımı için çeşitli programlar başlatmıştır. 2006 yılında uygulamaya başlanan 36-72 aylık anaokulu programları ile okul öncesi eğitim ve öğretimde ailenin planlı ve programlı bir şekilde katılmasını sağlamak amaçlanmıştır.2006 yılında yayınlanan bir yönetmelikte özel gereksinimi olan çocukların eğitiminde aile ile işbirliği yapmanın gerekliliği vurgulanmıştır (2; 6; 7).Milli Eğitim Bakanlığı tarafından 2010 yılında Aile Eğitim Programı uygulanmaya başlanmış çocuğun gelişim dönemlerine özgü bakımı gelişimi ve eğitimi ile ilgili bilgi beceri ve tutum kazandırmak amaçlanmıştır. Tüm bu gelişmeler çocukların sağlıklı gelişimi ve eğitimi için aile eğitiminin ne kadar gerekli olduğunun bir göstergesidir (2; 8).

Çocukların okuryazarlık düzeyi; ebeveynlerin sağlık okuryazarlık düzeyi kadar, ailedeki yaşantı ve deneyimlerden de etkilenmektedir. Çocukların olumsuz çevre şartlarında maruz kalması sonucu yaşıtlarına göre gelişimlerini geride kalmasına neden olmaktadır. Ailede yaşanan sosyo-ekonomik yoksulluk eğitim ve öğretim yoksunluğuna, uyaran eksikliğine, çocukları ile faaliyet yapamamalarına neden olmaktadır. Özellikle sosyo-ekonomik düzeyi düşük olan ailelerde sağlık okuryazarlığının daha düşük olduğu belirlenmiştir (9). Bu yüzden özellikle düşük sosyoekonomik ve düşük eğitim düzeyine sahip ailelere eğitim verilmesi önem arz etmektedir.

Ebeveynlerin sağlık okuryazarlığı ile çocukların sağlık bakımı ve sağlık davranışları arasında bir ilişki bulunmaktadır. Brezilya'da yapılan bir çalışmada sağlık okuryazarlık düzeyi düşük olan ebeveynlerin çocuklarının diş çürüğü prevalansı daha yüksek bulunmuştur. Ebeveynlerin ağız sağlığı okuryazarlığının geliştirilmesi ağız sağlığı uygulanmalarının ebeveynlerin kendilerinde ve çocuklarında doğru uygulanmasını sağlayarak diş çürüklerinin önlenebileceği belirtilmiştir (10). Okul öncesi programlara katılan ailelerin ev ortamında da çocukların algılarını arttırıcı ortamlar oluşturabildiği saptanmıştır (11). Bunun yanında aile katılımı ile desteklenen programlarda çocukların yeni kazandırılması istenen hedef ve davranışları daha kolay anlayıp uyguladıkları görülmüştür. Adölesan cinsel sağlığını geliştirmeyi hedefleyen ve ebeveynlere yönelik medya farkındalığı oluşturulan web tabanlı bir çalışma sonucunda ebeveyn-ergen iletişiminde, ergenlerin cinsel sağlık davranışlarında ve kontrasepsiyon/koruyucu tutumlarında olumlu sonuçlar elde edilmiştir (12).

Annenin sağlık okuryazarlığı ile çocuk sağlığı, çocuk bakımı, eğitimi ve çocukların sosyal imkanlardan yararlanmaları arasında bir ilişki bulunmaktadır. Annede meydana gelen değişim ve annenin yeni bilgiler edinmesi çocuklarda aynı zamanda olumlu davranışların gelişmesini sağlamaktadır (13; 14; 15). Gebelerin ve eşlerinin anne sağlığı koruma ve geliştirme programlarına dahil edilmesinin düşük sağlık okuryazarlık düzeyinin engellenmesinde ve gebelikte oluşan risk faktörlerini azaltılmasında önemli yararlar sağlayacağı (16), annelerin sağlık okuryazarlık düzeylerinin arttırılması ile bebek ölümlerinin önüne geçilmesi sağlanacağı (14) yapılan çalışmalarda gösterilmiştir. Çocuklara aşı uygulanmasında kadın okur yazarlık düzeyinin yükseltilmesinin aşıya

verilen önemi etkilediği ve aşı reddini azalttığı belirlenmiştir. Çocuklarda bağışıklama ve aşı uygulamalarında annenin sağlık okuryazarlık düzeyinin düşük seviyede olması daha fazla aşı reddinin yapılmasına ve aşı uygulamaları konusunda daha isteksiz davranmalarına sebep olduğu belirtilmektedir. Ayrıca yüksek sağlık okuryazarlık düzeyindeki ebeveynlerin aşının etkileri ve yan etkileri konusunda daha bilgili oldukları, aşı uygulamaları sırasında daha sakin oldukları ve hastaneye başvuru sıklıklarının daha az olduğu saptanmıştır. Çocuk sağlığının geliştirilmesinde kadınların/annelerin eğitilmesi gerektiği ortaya çıkmıştır (17; 18).Annenin sağlık okuryazarlığı ile çocukların sosyal imkanlardan yararlanmaları arasında da bir ilişki bulunmaktadır.Sağlık okuryazarlığı düşük olan annelerin çocuklarının iki yaşına kadarki dönemde çocuk yardımı gibi sosyal yardımlara ulaşma ve başvurma ihtimalinin sağlık okuryazarlığı yüksek olan annelere göre daha düşük olduğu belirlenmiştir (15).Bu yüzden çocukların bakımı ve eğitimi sorumluluğunu daha çok annelerin üstlendiği ülkemizde özellikle annelerin sağlık okuryazarlığının geliştirilmesi çocuk gelişimi ve eğitiminde önemli faydalar sağlayacaktır. Anne sağlık okuryazarlığının geliştirilmesi ile sosyal yardım hizmetlerine ailelerin katılımlarının arttırılması, çocuklarının sağlık kuruluşlarından daha aktif yardım almalarının sağlanması, yardıma muhtaç ailelerin belirlenerek ailelere çocuk yardımının ulaştırılması gibi faydalar da sağlanacaktır.

Ebeveynlerin sağlık okuryazarlığı özel bakım gereksinimleri olan çocukların sağlığı ve bakımının sürdürülmesi için çok önemlidir. Özellikle kronik hastalığa sahip çocuk ve ergenlerin ailelerinin özel gereksinimleri olması, kronik hastalığın özbakım becerileri gerektirmesi, hastalık yönetimi bilgi ve becerisi gerektirmesi, daha sık sağlık kurumlarına başvuru gerektirmesi açısından hastalık öz yönetiminin sağlanmasında ve yetişkin sağlık sistemine geçişin sağlanmasında kronik hastalığı olan çocuk/ergenler ve ailelerinin sağlık okuryazarlık düzeyinin yükseltilmesi önemlidir (19).

Sonuç

Çocukların sağlıklı gelişiminin sağlanması ve sürdürülmesi için ebeveynlerin sağlık okuryazarlığının ve buna ilişkin aile eğitiminin ne kadar önemli olduğu vurgulanmıştır. Ebeveynlere sağlık okuryazarlığına ilişkin eğitimler verilmesi önemli faydalar sağlayacaktır. Sağlık okuryazarlığının geliştirilmesinde uygulanması gereken aile eğitimlerinin planlı programlı ve yapılandırılmış bir biçimde sistematik olarak, okul temelli kapsamlı, kapsayıcı ve işbirlikçi eğitim programları şeklinde sürdürülmesi gerekir. Bu eğitim programları öncesinde ebeveynlerin okuryazarlık seviyelerinin belirlenmesi eğitimin uygulanmasını ve olumlu sonuçlar elde edilmesini kolaylaştıracaktır. Ebeveynlerin okuryazarlık seviyelerinin belirlenmesi için aile okuryazarlık ölçeği geliştirilmiş ve Türk toplumuna uyarlanarak (7) Türk ailelerin sağlık okuryazarlık durumlarını değerlendirmek için kullanılabileceği ortaya konulmuştur. Ailelerin okuryazarlık düzeylerinin belirlenmesi çocukların gelişimi açısından çok önemlidir. Ailelerin okuryazarlık düzeylerinin belirlenerek okuryazarlık düzeyi düşük olan ailelere yönelik daha geniş eğitim programları düzenlenmelidir(9; 7; 11).

Aile katılımının ve aile eğitiminin çocuk ve eğitim sistemine de faydaları bulunmaktadır. Eğitim sisteminde aile katılımı ile yürütülen eğitimin çocuk, ailesi, öğretmenler açısından yarar sağladığı bilinmesine rağmen okullarda aile katılımının çeşitli sebepler nedeniyle istenilen düzeyde gerçekleşmediği ve yapılan bir çok faaliyetin ise kağıt üzerinde yer aldığı belirtilmiştir (6; 20; 4).

Çocukların sağlığının korunması ve sürdürülmesi, çocuk sağlığı göstergelerinin iyileştirilmesi yanında eğitim sürecinin kesintisiz ve kaliteli bir şekilde sürdürülmesi açısından da oldukça önemlidir.Normal gelişim gösteren ya da özel gereksinime ihtiyaç duyan çocukların sadece okul eğitimine ait becerilerin gelişmesi ile değil ebeveynlerin de sistemin içinde yer alması ile sağlık okuryazarlık düzeyleri gelişme gösterecektir. Çocuklarda sağlık okuryazarlığını arttırmaya yönelik aile eğitimlerinin düzenlenmesi ve bu eğitimlerin çocukların sağlık okuryazarlığını geliştirecek düzeyde çeşitli sağlık konuları da eklenerek okul, aile, sağlık profesyonelleri ile işbirlikçi bir şekilde yürütülmesi gerekmektedir. Ayrıca çocuklarda sağlık okuryazarlığının geliştirilmesinde; aile eğitim

müdahaleleri ile gerçekleştirilecek deneysel çalışmalara ve bu çalışmaların sonuçlarını uygulamaya yansıtacak çeşitli politikalara gereksinim vardır.

Kaynakça

1. *Uğurlu, Z. (2011). Sağlık Kurumlarına Başvuran Hastaların Sağlık Okuryazarlığının Ve Kullanılan Eğitim Materyallerinin Sağlık Okuryazarlığına Uygunluğunun Değerlendirilmesi. Başkent Üniversitesi Sağlık Bilimleri Enstitüsü Halk Sağlığı Anabilim Dalı Doktora Tezi.*
2. *Gül, G. (2007). Okuryazarlık Sürecinde Aile Katılımının Rolü. Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi, 8 (1), 17-30.*
3. *Güven, A. (2016). Sağlık okuryazarlığını etkileyen faktörler ve sağlık okuryazarlığı ile hasta güvenliği ilişkisi. Hacettepe üniversitesi sosyal bilimler enstitüsü sağlık kurumları yönetimi anabilim dalı yüksek lisans tezi . Ankara.*
4. *Çınar, S., Ay, A., & Boztepe, H. (2018). Çocuk Sağlığı ve sağlık okuryazarlığı. Sağlıkta Performans Ve Kaite Dergisi, 14 (2), 25-39.*
5. *Dewalt, D., Ashley, H., & Cecil, M. (2009). Health Literacy and Child Health Outcomes: A Systematic Review of the Literature. American Academy Of Pediatrics .*
6. *Çakmak, Ö. (2010). Okul Öncesi Eğitim Kurumlarında Aile Katılımı. Abant İzzet Baysal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 1.*
7. *Kılıç, F., Doğan, C., & Özden, B. (2017). Aile okuryazarlığı ölçeği Geçerlik Çalışması. HAYEF:Journal of Education, 14 (2), 203-2019.*
8. *Hayat boyu öğrenme genel müdürlüğü. http://aileegitimi.meb.gov.tr/menu.php?id=1&i=895367. (Erişim Tarihi:18.11.2019).*
9. *Winkelman, T., Cadwell, M., & Davis, M. (2016). Promoting Health Literacy for Children and Adolescents. Pedıatrıcs Offıcıal Journal Of The Amerıcan Of Pedıatrıcs, 138 (6), 2016-1937.*
10. *Montes, G., Bonotto, D., Ferreira, F., Menezes, J., & Fraiz, F. (2019). Caregiver's Oral Health Literacy İs Associated With Prevalence Of Untreated Dental Caries İn Preschool Children. Cien Saude Colet, 24 (7), 2737-2744.*
11. *Bhadat, K., Howart, D. E., & Aldoory, L. (2018). The Relationship Between Health Literacy And Health Conceptualization:An Exploratory Study Of Elementary School-Aget Children. Health Commun, 33 (2), 131-138.*
12. *Scull, M., Malik, C., Keefe, E., & Schoemann, A. (2019). Evaluting The Short-Term Impact Of Media Aware Parent,A Web-Based Program For Parents With The Goal Of Adolescent Sexual Health Promotion. Journal Of Youth And Adolescence , 1-21.*
13. *Bekman, S., & Koçak, A. (2011). Beş Ülkeden Anneler Anlatıyor II: Anne-Çocuk Eğitim Programı'nın Etkileri. Eğitim Ve Bilim Dergisi, 36 (161).*
14. *Mckinn, S., Linh, D., Foster, K., & Mccaffery, K. (2019). Distributed Health Literacy İn The Maternal Health Context İn Vietnam. Health Lit Res Pract, 3 (1), 31-42.*
15. *Pati, S., Siewert, E., Angre, W., Siraj, B., Colixte, R., & Cnann, A. (2014). The İnfluence Of Maternal Health Literacy And Child!s Age On Participation İn Social Welfare Programs. Matem Child Health J. , 1176-11*
16. *Mobley, S., Thomas, S., Sutherland, D., Hudgins, J., Ange, B., & Johnson, M. (2014). Maternal Health Literracy Progression Among Rural Perinatal Women. Maternal And Child Health Journal, 18 (8), 1881-1892.*
17. *Ertuğrul, B. (2019). Ebeveynlerin sağlık okuryazarlığı düzeyinin çocukluk dönemi aşılarına yönelik tutum ve davranışlarıyla ilişkisi. Yozgat bozok üniversitesi-kırıkkale üniversitesi sağlık bilimleri ensttitüsü hemşirelik anabilim dalı yüksek lisans tezi . Yozgat.*
18. *Boachie, M. K., & Sobiesuo, P. (2016). Female Literacy And Immunization Uptake:A Macro Level Evidence From Ghana. TAF preventive medicine bulletin, 15 (6), 545-550.*
19. *Chisolm, D., Sarkar, M., Kelleher, K., & Sanders, L. (2015). Predictors of health literacy and numeracy concordance among adolescent with special health care needs and their parents. J Health Commun, 20 (02), 43-49.*
20. *Ünüvar, P. (2010). Aile Katılımı Çalışmalarına Yönelik Ebeveyn Ve Öğretmen Görüşlerinin Karşılaştırılması. Kastamonu Eğitim Dergisi, 18(3), 719-730.*

FT117

Langerhans cell histiocytosis with histopathological features, single center experience

Histopatolojik özellikleriyle langerhans hücreli histiyositoz, tek merkez deneyimi

Fahriye KILINÇ

Necmettin Erbakan Üniversitesi, Meram Tıp Fakültesi, Tıbbi Patoloji Anabilim Dalı, Konya

Aim:
Langerhans cell histiocytosis (LCH) is a rare histiocytic disease, occurring in 2-10 children per million and 1-2 adults per million, and may have a wide variety of clinical manifestations. Infiltration can develop in almost any organ (the most commonly reported organs are bone, skin, lymph nodes, lungs, thymus, liver, spleen, bone marrow and central nervous system). We aimed to evaluate the histopathological features of the lesions and review the literature in pediatric patients referred to our department for pathological examination and diagnosed as LCH.

Materials and Methods:
Retrospectively, childhood cases diagnosed with LCH in 2012-2019 were screened by hospital automation system. Age, gender, lesion localizations of the cases were recorded and histopathological features were reviewed.

Results:
5 male and 5 female total of 10 cases were detected. The youngest 3 were under the age of 1, the oldest was 16 years old. Localization; 6 of the cases were bone (2 femur, 3 skull bone, 1 scapula), 2 skin, 1 bone and lymph node, 1 lung and lymph node. Histopathology revealed histiocytic cells with grooved nuclei, eosinophilic cytoplasm with eosinophils, and neutrophils in some cases. Immunohistochemical CD1a staining was positive in all cases and positivities were present with S100 in applied 9 cases, CD68 in 4. Ki67 proliferation index was studied in 2 patients with bone localization, 15% and 20%.

Conclusion:
The term LCH is due to the morphological and immunophenotypic similarity of the infiltrating cells of this disease to Langerhans cells specialized as dendritic cells in the skin and mucous membranes. But these cells do not originate from the Langerhans cells of the skin, but from the myeloid progenitor cells of the bone marrow. Several studies have shown the BRAF-V600E mutation in LCH. The term LCH is currently recommended; histiocytosis-X, Letterer-Siwe disease, Hand-Schüller-Christian disease and diffuse reticuloendotheliosis were abandoned. The term eosinophilic granuloma may be used in the presence of a single lesion, especially in lytic bone lesions. As in our cases, it usually occurs with single or multiple osteolytic bone lesions and to a lesser extent with other organ involvement. It is characterized by infiltration of grooved nuclei histiocytes, accompanied by lymphocytes, neutrophils, macrophages and eosinophils, and areas of fibrosis and necrosis may develop. Immunohistochemical S100, CD1a, Langerin are positive, CD68 is variable. In the differential diagnosis, acute myelomonocytic leukemia, lymphoma, mastocytosis, osteomyelitis, sinus histiocytosis with massive lymphadenopathy should be considered.

Keywords: *Langerhans cell histiocytosis, Childhood, Histopathology*

Özet

Amaç: LHH (Langerhans hücreli histiyositoz) nadir histiyositik bir hastalıktır, her yıl milyonda 2-10 çocukta ve milyonda 1-2 erişkinde karşılaşılır, oldukça çeşitli klinik tablolarla hemen her organda infiltrasyon gelişebilir (en sık bildirilen organlar; kemik, deri, lenf nodları, akciğerler, timus, karaciğer, dalak, kemik iliği ve santral sinir sistemidir). Bölümümüze patolojik inceleme için gönderilen ve LHH tanısı alan pediatrik olgularda lezyonların histopatolojik özelliklerini değerlendirmeyi ve literatür bilgilerini gözden geçirmeyi amaçladık.

Gereç ve Yöntem:
Retrospektif olarak, 2012-2019 yıllarında LHH tanısı alan çocukluk çağındaki olgular hastane otomasyon sistemiyle taranarak tespit edildi. Olguların yaş, cinsiyet, lezyon lokalizasyonları, histopatolojik özellikleri gözden geçirildi.

Bulgular:
5'i erkek, 5'i kız 10 olgu tespit edildi. En küçük 3'ü 1 yaşından küçüktü, en büyüğü 16 yaşındaydı. Lokalizasyon; olguların 6'sında kemik (2'sinde femur, 3'ünde kafa kemiği, 1'inde skapula), 2'sinde deri, 1'inde kemik ve lenf nodu, 1'inde akciğer ve lenf noduydu. Histopatolojilerinde tümünde çentikli nükleuslu, eozinofilik sitoplazmalı histiyositik hücreler ve eozinofiller, bazı olgularda nötrofiller mevcuttu. Tüm olgularda immünohistokimyasal CD1a pozitifti ve S100 uygulanan 9 olguda, CD68 uygulanan 4 olguda pozitiflik mevcuttu. Ki67 proliferasyon indeksi kemik yerleşimli 2 olguda çalışılmıştı, %15 ve %20 oranlarındaydı.

Sonuç:
LHH terimi bu hastalıktaki infiltrasyonu oluşturan hücrelerin deri ve mukozalarda dendritik hücreler olarak özelleşmiş Langerhans hücrelerine morfolojik ve immünfenotipik olarak benzemeleri nedeniyledir. Fakat bu hücreler derinin Langerhans hücrelerinden değil kemik iliğinin myeloid progenitör hücrelerinden köken alır. Çeşitli çalışmalarda LHH'da BRAF-V600E mutasyonu gösterilmiştir. Günümüzde LHH terimi önerilmektedir; geçmişte kullanılan histiyositozis-X, Letterer-Siwe hastalığı, Hand-Schüller-Christian hastalığı ve diffüz retiküloendoteliozis terkedilmiştir. Tek lezyon varlığında, özellikle litik kemik lezyonunda eozinofilik granülom terimi kullanılabilmektedir. Olgularımızdaki gibi, çoğunlukla tek veya multipl osteolitik kemik lezyonlarıyla, daha az oranda diğer organ tutulumlarıyla ortaya çıkar. Çentikli nükleuslu histiyositlerin infiltrasyonuyla karakterlidir, lenfositler, nötrofiller, makrofajlar ve eozinofiller eşlik eder, fibrozis, nekroz gelişebilir. İmmünohistokimyasal S100, CD1a, Langerin pozitiftir, CD68 değişkendir. Ayırıcı tanıda lokalizasyona göre akut myelomonositik lösemi, lenfoma, mastositoz, osteomyelit, masif lenfadenopatili sinüs histiyositoz düşünülmelidir.

Anahtar Kelimeler: *Langerhans hücreli histiyositoz, Çocukluk çağı, Histopatoloji*

Introduction
Langerhans cell histiocytosis (LCH) is a rare histiocytic disease that can affect many organ systems. Lesions may vary from solitary bone involvement to aggressive disease with multisystem involvement (1). Although the etiology is not clear, it is thought to be a neoplastic process as a result of some studies showing the presence of monoclonality in histiocytes (1,2).

Materials and Methods

Retrospectively, childhood cases diagnosed with LCH in 2012-2019 were detected by hospital automation system. Age, sex, lesion localization and histopathological features of the cases were reviewed.

Results

5 cases were male and 5 cases were female. The youngest was 4 months, the oldest was 16 years old. Localization; 6 of the cases were bone (femur in 2, skull bone in 3, scapula in 1), skin in 2, bone and lymph node in 1, lung and lymph node in 1. Histopathology revealed histiocytic cells and eosinophils with grooved, folded or lobed nuclei, eosinophilic cytoplasm in all, and neutrophils in some cases. Mitotic figures without atypical forms, necrosis foci and eosinophil abscesses were observed. Immunohistochemical CD1a was positive in all cases and there were S100 positivity in applied 9 cases and CD68 positivity in applied 4 cases. Ki67 proliferation index was studied in 2 patients with bone localization, and it was in the ratio of 15% and 20% (Figure 1, figure 2 and table).

Discussion

In 1953 Lichtenstein described three conditions associated with the proliferation of histiocytes: eosinophilic granuloma of the bone, Hand-Schüller-Christian disease and Letterer-Siwe disease. Letterer-Siwe disease was recommended acute diffuse form with skeletal, skin and visceral involvement, Hand-Schüller-Christian disease was chronic diffuse form including skeletal involvement, exophthalmus and diapedes insipitus triad, and eosinophilic granuloma was usually as unifocal and limited form with skeletal involvement (3). Today, the term LCH is preferred, histiocytosis-X, Letterer-Siwe disease, Hand-Schüller-Christian disease and disseminated reticuloendotheliosis remained as historical terms, the term eosinophilic granuloma is sometimes used in solitary bone involvement (2). LCH is under the heading of tumors originating from langerhans cells in the histiocytic and dendritic cell neoplasms group in 2017 WHO classification of tumors of hematopoietic and lymphoid tissue (4).

LCH is the neoplastic clonal proliferation of langerhans cell type cells (4). Due to the monoclonality of histiocytic cells, this disease is thought to be neoplastic (3). Pathological langerhans cells carrying BRAF V600E mutation have been identified in CD34 + stem cells and more mature myeloid dendritic cells in LCH patients, thus showing a clonal myeloid neoplasia (5). Recurrent BRAF V600E mutation has been identified in patients with multisystem involvement (1). IL1 cycle model is recommended in pathogenesis. IL17 levels in the lesion and blood, and tyrosine phosphatase SH1 levels in the lesion are high especially in patients with multiple organ involvement (4). Loss of heterozygosity for some tumor suppressor genes has been reported in bone lesions and in some lung lesions (6). Pulmonary LCH is more common in adults and almost always associated with smoking (6,7), pulmoner involvement occurs in 25% of all pediatric cases usually as part of multisystem involvement. Isolated pulmonary LCH is seen 1% of pediatric cases (7).

LCH can be seen in all age groups, most common in children aged 1-3 years (8). Male predominance is reported (M/F approximately 3.7/1) (4), but no male dominance in all series (8). M/F ratio is 1 in adults (6). Five of our cases were male and 5 were female (M/F:1), 3 were younger than 1 year of age (3/10), 4 older than 3 years of age (4/10), and 3 were 1-3 years of age (3/10).

The disease is usually localized in a single region. It may be multiple foci within a single system (such as bone) or may develop more common and multisystem involvement. In general, bone and adjacent soft tissue are predominantly affected (skull, femur, vertebra, pelvic bones, ribs), and lymph node, skin and lung involvement are less common. Multifocal lesions are mostly in bone and adjacent soft tissue. In multisystem involvement, skin, bone, liver, spleen and bone marrow are affected. Gonads and kidneys are preserved (4). Skull, especially the calvaria and temporal bone are

the most predominant regions in the bone involvement, while the other bones are vertebra, jaws, ribs, pelvic bone and proximal long bones (6). In our cases, the predominant localization was bone (7/10) in accordance with the literature, and one of them had associated lymph node involvement. Bone involvement was located in femur in 3 cases, frontal bone in 2 cases, calvarium in 1 case and scapula in 1 case.

Acute disseminated multisystem involvement is most commonly seen in children younger than three years, while a milder form with a single organ is more common in older children and adults (2). A rare adult case with multisystem involvement has been reported (9). Our case with bone and lymph node involvement was 10 months old and the patient with lung and lymph node involvement was 5 years old.

LCH microscopy shows diagnostic Langerhans cell type cells (3,4). These cells have an oval nucleus, similar to coffee beans due to their longitudinal grooves (3). Nucleus can be folded, cleaved, lobulated, chromatin is thin, nucleol is not prominent, nuclear membrane is thin (4). Cytoplasm is slightly eosinophilic, moderately abundant, may contain infrequent vacuoles and very little phagocytic material, without dendritic processes unlike dermal langerhans cells (2). Nuclear atypia is minimal, mitosis is variable (1,3,4), it may be significant, but there is no atypical mitosis (4). These cells contain ultrastructural Birbeck granules (1,4). Birbeck granules are intracytoplasmic rod-shaped organelles with central striation. Occasionally there is terminal vesicular dilatation that gives the Birbeck granule the appearance of a "tennis racket" (2).

LCH lesions have a polymorphic ground with eosinophils, polymorphic leukocytes, histiocytes, lymphocytes and multinucleated giant cells, and a lesser proportion of plasmocytes (1). Benign giant cells are almost always found (3). Eosinophils can sometimes be prominent and produce abscess foci (1,4,6). Necrosis foci are common. Histiocytes generally form loose aggregates, do not form sheets (3). Langerhans cells may be predominant with eosinophils and neutrophils in the early period, Langerhans cells decrease in the late period, foamy macrophages and fibrosis increase (4). Some authors have described four phases of the disease: proliferative, granulomatous, xanthomatous and scar phases (1). In our cases, langerhans cells with pale eosinophilic cytoplasm cleaved, folded nuclei with small nucleoli and eosinophils, neutrophils, histiocytes were observed. The foci of necrosis were observed and the areas where mitosis was high were observed. It was observed that eosinophils became prominent and formed abscesses. Multinucleated giant cells were found also.

Immunohistochemically, langerhans cells express CD1a, Langerin (CD207) and vimentin (1,4). CD1a stains the cell surface with a perinuclear dot (4). S100 protein shows nuclear and cytoplasmic positivity (4,6). CD68 positivity is variable (1). CD45 and lysozyme expression is low. B cell and T cell markers (except CD4), CD30 and follicular dendritic cell markers were negative. Ki67 proliferation index is variable (4). In immunohistochemical profile of our cases, CD1a was positive in all cases (10/10), S100 was positive in applied 9 cases (9/9), CD68 was positive in applied 4 cases (4/4), Ki67 index was studied in 2 cases and it was 15% and 20%.

It is said that pathological findings may vary according to the involved region (2). Mass lesion is seen in bone, skin, cerebrum, hypothalamus and pituitary involvement, while demyelination of the cerebellum may cause destruction (2). Intrahepatic biliary involvement is prominent in liver and progressive sclerosing cholangitis develops. In the lymph nodes, sinusoids are primarily affected, and paracortex in the second plane. Nodular red pulp involvement is seen in the spleen (4).

In differential diagnosis; other histiocytic and dendritic cell diseases, metastatic solid and hematopoietic neoplasms, hemophagocytic lymphohistiocytic and macrophage activation syndromes should be considered. Since LCH can affect many organ systems, differential diagnosis in the bone, lymph node, thymus, liver, spleen involvement with lymphomas, solid tumors, central nervous system tumors may be necessary (2).

In Rosai-Dorfman Disease, usually increased histiocytes with broad cytoplasm, and some are multinuclear are found, emperipolesis is prominent. Histiocytes are S100, CD68 positive, CD1a and langerin negative (10).
Erdheim-Chester disease is a multisystem histiocyte disease, usually seen in adults (2,11). Lipid-containing foamy cytoplasm histiocytes, lymphoid cells, and occasionally fibrosis are seen. Histiocytes are CD68 positive, CD1a, S100 and Langerin negative (1). Cases with mixed LCH and Erdheim-Chester disease (mixed histiocytosis) have been reported (2).
In osteomyelitis, granulation tissue appearance and capillary proliferation are typical (1,3), S100 and CD1a help in difficult cases (3).
Lymphomas can enter the differential diagnosis (3), showing T and B markers helps (1). No grouping and loose arrangement of histiocytic cells (3). Neoplastic cells are CD15 and CD30 positive in Hodgkin's lymphoma (1).
Juvenile xanthogranuloma is an early childhood disease caused by benign proliferation of dermal histiocytic cells in the non-langerhans cell histiocytosis group. It appears as a papule or nodule on the skin. Histology contains foamy or Tuton type giant cells (2).
Mastocytosis includes cells with granulated cytoplasm and with coarse chromatin nucleus. CD68 and CD117 are positive (1).
Multiple myeloma may enter the differential diagnosis as osteolytic bone lesions. It is distinguished by histological, immunophenotypic findings and the presence of monoclonal protein in the serum (2).
In hemophagocytic lymphohistiocytosis and macrophage activation syndrome, infiltration of non-neoplastic histiocytes occurs. Significant hemophagocytic activity is seen in the bone marrow (2). In common LCH, the bone marrow may be filled with CD68-positive macrophages, langerhans cells may not be seen, but hemophagocytosis and macrophage activation are not seen (6).
Conclusion
LCH is a histiocytic disease that can be seen at any age with single or multisystem involvement.
This rare disease was reviewed with our cases in terms of histological features and entities that can be included in the differential diagnosis.

References

1. Özkal S. Langerhans hücreli histiyositozis (langerhans hücreli granülomatozis, eozinofilik granülom, histiyositozis X). In: Dervişoğlu S, Bilgiç B, Doğanavşargil B, editors. Kemik ve eklem patolojisi multidisipliner yaklaşım. Ankara: Neyir Matbaacılık; 2018. p.383.
2. Uptodate.com [homepage on the Internet]. USA: Clinical manifestations, pathologic features, and diagnosis of Langerhans cell histiocytosis [updated 30 Jul 2019; cited Aug 2019]. Available from: uptodate.com
3. Unni KK, Inwards CY, Bridge JA, Kindblom L-G, Wold LE. Conditions that simulate primary neoplasms of bone. In: Silverberg SG, Sobin LH, editors. AFIP atlas of tumor pathology series 4, tumors of the bones and joints. Maryland: ARP Press; 2005. p. 321.
4. Weiss LM, Jaffe R, Facchetti F. Tumours derived from Langerhans cells. In: Swerdlow SH, Campo E, Harris NL et al, editors. World Health Organization Classification of Tumours of Haematopoietic and Lymphoid Tissues. Lyon: IARC Press; 2017. p.470.
5. Berres ML, Lim KP, Peters T et al. BRAF-V600E expression in precursor versus differentiated dendritic cells defines clinically distinct LCH risk groups. J Exp Med 2014 Apr 7;211(4):669-83.
6. Jaffe R. Langerhans cell histiocytosis and langerhans cell sarcoma. In: Jaffe ES, Harris NL, Vardiman JW, Campo E, Arber DA, editors. Hematopathology. Chine: Saunders; 2011. p.811.

7. Soyer T, Özyüksel G, Türer ÖB et al. Bilateral Pulmonary Langerhans's Cell Histiocytosis is Surgical Challenge in Children: A Case Report. European J Pediatr Surg Rep 2019 Jan;7(1):e8-e11.
8. Baumgartner I, von Hochstetter A, Baumert B, Luetolf U, Follath F. Langerhans'-cell histiocytosis in adults. Med Pediatr Oncol 1997 Jan;28(1):9-14.
9. Kim SS, Hong SA, Shin HC, Hwang JA, Jou SS, Choi SY. Adult Langerhans' cell histiocytosis with multisystem involvement: A case report. Medicine (Baltimore) 2018 Nov;97(48):e13366.
10. Goyal G, Ravindran A, Young JR et al. Clinicopathological features, treatment approaches, and outcomes in Rosai-Dorfman disease. Haematologica 2019 Apr 19. pii: haematol.2019.219626.
11. Milne P, Bigley V, Bacon CM et al. Hematopoietic origin of Langerhans cell histiocytosis and Erdheim-Chester disease in adults. Blood 2017 Jul 13;130(2):167-175.

Figure Legends:

Figure 1: Langerhans cell histiocytosis. **A.** Langerhans cells with folded, grooved nuclei, eosinophils and lymphocytes in the ground (200x, H/E) **B.** A mitotic figure at the center of the field (400x, H/E) **C.** CD1a staining with cell surface and perinuclear dot (200x) **D.** S100 staining with nuclear and cytoplasmic (400x).

Figure 2: Another case of langerhans cell histiocytosis. **A.** Langerhans cells, eosinophils and necrotic area at the bottom right corner (100x, H/E) **B.** CD1a staining (200x) **C.** CD68 staining (200x).

Table: Age, gender, localization and immunohistochemistry results of the cases

No	Age	Gender	Localization	Immunohistochemistry
1	3	Male	Femoral diaphysis	CD1a(+), CD68(+)
2	1	Female	Frontal bone	CD1a(+), S100(+), Ki67 %20
3	16	Female	Frontal bone	CD1a(+), S100(+)
4	0 (10 months)	Male	Femur and lymph node	CD1a(+), S100(+)
5	0 (4 months)	Female	Lomber skin	CD1a(+), S100(+), CD68(+)
6	0 (9 months)	Female	Ankle skin	CD1a(+), S100(+), CD68(+)
7	5	Male	Lung and lymph node	CD1a(+), S100(+)
8	1	Male	Scapula	CD1a(+), S100(+), Ki67 %15
9	7	Male	Femur	CD1a(+), S100(+)
10	10	Female	Calvarium	CD1a(+), S100(+), CD68(+)

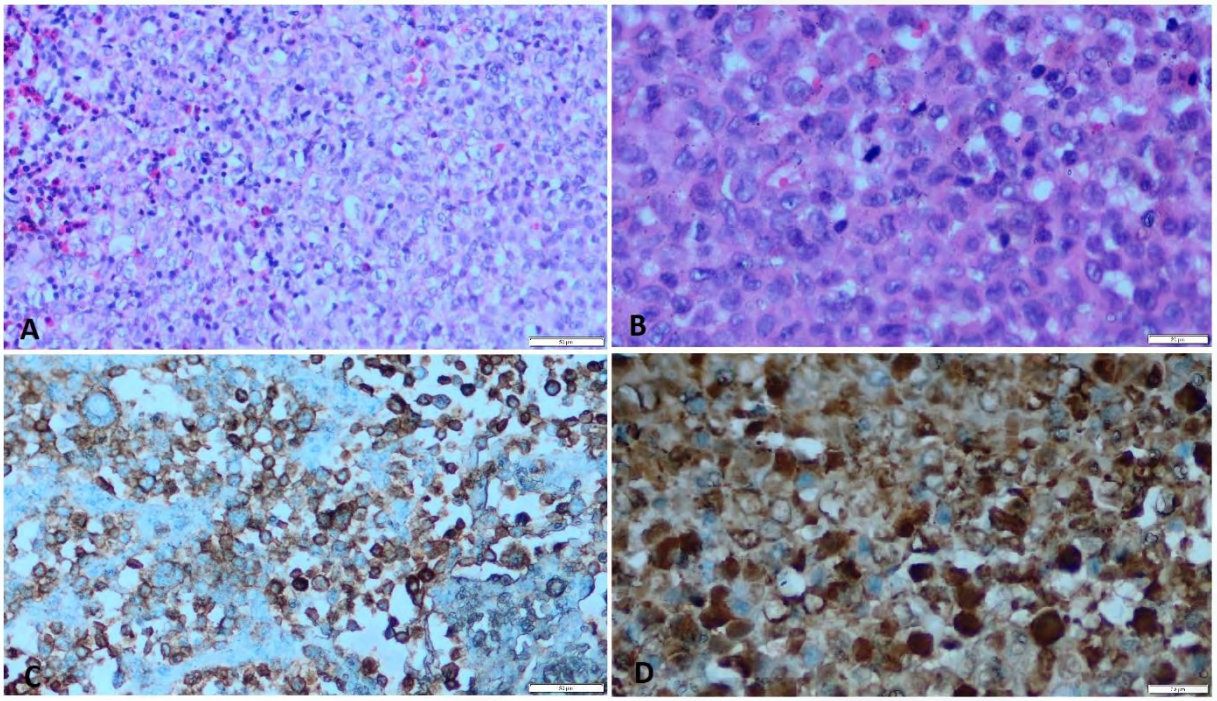


Figure 1

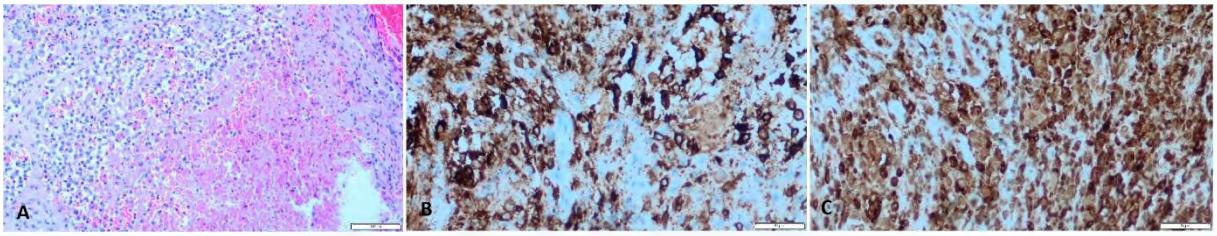


Figure 2

FT118

Türkiye'de Emzirme Konusunda Yapılan Hemşirelik Lisansüstü Tez Çalışmalarının İncelenmesi

Investigation of Nursing Graduate Theses on Breastfeeding in Turkey

İlknur M. GÖNENÇ, Menekşe Nazlı AKER**

**Ankara Üniversitesi, Hemşirelik Fakültesi, Ebelik Bölümü, Ankara, Türkiye*

Amaç:
Bu çalışma, Türkiye'de son beş yılda emzirme konusunda yapılmış hemşirelik alanındaki lisansüstü tez çalışmalarını incelemek amacıyla yapılmıştır.

Yöntem:
Çalışmada verilerin toplanması amacıyla alan yazın taraması yapılmış, daha sonra Yükseköğretim Kurulu Ulusal Tez Merkezi Veri Tabanı'nda "emzirme" anahtar kelimesi ile tarama yapılmıştır. Tarama sonunda 52 lisansüstü tez belirlenmiş ve bu tezlerin künye bilgilerine ulaşılmıştır.

Bulgular:
Ulusal Tez Merkezi Veri Tabanı'nda tüm bilim dalları incelendiğinde emzirme konusunda yapılan tezlerden %44.1'inin hemşirelik alanında yapıldığı görülmüştür. Hemşirelik alanında yapılan tezlerden 44'ü yüksek lisans, 8'i doktora düzeyinde yapılmıştır. Bu araştırmalardan 51'inde nicel, 1'inde nitel yöntem kullanılmıştır. Nicel yöntemle yapılan tezlerin 18'i yarı deneysel/deneysel, 28'i tanımlayıcı/kesitsel, 4'ü metadolojik, 1'i olgu-kontrol çalışmasıdır. En çok araştırılan konular; hemşireler tarafından verilen emzirme eğitimi ve emzirme danışmanlığının emzirme üzerine etkileri (%25), farklı gruplarda (adölesan, obez, sezaryen doğum yapan, vb.) emzirme öz yeterliliği ve emzirme başarısı (%23.07), emzirme öz yeterliliğini etkileyen faktörler (%15.4) ve emzirme ile ilgili ölçeklerin Türkçe'ye uyarlanma çalışmalarıdır (%7.7). Bu çalışmaların sadece biri babalar ile yapılmış olup, diğer bütün çalışmalarda anneler çalışmaya dahil edilmiştir.

Sonuç:
Araştırma sonuçlarına göre; hemşireler tarafından verilen emzirme eğitimi ve danışmanlığının annelerin emzirme özyeterlilik algısını, emzirme başarısını, emzirmeye yönelik olumlu uygulamalarını arttırdığı, sadece anne sütü ile beslenme süresini uzattığı, doğum sonu depresyon riskini düşürdüğü ve yaşam kalitesini yükselttiği belirlenmiştir. Emzirme eğitimlerine ve emzirme danışmanlığına gebelik döneminde başlanması ve bu eğitimlere babalarında dâhil edilmesinin önemli olduğu vurgulanmıştır. Emzirme öz yeterliliğinin anne bebek bağlanması, uyku düzeni, eşler arasındaki ilişki, evlilik uyumu, doğum sonu konfor, annenin sosyal desteği gibi faktörlerden etkilendiği saptanmıştır. Ayrıca farklı gruplardaki bireylerin ihtiyaçlarının belirlenmesi ve bu ihtiyaçlara göre emzirme danışmanlığının planlanması gerektiği belirtilmiştir.
Emzirme konusundaki lisansüstü tez çalışmaların büyük çoğunluğunun hemşireler tarafından yürütülmüş olması, hemşirelerin bu konuda önemli rolü olduğunu ortaya koymaktadır. Bu konuda kanıtların geliştirilmesi için hemşirelik alanında randomize kontrollü çalışmaların artırılması ve babaların da çalışmalara dahil edilmesi önerilmektedir.

***Anahtar kelimeler**: Emzirme, hemşirelik, bebek beslenmesi.*

Aim:
This study was conducted to examine the postgraduate nursing theses done on breastfeeding in the last five years in Turkey.

Method:
To collect the study data, the literature was reviewed, and then a search was performed on the Higher Education Council National Thesis Center Database using "breastfeeding" and "nurse" keywords. At the end of the review, 52 graduate theses were identified, and the tag information about these theses was obtained.

Findings:
The review of all branches of science on the National Thesis Center Database revealed that 44.1% of the theses about breastfeeding were conducted in the field of nursing. Of the theses carried out in the field of nursing, 44 were master's theses, and 8 were doctoral theses. Also, 51 of these studies were found to employ quantitative methods, while 1 used qualitative methods. Besides, 18 of the theses using quantitative methods were quasi-experimental / experimental, 28 were descriptive/cross-sectional, 4 were methodological, and 1 was case-control studies. Most frequently studied topics were effects of nursing education and nursing counseling on breastfeeding (25%), breastfeeding self-efficacy and success in breastfeeding in different groups (adolescents, obese, caesarean section, etc.) (23.07%), factors affecting breastfeeding self-efficacy (15.4%), and the Turkish adaptation studies of breastfeeding-related scales (7.7%). Only one of these studies was conducted with fathers, while the rest included mothers.

Conclusion:
According to the results of the study, the breastfeeding training and counseling given by nurses were determined to increase mothers' perception of breastfeeding self-efficacy, breastfeeding success, and positive practices for breastfeeding, to prolong the duration of feeding with only breast milk, to decrease postpartum depression risk, and to enhance the quality of life. Starting breastfeeding training and breastfeeding counseling during pregnancy and also including fathers in these training programs were emphasized to be important. Breastfeeding self-efficacy was determined to be influenced by factors such as mother-infant attachment, sleep patterns, the relationship between spouses, marital adjustment, postpartum comfort, and mother's social support. Moreover, the study emphasized that the needs of individuals in different groups should be identified and breastfeeding counseling should be planned according to these needs.

The fact that the majority of the postgraduate theses on breastfeeding were carried out by nurses shows that nurses play an important role in this area. To develop evidence on this topic, it is recommended that randomized controlled studies in the field of nursing should be increased and that fathers should be included in the studies.

Keywords: *Breastfeeding, nursing, infant nutrition*

INTRODUCTION

Breast milk is the most suitable nutrient that contains all the nutrients needed for the growth and development of the newborn. Breastfeeding and feeding with breast milk that has high bioavailability have numerous benefits for maternal and infant health (..). According to the 2018 TNSA data, 98% of newborns were breastfed for some time, 71% were introduced to breastfeeding within the first hour, and 42% were given another nutrient before breastfeeding (1). Also, the rate of breastfeeding during the first six months was reported to be still very low. According to these data, breastfeeding is

an issue that needs to be primarily addressed in our country (1). Nurses have an active role in the initiation and maintenance of breastfeeding with their caregiver, treatment, information, training, and consultancy provider, advocacy, and researcher roles. The analysis of scientific theses in the field of nursing is important to reveal how much nurses deal with breastfeeding, which subjects are examined in the field of nursing, and which aspects of breastfeeding should be addressed. This study aimed to examine the postgraduate theses about breastfeeding in the field of nursing in our country and was thought to guide other studies to be conducted in this area.

METHOD

To collect data, first, the literature was reviewed, and then the Higher Education Council National Thesis Center Database was searched using "breastfeeding" and "nurse" keywords. At the end of the study, 52 theses conducted in the Nursing between 2014- (October) 2019 were determined, and the tag information about these theses was obtained. The tag information of all of the theses was adequate, and the full text copy of 45 of them was reached. Since the full text of 7 was not reached, the abstract was used. Since sufficient information was reached in the summary part, it was included in the study. Five theses were made in the midwifery department but were included in the study as they were recorded in the database as nursing.

RESULTS

The review of all theses on the National Thesis Center Database conducted on breastfeeding revealed that 44.1% of the theses were conducted in the field of nursing. The remaining theses were carried out in the field of medicine and nutrition and dietetics. Of the theses conducted in the field of nursing, 84.6% (44) were master's theses, and 15.4% (8) were doctoral theses. Also, 51 of the theses were found to use quantitative methods (98.1%), while 1 (1.9%) employed a qualitative method. On the other hand, 18 of the theses using quantitative methods were quasi-experimental / experimental (35.3%), 28 were descriptive/cross-sectional (54.9%), 4 were methodological (7.5%), and 1 (2.3%) was case-control study. The examination of the top five topics in the theses indicated that the effects of nursing training and breastfeeding counseling on breastfeeding ranked first in the list (25%). In the theses carried out, the breastfeeding training and counseling given by nurses were determined to increase mothers' perception of breastfeeding self-efficacy, successful breastfeeding behaviors, positive practices for breastfeeding, the duration of feeding with only breast milk, and the life quality of mothers, and to decrease postpartum depression risk. Starting breastfeeding training and breastfeeding counseling during pregnancy and continuing them in the postpartum period, planning the content of the training according to individual needs, and also including fathers in these training programs were emphasized to be significant. The second most studied topic in the theses was breastfeeding self-efficacy and success in breastfeeding in different groups (adolescents, obese, cesarean section, etc.) (23.07%). The theses revealed that breastfeeding success of overweight and obese mothers and breastfeeding self-efficacy of mothers with preeclampsia were low, primiparous mothers in risky age group discontinued breastfeeding earlier, and that breastfeeding time was delayed and breastfeeding problems were experienced more in women receiving oxytocin induction. These studies also emphasized that the needs of individuals in different groups should be identified and breastfeeding counseling should be planned accordingly.

The third most studied topic in the theses was determined to be the factors affecting breastfeeding self-efficacy (15.4%). The results of the study indicated that as mother-infant attachment, sleep order, the relationship between spouses, marital adjustment, postpartum comfort, early skin-to-skin contact, and social support of the mother increased, breastfeeding self-efficacy increased as well. On the other hand, fatigue in mothers in the postpartum period was reported to not affect breastfeeding

self-efficacy. Finally, Turkish adaptation studies of breastfeeding scales were conducted (7.7%). One of the theses was conducted with fathers, while the rest 51 were found to include mothers.

DISCUSSION

Breastfeeding is not a process that relates to only the mother and the baby. To initiate and sustain successful breastfeeding, mothers should be supported by the family, society and health care team during pregnancy and in the postpartum period. Nurses play a key role in the initiation and maintenance of breastfeeding among the healthcare team. Breastfeeding training and counseling given by nurses during pregnancy, childbirth, and the postpartum period have positive effects on successful breastfeeding behaviors. Breastfeeding training and counseling provided by nurses have an important role in the protection, promotion, and maintenance of maternal and infant health (1-13).

Breastfeeding self-efficacy of mothers affects breastfeeding success positively. Breastfeeding competence affects the decision of the mother about breastfeeding, efforts to breastfeed, and her thoughts about breastfeeding. Therefore, it is important to determine the breastfeeding self-efficacy of mothers and the factors that affect it. The handling of this issue by nurses is considered to be significant (14-25).

The sample in only one of the thesis consisted only of men. There are very few studies primarily addressing fathers (26). The inclusion of fathers in the breastfeeding process is important. The contributions of theses in the field of nursing to the literature are great (28-53). But there are some aspects that need improvement. The majority of the theses conducted on breastfeeding in the field of nursing in the last five years have been descriptive. Randomized controlled studies are needed in the field of nursing. According to the 2018 TNSA data, our rates for breastfeeding in the first six months are very low. However, this issue has been addressed indirectly in studies carried out in the last five years, but there has not been a study directly investigating the reasons for the low rate and offering a solution. It is suggested that in the new thesis studies on breastfeeding, studies dealing with this problem and producing solutions should be conducted.

CONCLUSION

In conclusion, it can be said that breastfeeding is an important area of interest in nursing research, almost half of the thesis studies on breastfeeding have been carried out by nurses and that nurses give importance to breastfeeding. Also, studies reveal that nurses play an important role in the development of breastfeeding. It is recommended that randomized controlled studies in the field of nursing should be increased and that fathers should be included in the studies so that evidence on this topic can be developed.

References

1. *The results of 2018 Turkey Demographic and Health Survey were announced at the national meeting in Ankara. http://www.hips.hacettepe.edu.tr/eng/tdhs2018/*
2. *Öztürk R, Ergün S, Özyazıcıoğlu N. The effects of education concerning breast milk and breastfeeding during antenatal period on breastfeeding success and breastfeeding self-efficacy. Balıkesir University, Institute of Health Sciences, Department of Nursing. Master Thesis, Balıkesir:2018.*
3. *Güldür A, Beydağ KD. Evaluation of self-efficiency and post- labor breastfeeding behavior of mothers that completed A breastfeeding education program and mothers that was not educated in accordance with such A program. Okan University, Health Sciences Institute, Department of Nursing. Master Thesis, Istanbul: 2016.*

4. *Aylyyeva G, Topatan S. For healthy generations: The effects on breastfeeding behaviorof the lactation consultants provided on mothers in postpartum period. Ondokuz Mayıs University, Health Sciences Institute, Department of Nursing. Master Thesis, Samsun: 2019.*
5. *Özgüneş Z.Ö., Balcı S. The effect of breastfeeding education provided to mothers on a successful breastfeeding. Haliç University, Health Sciences Institute, Department of Nursing. Master Thesis, İstanbul: 2019.*
6. *Menekşe D, Çınar N. The effect of breastfeeding education provided to pregnant women who expect twins on their breastfeeding intent. Haliç University, Health Sciences Institute, Department of Nursing. PhD Thesis, Sakarya: 2018.*
7. *Ayran G, Çelebioğlu A. Effect of breastfeeding training given to parents on the level of breastfeeding self-efficacy, exclusive breastfeeding duration and parent-baby bonding. Atatürk University, Institute of Health Sciences, Department of Child Health and Diseases Nursing. PhD Thesis, Erzurum: 2018.*
8. *Aygör H, Ege E. The effect of breastfeeding coulseling to primiparous mothers on optimal duration of breastfeeding, postnatal depression and quality of life. Selçuk University, Institute of Health Sciences, Department of Nursing. PhD Thesis, Konya: 2017.*
9. *Yeşil Y,Öztürk Can H. The effect of individual and group breast feeding training of future mother and father at postpartum period on breast feeding self-efficacy and attitude. Ege University, Institute of Health Sciences, Master Thesis, İzmir: 2015.*
10. *Akgün P, Koyun A. The effect of information,motivationn,behavior skills model-based training on breastfeading success:A hypothetical model. Afyonkarahisar University of Health Sciences, Graduate School of Education, Department of Obstetrics, Gynecology and Diseases Nursing. Master Thesis. Afyonkarahisar: 2019.*
11. *Şahin E, Yavan T. Evaluation of the effect of planned discgarged education that is given during postpartum period and consultation on self care agency and breastfeeding. GATA, Sciences Institute, Department of Obstetrics, Gynecology and Diseases Nursing. PhD Thesis,.Ankara: 2015.*
12. *Gürarslan Baş N, Arıkan D. The impact of breastfeeding consultation given to the mothers that gave birth by cesarean section on initial breastfeeding time body temprature and sucking success of the newborn. Atatürk University, Institute of Health Sciences, Department of Child Health and Diseases Nursing. PhD Thesis. Erzurum: 2014.*
13. *Karagöz A., Avcı Ö. Antenatal eğitimin emzirme öz-yeterlilik algısı ve emzirme sürecine etkisi. İstanbul Medipol Selçuk University, Health Sciences Institute, Department of Nursing. Master Thesis. İstanbul: 2018.*
14. *Akyüz Y, Beydağ KD. The relationship between of women gave birth maternal attachment and self-efficacy in breastfeeding. Okan University, Health Sciences Institute, Department of Nursing. Master Thesis.İstanbul: 2017.*
15. *Aslan Y, Ege E. Breastfeeding self-efficacy of mothers and relationship with depression risk. Selçuk University, Health Sciences Institute, Department of Nursing. Master Thesis.Konya: 2016.*
16. *Balsak HN, Çevik S. Relationship between post-partum comfort and breastfeeding self suffiency in mothers. Gaziantep University, Health Sciences Institute, Department of Nursing. Master Thesis. Gaziantep: 2018.*
17. *Ceylan S., Şahin S. The comparison of breastfeeding self-efficacy and success of obese and normal weight mothers in the early period. Yıldırım Beyazıt University, Health Sciences Institute, Department of Nursing. Master Thesis. Ankara: 2016.*
18. *Fata S, Ünsal Atan Ş. The effect on breastfeeding self-sufficiency of fatique on mothers in postpartum period. Ege University, Health Sciences Institute, Department of Obstetrics, Gynecology and Diseases Nursing. Master Thesis. İzmir: 2014.*
19. *Gıynaş T, Akçay Didişen N. Effect of mothers' social support perception during postnatal period on breastfeedingself-efficacy perceptioni. Ege University, Institute of Health Sciences, Department of Child Health and Diseases Nursing. Master Thesis, İzmir: 2017.*
20. *Karakoç Geçici A, Geçkil E. The effect of the kangaroo care in premature babies on breastfeeding self-efficiency and breastfeeding success of mother. Necmettin Erbakan University, Health Sciences Institute, Department of Nursing. Master Thesis. Konya: 2018.*

21. *Şeker A, Vefikuluçay Yılmaz D. Relationship between sleep quality and breastfeeding self-efficacy of mothers in postpartum period. Mersin University, Health Sciences Institute, Department of Nursing. Master Thesis. Mersin: 2018.*
22. *Uludağ E. Öztürk S. Influence of spousal support in early postpartum period on breastfeeding self-efficacy. Atatürk University, Health Sciences Institute, Master Thesis.Erzurum: 2017.*
23. *Uzar Akça E, Uyar Hazar H. The relationship between breast feeding self-efficacy in pregnancy and feeding infants with exclusive breastfeeding in the second month after birth. Adnan Menderes University, Health Sciences Institute, Master Thesis.Aydın: 2016.*
24. *Yılmaz A, Hacıhasanoğlu Aşılar R. Investigation of the relationship between social support perceived by pregnant women and prenatal breastfeeding self-efficacy. Erzincan Binali Yıldırım University, Health Sciences Institute, Department of Nursing. Master Thesis. Erzincan: 2018.*
25. *Yılmaz Fındık F, Yağmur Y. The effect of marital adjustment on prenatal breast-feeding self- efficacy in pregnants. İnönü University, Health Sciences Institute, Department of Nursing. Master Thesis.Malatya: 2019.*
26. *Buldur E, Akçay Didişen N. The reliability and validity study of the partner breastfeeding influence scale. Ege University, Institute of Health Sciences, Department of Child Health and Diseases Nursing. Master Thesis. İzmir: 2019.*
27. *Akçay İ, Demirgöz Bal M. Breastfeeding motivations of primiparous mothers and the affecting factors. Marmara University, Institute of Health Sciences. Master Thesis. İstanbul: 2019.*
28. *Albayrak T, Akçay Didişen N. Phenomenological determination of the breastfeeding processes of mothers with multiple babies. Ege University, Institute of Health Sciences, Department of Child Health and Diseases Nursing. Master Thesis.İzmir: 2017.*
29. *Arga Z, Küçükoğlu S. Comparison of maternal attachment, breastfeeding self-efficacy and perceived insufficent milk in adolescent and non-adolescent mothers. Atatürk University, Institute of Health Sciences, Department of Child Health and Diseases Nursing. Master Thesis. Erzurum: 2019.*
30. *Aydın A, Pasinlioğlu T. Reliability and validity study of the prenatal breastfeeding self-efficacy scale. Atatürk University, Health Sciences Institute, Department of Obstetrics, Gynecology and Diseases Nursing. Phd Thesis.Erzurum: 2016.*
31. *Aydın Ç, Aytekin Özdemir A. Effects of breastfeeding supporting system on full breastfeeding and suction success in preterm infants. Atatürk University, Institute of Health Sciences, Department of Child Health and Diseases Nursing. Master Thesis. Erzurum: 2019.*
32. *Beşirik S, Gözen D. The effect of the breastfeeding and distraction methods on acute pain management with infants. İstanbul University, Institute of Health Sciences, Department of Child Health and Diseases Nursing. Master Thesis. İstanbul: 2016.*
33. *Boybay Koyuncu S, Yayan HE. Effect of Yoga on Breastfeeding Qualification and Maternal Attachment in Postpartum Primiparous Mothers. İnönü University, Institute of Health Sciences, Department of Nursing. Phd Thesis. Malatya: 2019.*
34. *Çapuk H, Güngörmüş Z. Effect of breastfeeding and delivery method of mothers with 1-8 months-old babies on maternal attachment. Gaziantep University, Institute of Health Sciences, Department of Public Health Nursing. Master Thesis. Yüksek Lisans Tezi. Gaziantep: 2018.*
35. *Çırpanlı C, Demirtaş Hiçyılmaz B. Postpartum breastfeeding success of mothers who delivered by cesarean section. Ankara University, Institute of Health Sciences, Department of Nursing. MasterThesis. Ankara: 2018.*
36. *Ekin G, Şahin E. Effect on breastfeeding efficacy on social appearance anxiety. Ordu University, Institute of Health Sciences, Department of Nursing. Master Thesis. Ordu: 2019.*
37. *Ertop F, Egelioğlu Cetişli N. Postpartum depression and breastfeeding behaviors of overweight, obese and non-obese pregnant women. İzmir Katip Çelebi University, Institute of Health Sciences, Department of Nursing. Master Thesis. İzmir: 2017.*
38. *Hangül B, Özsoy S. The effect of breastfeeding duration on postmenopausal osteoporosis. Adnan Menderes University, Health Sciences Institute, Department of Obstetrics, Gynecology and Diseases Nursing. Master Thesis. Aydın: 2016.*
39. *Işık G, Egelioğlu Cetişli N. The effect of gestational diabetes on depression and breastfeeding self-efficacy in pregnancy and postpartum period. İzmir Katip Çelebi University, Institute of Health Sciences, Department of Nursing. Master Thesis.İzmir: 2017.*

40. *Karakuş Türker T, Gözen D. Comparing the effects of kangaroo care and breastfeeding in reducing the pain due to hepatitis B vaccination in newborns. İstanbul University, Institute of Health Sciences, Department of Nursing. Master Thesis.İstanbul: 2018.*
41. *Mızrak B,Özerdoğan N. Adaptation of breastfeeding motivation scale to the Turkish, determination of factoring breastfeeding motivation. Eskişehir Osmangazi University, Institute of Health Sciences, Department of Nursing. Phd Thesis. Eskişehir: 2017.*
42. *Özkardeş T, Egelioğlu Cetişli N. The effect of preeclampsia on breastfeeding self efficacy and postpartum depression. İzmir Katip Çelebi Üniversitesi / Sağlık Bilimleri Enstitüsü / Hemşirelik Anabilim Dalı / Kadın Hastalıkları ve Doğum Hemşireliği Bilim Dalı. Yüksek Lisans Tezi. İzmir: 2019.*
43. *Öztürk E, Yanıkkerem E. Breastfeeding success, self-efficacy and fear of breastfeeding in obese and non-obese women. Manisa Celal Bayar University, Health Sciences Institute, Department of Obstetrics, Gynecology and Diseases Nursing. Master Thesis. Manisa: 2018.*
44. *Öztürk S, Timur Taşhan S. The Relationship between implementation of the traditional methods of postnatal care and breast-feeding and health literacy. İnönü University, Institute of Health Sciences, Department of Nursing. Master Thesis.Malatya: 2019.*
45. *Sarper C, Akkuzu G. The effect of early skin to skin contact on breastfeeding success on cesareans under spinal anestesia. Başkent University, Institute of Health Sciences, Department of Nursing. Master Thesis.Ankara: 2015.*
46. *Suadiye N., Emül TG. Determining the factors affecting breastfeeding attitudes of adolescent mothers. Mersin University, Institute of Health Sciences, Department of Nursing. Master Thesis. Mersin: 2018.*
47. *Şahin S, Sinan Ö. Examination of breastfeeding and comfort conditions of postnatal mothers. Ankara Yıldırım Beyazıt University, Institute of Health Sciences, Department of Nursing. Master Thesis.Ankara: 2017.*
48. *Tatarlar A. Aluş Tokat M. The effect of birth fear on lactation, sucking ability and first breastfeeding results. Dokuz Eylül University, Health Sciences Institute, Department of Obstetrics, Gynecology and Diseases Nursing. Master Thesis.İzmir: 2015.*
49. *Türkdoğan M, Akcan A. Monitoring brestfeeding behaviours of primiparous who are in or not in risky age-groups prospectively. Akdeniz University, Institute of Health Sciences, Department of Nursing. Master Thesis.Antalya: 2018.*
50. *Yeyğel Özcan Ç, Aluş Tokat M. Comparison of breastfeeding results of mothers who have received and who have not received oxytocin induction during vaginal delivery. Dokuz Eylül University, Institute of Health Sciences, Department of Nursing. Master Thesis.İzmir: 2014.*
51. *Yılmaz AN, Aksoy Derya Y. Birth of action started and labour start those who planned cesarean postpartum breastfeeding and mother-infant bonding comparison of levels. University, Institute of Health Sciences. Master Thesis.Malatya: 2018.*
52. *Yılmaz F, Yurt S. Factors cause to quit feeding with breast milk and effect of breastfeeding duration to mother child bonding. Maltepe University, Institute of Health Sciences, Department of Nursing. Master Thesis.İstanbul: 2017.*
53. *Yol E, Tezel T. Assessment of breast self- efficacy and breastfeeding success of children with indirect hyperbilirubinemia. Ankara University, Institute of Health Sciences, Department of Nursing. Master Thesis. Ankara: 2017.*

FT109

Olanzapine-associated Neuroleptic Malignant Syndrome: A Case Report

Olanzapine Bağlı Nöroleptik Malign Sendrom: Olgu sunumu

Kezban ÖZTÜRK[1], Ahmet Sami GÜVEN[1], Abdullah YAZAR[2], Semih ERDEN[3], Alper YILDIRIM[4], Saliha KILINÇ[3], Hüseyin ÇAKSEN[1]

[1]Necmettin Erbakan University, Meram Medical Faculty, Department of Pediatrics, Division of Pediatric Neurology, Konya

[2]Necmettin Erbakan University, Meram Medical Faculty, Department of Pediatrics, Division of Children's Critical Care Medicine, Konya

[3]Necmettin Erbakan University, Meram Medical Faculty, Department of Child and Adolescent Psychiatry, Konya

[4]Necmettin Erbakan University, Meram Medical Faculty, Department of Pediatrics, Konya

Introduction:
Neuroleptic malignant syndrome (NMS) is an uncommon but potentially lethal drug reaction, most often seen as a complication of antipsychotic treatment. The most common clinical findings in NMS are; hyperthermia, extrapyramidal symptoms, high creatinine kinase (CK) levels, altered mental state and leukocytosis.

Case Report:
A 15-year-old male patient with the diagnosis of mucopolysaccharidosis type 3C and autism spectrum disorder from another center had been prescribed olanzapine 5 mg orally twice daily for psychotic disorder by a child psychiatrist ten days ago. On the seventh day, the mother stopped the drug completely because the patient had an inappetence, agitation, swallowing problem and developed severe muscle rigidity in the prostration position. On the tenth day, the patient was brought to our pediatric emergency department in the prostration position suffering from muscle rigidity in the whole body and was unable to move (Figure 1A). He was firstly administered biperiden as considering extrapyramidal side effect of olanzepine and than diagnosed with NMS after noticing fever. Subsequently dantrolene was administered intravenously at a dose of 2.5mg/kg in addition to the low-dose midazolam infusion. The patient could only received three doses of dantrolene due to lack of availability. On the second day, the treatment was continued with midazolam infusion and bromocriptine administered orally twice a day. He gradually improved over one week, and bromocriptine was tapered gradually but thereafter he developed ventilator-associated pneumonia and discharged in stable condition on day 30 (Figure 1B).

Conclusion:
Early diagnosis of NMS and cessation of the drug, prompt medical intervention are life saving. It is therefore essential for all physicians to become familiar with the diagnosis and treatment of this serious and treatable drug reaction. Our aim is to increase the awareness, and recognition of NMS for reducing its incidence and mortality.

Keywords: *Neuroleptic malignant syndrome, olanzapine, bromocriptine*

Introduction

Neuroleptic malignant syndrome (NMS) is a life-threating neurological disorder, most often caused by an adverse reaction to neuroleptic or antipsychotic drugs. NMS typically consists of muscle rigidity, fever, autonomic instability, and cognitive changes such as delirium, and is associated with elevated plasma creatine phosphokinase (CPK) (1). We present a case in the prostration position with olanzapine related NMS, administered biperiden firstly as considering extrapyramidal side effect of olanzepine and than diagnosed with NMS by noticing fever.

Case Report

A 15-year-old male patient with the diagnosis of mucopolysaccharidosis type 3C and autism spectrum disorder was prescribed olanzapine 5 mg orally twice daily for psychotic disorder by a child psychiatrist from another health center, ten days ago. On the sixth day, dystonic postural movements developed in the patient's arms and legs and the dose of olanzapine was reduced to 2.5 mg orally twice daily and biperiden 2 mg orally twice daily was added to the treatment. His mother stopped the medication due to worsening of the symptoms on the seventh day. The patient went into altered sensorium, stopped feding and sleeping on the eighth day and was referred to our hospital on the tenth day. On admission, the patient was brought to our pediatric emergency department in the prostration position suffering from muscle rigidity in the whole body and was unable to move (Figure 1A). He was afebrile with the temperature of 36.7°C, pulse rate was 122/min, the blood pressure was 164/79 mmHg, the respiratory frequency was 24 per minute, capillary glycemia was 120 mg/dL, oxygen saturation was 95. On physical examination, he was agitated with a Glasgow Coma Scale of 9/15 (E4M4V1) and had mildly coarse facial features, diaphoresis, generalized rigidity and jaw-closing oromandibular dystonia in the prostration position. We initially considered the diagnostic hypothesis of extrapyramidal syndrome due to the use of antipsychotic. After the intramuscular administration of one dosage of biperiden (5 mg), he was able to move a little and sit but his rigidity, agitation, and other complaints persisted. Within a few hours, he developed a temperature of 37.8°C. Subsequently the family reported that he had rarely fever for several days and used antibiotics and antipyretics for upper respiratory infection. Laboratory examination revealed elevated serum CPK (5580 IU/L), Na (151 mmol/L), blood urea (71 mg/dL) and AST (154 U/L). The other laboratory parameters were normal. At this moment, we considered the hypothesis of NMS as the occurrence of muscle rigidity, hypertension, tachycardia, fever and increased CPK. Brain computed tomography was normal. Since intravenous lorazepam was not present in our pediatric emergency unit, intravenous low-dose midazolam infusion (0.5 mcg/kg/min) was initiated for agitation and generalized dystonia. Then the patient was transferred to our tertiary level pediatric intensive care unit (PICU). Intravenous fluids were used to maintain euvolemic state. His blood pressure, rigidity and agitation decreased after midazolam infusion, subsequently dantrolene was *administered* intravenously at a *dose of* 2.5 mg/kg. After the first dose of dantrolene, his fever, tachypnea and stiffness decreased, her blood pressure remained within normal limits. Within a few hours he developed increased respiratory failure requiring intubation. Although the maintenance dose of dantrolene was planned to be 1 mg four times a day, the patient could only receive three doses of medication due to lack of availability. On the second day of the PICU, the treatment was continued with low-dose midazolam infusion and bromocriptine 2.5 mg administered orally twice daily. In the follow-up, the patient developed ventilator-associated pneumonia. He improved over one week and midazolam used for sedation was ceased at first, then bromocriptine was tapered gradually over three weeks. He was discharged in stable condition with normal laboratory parameters with on day 30 (Figure 1B).

Discussion

NMS is a potential danger to patients, being treated with the medications that interfere with the dopaminergic system. The first symptoms of NMS are usually mental state changes, dysautonomia, muscular rigidity and hyperthermia. The diagnosis can be difficult and mainly based on the clinical findings, supported by laboratory tests and ruling out the other possibilities such as infections, brain lesions, toxic encephalopathy, central anticholinergic syndrome, heat stroke and malignant hyperthermia, serotonin syndrome (selective serotonin reuptake inhibitors toxicity) etc (1, 2).

Serotonin syndrome is the most common diagnosis related to NMS. The milestones that characterize serotonin syndrome are shivering, hyperreflexia, myoclonus, and ataxia. Features which distinguish NMS from serotonin syndrome include bradykinesia, muscle rigidity, elevated white blood cell (WBC) and plasma CPK level (3). A raised WBC count and plasma CPK level will be reported due to increased muscular activity and rhabdomyolysis. The patient with NMS may suffer hypertensive crisis and metabolic acidosis. The fever is believed to be caused by hypothalamic dopamine receptor blockade. The antipsycotic drugs cause an increased calcium release from the sarcoplasmic reticulum of muscle cells which can result in rigidity and cell breakdown (1,2). However, patients with olanzapine-induced NMS usually do not have fever (4).

The treatment generally based on the removal of the offending medication and supportive care in an intensive care unit. Benefits of specific treatments such as dantrolene, electroconvulsive therapy, dopamine agonists such as bromocriptine and amantadine are still debated, but can be considered if there is no clinical improvement (4-6). Anticholinergics may cause symptoms resembling NMS, and may also be associated with the occurrence of delirium (5). Our case was firstly administered biperiden, an anticholinergic drug, considering extrapyramidal side effect of olanzepine and than diagnosed with NMS after noticing fever and elevated serum CPK level and successfully treated with supportive care and bromocriptine after several doses of dantrolene. In conclusion; early diagnosis of NMS, cessation of the drug, and prompt medical intervention are life saving. It is therefore essential for all physicians to become familiar with the diagnosis and treatment of this serious and treatable drug reaction. Our aim is to increase the awareness, and recognition of NMS for reducing its incidence and mortality.

References:

1. *Modi S, Dharaiya D, Schultz L, Valeras P. Neuroleptic malignant syndrome: complications, outcomes, and mortality. Neurocrit Care 2016; 24:97-103.*
2. *Stubner S, Rustenbeck E, Grohmann R, et al. Severe and uncommon involuntary movement disorders due to psychotropic drugs. Pharmacopsychiatry 2004; 37:54-64.*
3. *Lejoyeux M, Fineyre F, Ades J. The serotonin syndrome. Am J Psychiatry 1992; 149: 1410-11.*
4. *Woo BK and Obrocea GV. Atypical case of neuroleptic malignant syndrome caused by olanzapine and carbamazepine. Psychiatry 2005; 2: 23-24.*
5. *Berman BD. Neuroleptic malignant syndrome: a review for neurohospitalists. Neurohospitalist 2011; 41–7.*
6. *Davis JM, Caroff SN, Mann SC. Treatment of neuroleptic malignant syndrome. Psychiatr Ann 2000; 30: 325–31.*

Figure.1A: The patient in the prostration position on admission, 1B: The patient after the treatment

FT120

Two Cases Wıth Tyrosine Kinase 2 Deficıency :

Hülya Vatansev

Necmettin Erbakan Univercsty, Meram Medical Faculty, Chest disease department, Konya, Turkey

About a quarter of the word's population is infected with Mycobacterium tuberculosis, but this bacterium causes tuberculosis in less than 10% of infected individuals. In the countries in wich tuberculosis is highly endemic, primary tuberculosis is particulary common in the children and adults. Clinical and epidemiological studies suggest that tuberculosis in humans has a strong genetic basis. Autosomal recessive (AR) complete interleukin-12 receptor β 1 (IL-12R β 1) and tyrosine kinase 2 (TYK2) deficiencies are the only two inborn errors of immunity reported to date to underlie primary tuberculosis in otherwise healthy patients in two or more kindreds (1,2). Inherited IL-12R β 1 and TYK2 deficiencies impair both IL-12– and IL-23–dependent IFN-g immunity and are rare also causes of tuberculosis (3,4).

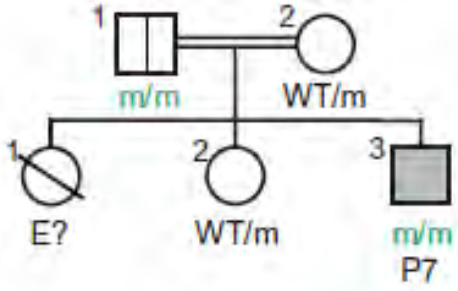
Case 1:

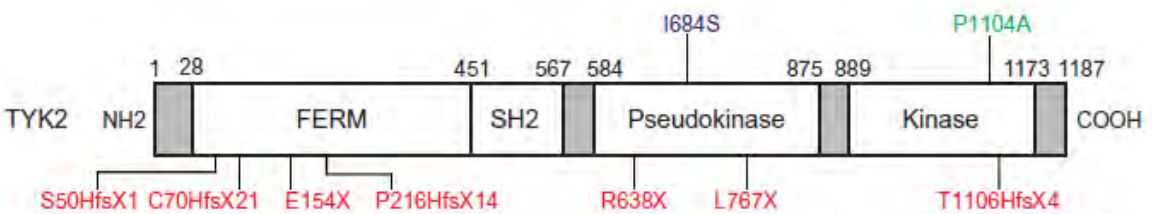
A 19 years old man from consanguineous marriages applied to chest disease. He is mainly complain cough for last 2 months. He has complaint of fever (39 °C). His weight loss for last 2 months. There is not any features of his medical history. But the patient's first admission to the hospital was 15 years old. This patient hospitalized with a diagnosis of pneumonia.

At physical examination: Respiratory system oscultation was normal. And also cardiovascular system was normal. There wasn't any abnormal finding. At Laboratory tests: Wbc: 8100 mm3 , Hb: 9,5 gr/dl , Crp: 63 mg/L , sedimantation rate 89 mm/H. Immunoglobulin levels are calculated as; IgE: 42,4 IU/ml, IgA: 334 mg/dl, IgM: 48 mg/dl, IgG: 1370 mg/dl. Lymph node biopsies were performed and obtained as a result of granulomatous inflammation and caseification necrosis. We started treatment with the diagnosis of miliary tuberculosis. Patient received; Isoniazid rifampicin, ethambutol, pyrazinamide treatment. After treatment clinical findings improved and weight gain normalized with antituberculosis treatment.

Genetic analysis:

HomozygousTYK2 mutation (P1104A) was detected in the genetic analysis;





Case 2:
A 46 years old, consanguineous marriage man. This patient is the father of our first patient's father. In his medical genetic research tyrosine kinase deficiency was detected. There is not any clinical findings: Espicially he has not got neither history of any infections nor tuberculosis. Immunological evaluation was normal except low IgM level like his son. Radiological exam was non-spesific. ARB staining and culture for TB were normal.

Results:
In cases with suspected tuberculosis, a case was presented to emphasize the importance of further investigation of tuberculosis susceptibility genes, even if there was no previous history of suspected immunodeficiency.

Figures:

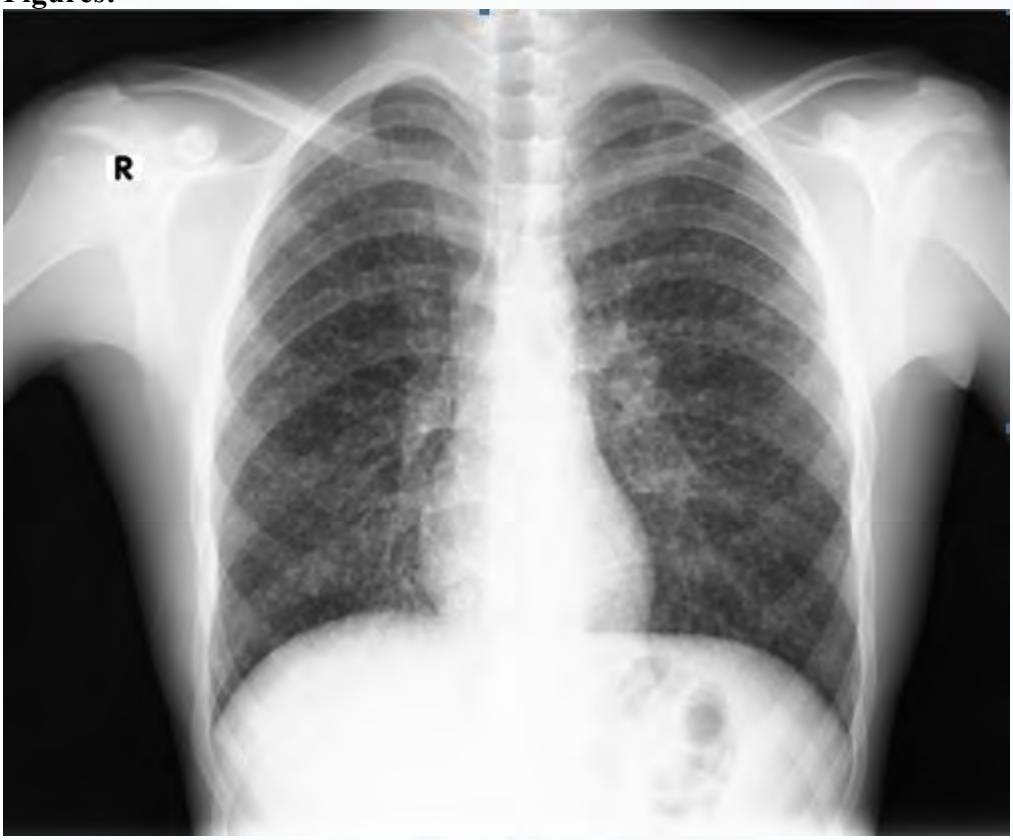


Figure 1: Posteroanterior chest graphy: Miliary lesions was seen.

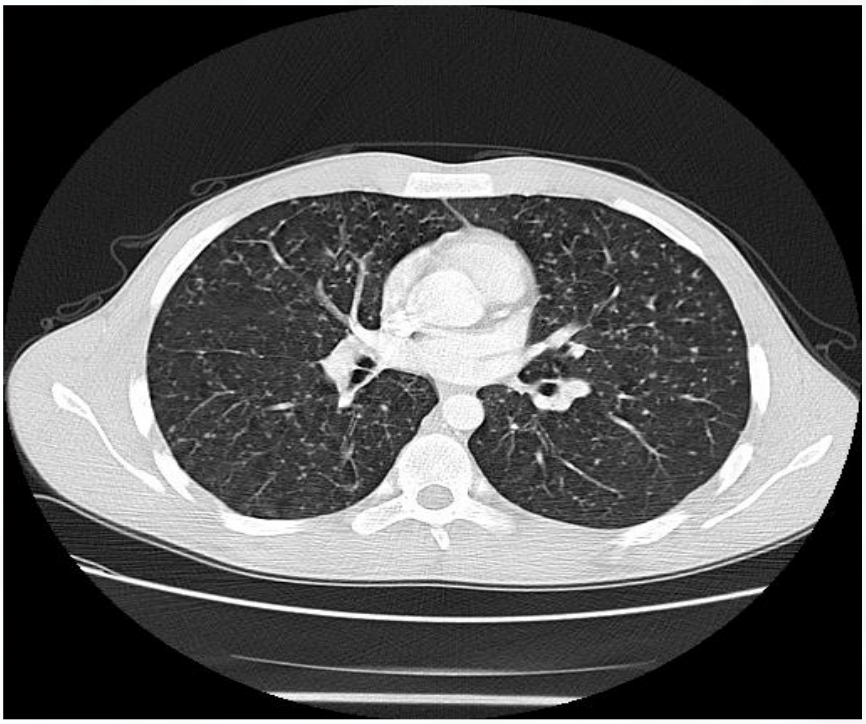


Figure 2: CT scan of lung: Miliary lesions was seen at axiel images.

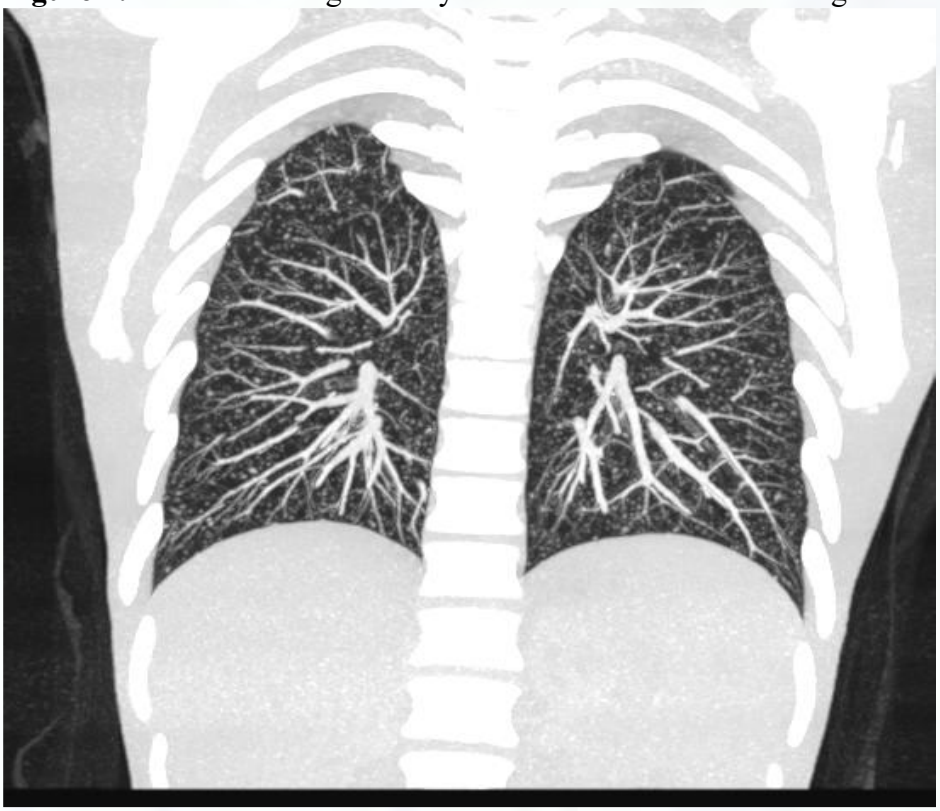


Figure 3: CT scan of lung : Miliary lesions was seen at coronal images.

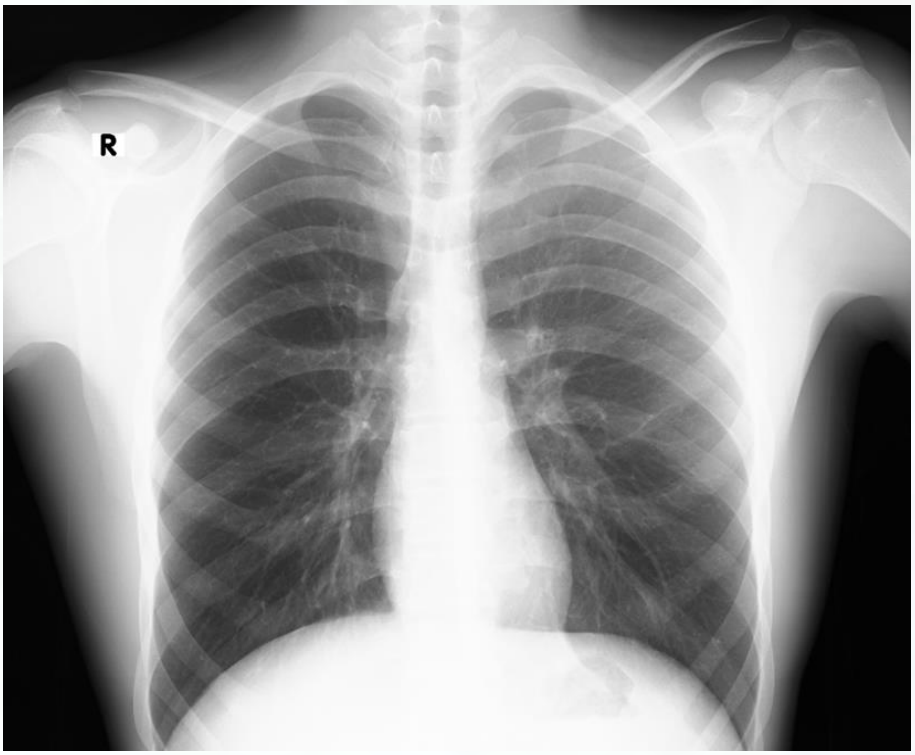


Figure 4: Posteroanterior chest graphy after treatment: Normally findings detected.

References:

1 *A. Y. Kreins, M. J. Ciancanelli, S. Okada et all. Human TYK2 deficiency: Mycobacterial and viral infections without hyper-IgE syndrome. J. Exp. Med. 212, 1641–1662 (2015).*

2. *S. Boisson-Dupuis, J. Bustamante, J. El-Baghdadi, Y. Camciogluet all. Inherited and acquired immunodeficiencies underlying tuberculosis in childhood. Immunol. Rev. 264, 103–120 (2015).*

3. *J. Bustamante, S. Boisson-Dupuis, L. Abel, J. et all. Mendelian susceptibility to mycobacterial disease: Genetic, immunological, and clinical features of inborn errors of IFN- β 1 immunity. Semin. Immunol. 26, 454–470 (2014).*

4 *S. Boisson-Dupuis, J. El Baghdadi, N. Parvaneh. et all. IL-12R 1 deficiency in two of fifty children with severe tuberculosis from Iran, Morocco,and Turkey. PLOS ONE 6, e18524 (2011).*

FT121

Evaluation of Demographic Characteristics and Some Laboratory Findings of Patients Presenting to Emergency Department Due to Electric Shock

Gülbahar ÜRÜN UNAL[1], Alaaddin YORULMAZ[2], Ibaa W.F Yahya[2]

[1]Selçuk Üniversitesi Tıp Fakültesi, Aile Hekimliği Ana Bilim Dalı, Konya

[2]Selçuk Üniversitesi Tıp Fakültesi, Çocuk Sağlığı ve Hastalıkları Ana Bilim Dalı, Konya

Introduction :

Electric Shocks (ES) is a problem that can cause many clinical symptoms from mild skin burns to life – threatening conditions and can be evaluated as a type of trauma in which the whole age group is at risk; at the same time, it continues to be a problem that can be prevented by some measures to be taken in our country as in the whole world (1). With the increase in technological advances, the control and widespread use of electricity has led to an increase in the number of injuries due to electric shock. According to US data, approximately 17,000 cases apply to emergency services due to electric shock per year and approximately 1000 people, %10 of whom are children, lose their lives (1 – 3).

The morbidity and mortality due to electrical shock generally varies according to different electrical current types and contact points. Generally, the mortality rate is higher in those who exposed to high voltage (>1000 volts). In low voltage (<1000 volts) which is commonly used in households and alternating current, frequent death is observed as it causes more frequent rhythm disturbances such as ventricular fibrillation. Apart from the amount of voltage, the damage can also vary depending on factors such as resistance of the skin, mucosa and internal organs, type of current (direct – alternative), exposure time, current path and body's resistance to the current (4 – 5).

The mechanism by which electric shocks cause damage is explained in three main lines. The first of these; direct effects of electric current on the human body. In the second type of injury; electrical energy is converted into heat energy without direct contact and burns deep and superficial tissues. Last one; injuries due to muscle contraction or ejection effects. Determination of risk factors and mechanisms is important in terms of precautions and treatment (6 – 7).

Electric shock is a type of trauma that can cause psychological and physical damage and cause negative effects in the society. Determination of the demographic characteristics and risk factors of electric shocks will allow the development of effective prevention methods and the reduction of such injuries (8) . Therefore, in this study; discussion of demographic characteristics, types of electrical current, laboratory findings, effect of age factor on outcome, measures to reduce mortality and morbidity of the patients who applied to the emergency department of Selcuk University Medical Faculty due to electric shock in the last 5 years, planned.

Materials and Methods:

In this study, retrospective files of 24 patients who were admitted to the Emergency Department of Selcuk University Medical Faculty between January 1, 2014 and August 1, 2019 due to electric shock were reviewed. The cases were evaluated in terms of age, sex characteristics, educational status, voltage and source of exposure, complications, state of consciousness, mortality, entry – exit of electrical current, aspartate aminotransferase (AST), alanine aminotransferase (ALT), creatinine phosphokinase (CPK), creatine kinase myocardial band (CK – MB), potassium (K), urea, creatinine, complete urinalysis (TIT) and ECG (electrocardiogram) values. SPSS 21.0 program was used for statistical analysis of the study data. The data related to quantity were presented as mean ± standard deviation; the data indicating the quality were presented as frequency and percentage value.

FINDINGS:

Table 1. Demographic and Clinical Characteristics of Electric Shock (n = 24)

Characteristic	*Mean ± SD*	*(n)*	*(%)*
Gender	Girl	7	29,2
	Male	17	70,8
Age	0 – 60 months	17	70,8
	61 months and more	7	29,2
Education	**Illiterate**	8	33,3
	Literate	4	16,7
	Primary school	5	20,8
	High school	6	25,0
	University	1	4,2
Electrical Supply	Power cable	11	45,8
	Electrical Outlet	11	45,8
	Iron	2	8,4
Complication due to ES	Skin burn	14	58,3
	Diffuse pain	2	3,8
	Normal	8	33,3
Electrical Voltage	High voltage	2	3,8
	Low voltage	22	91,7
Entry – exit of electrical current	Hand – hand	5	20,8
	Hand – uncertain	9	37,5
	Foot – Uncertain	1	4,2
	None	9	37,5

The mean age of the 24 patients who presented with electric shock was …. years. Of these, 17 were male (%70,8) and 7 were female (%29,2); %70.8 (n = 17) were 61 months or more, %29,2 (n = 7) were between 0 – 60 months. It was observed that 11 (%45,8) cases were shocked by a disrupted electrical cable, 11 (%45,8) cases were shocked by an improperly installed socket, and 2 (%8.4) cases were shocked by household electric current. Two (%8,3) of the patients were exposed to high voltage (>1000 volts) and 22 (%91,7) were exposed to low voltage (<1000 volts). While 9 patients (%37) did not have any electrical entry – exit sites; in 5 patients (%20,8) electricity entered from one hand and exited from the other hand. In 9 patients (%37,5) the hand was identified as the entry site, while the exit site was not detected.

All patients reached the emergency department with a clear state of consciousness. Also, no mortality was observed in these patients.
The most common physical examination finding (%58,3) was burns at the electrical entry or exit sites. It was noted that these were millimeter sized first and second degree burns and did not require further treatment. Another complication due to electric shock was diffuse pain (%8.3).
All patients were evaluated by ECG for cardiac arrhythmias and all cases except two, had normal sinus rhythm findings. Sinus arrhythmia was detected in patients with ECG abnormalities and it was found to improve without further treatment in the follow – up.
Complete urine analysis (TIT) was performed in 18 patients and was found 4 positive leukocytes in 1 case, 9 positive erythrocytes in 1 case and low density in 3 cases.
In 22 cases, CK – MB and CK were performed and none of them had pathologic elevation except one. The patient with CK – MB elevation reached normal range during the follow – up period without the need for additional treatment. The mean CK values were 1468,68 ± 315,24 and the mean CK – MB was 2,7 ± 1,59. None of the patients developed renal or liver damage.

Table 2. **Some Laboratory Features of Cases Admitted to Pediatric Emergency Clinic After Electrical Shock** (n = 24)

Parameter	Mean ± standard deviation (minimum – maximum)
AST (U / L)	28.3 ± 9.68 (16-46)
ALT (U / L)	16.2 ± 5.29 (8-32)
CK (U / L)	1.37 ± 6.09 (55- 308)
CK-MB (IU / L)	2.7 ± 1.59 (0.69-5.92)
Potassium (mEq / L)	4.2 ± 0.40 (3.70-5.37)
Urea (mg / Dl)	23.6 ± 6.20 (16 - 40)
Creatinine (mg / Dl)	0.56 ± 0.22 (0.24-0.97)

Discussion:
It has been found in many studies that electric shocks in our country are more than electric shocks occurring in many countries of the world (9-10). The main reasons for this are; excessive use of illegal and uncontrolled electricity, insufficient safety of cables and electrical sources, low use of leakage current relays, uncontrolled occupational health safety and the absence of safety covers in the sockets.
Although injuries due to electric shock occur in all age groups, they are often the result of home accidents in childhood. While children under five years of age have household accidents in the form of touching electrical cables and sockets; high-voltage injuries are seen in children over five years old as a result of climbing trees or electric poles (3-11). In our study, in accordance with the literature, home injuries were found to be significantly higher in children under five years of age. When the location of the electric shock and the source of the electricity were examined, the difference between the age groups was remarkable. Sockets and electrical cables have emerged as the most important source of electricity for the preschool age group who are very keen to recognize the objects around them. The most important reasons in this age group was the sockets which were improperly installed or to which some objects were inserted and the cables which could not be covered sufficiently. In the group over the age of five, it was observed that electric household devices such as irons were more frequent than the other age group. This can be explained by the fact

that older children and adolescents use electrical devices on their own. It is clear that these kinds of injuries will be prevented with simple precautions and trainings.

Electric shocks are more common among men worldwide. In a study conducted by Rai et al. it was reported that %81 of electrical shocks were observed in boys and %19 in girls. %37 of these were due to low voltage and %63 due to high voltage (12). In the study conducted in Turkey, Cander et al. observed that %93 of electrical shocks were in boys and %7 in girls (5). Similarly, the data obtained in our study (%70.8 male and %22 female) were found to be statistically significantly higher in men. This result can be attributed to the fact that boys are relatively more interested in electrical devices and cables than girls in our culture (13).

Electric shocks can be classified as low or high voltage. Values below one thousand volts are defined as low voltage. The low voltage used in households is also alternating current. In childhood, injuries due to low-voltage alternating current are more often seen (3,5,12,13). In our study, low-voltage home accidents (%91.7) were found to be statistically significant in accordance with the literature.

None of the patients in our study had renal damage, liver damage or cardiac damage. This can be explained by the fact that the majority of the cases in our study were exposed to low voltage and/or short-term electrical current. It was considered that there is no need for further investigations in patients with low voltage, short-term exposure and no clinical signs and symptoms of deep tissue damage.

Result:

The vast majority of injuries due to electric shock in children are low-voltage, especially by home accidents. It was considered that further investigations were not necessary in cases exposed to low-voltage current and without symptoms and signs. Public education and preventive medicine are important in terms of reducing such accidents since the majority of cases presenting with electric shock can be prevented by preventive medicine practices.

Current Approaches in Nausea and Vomiting Management in Children Undergoing Chemotherapy

Hazal Özdemir Koyu, Fatma Taş Arslan

Selçuk Üniversitesi Hemşirelik Fakültesi, Konya

Despite advances in the treatment of nausea and vomiting in children receiving chemotherapy, nausea and vomiting remains the most important treatment side effect in children. This undesirable side effect significantly affects the quality of life of the child and the caregiving parents, compliance of the child to the treatment, course of the treatment, psychological well-being of the child, treatment process, compliance of the treatment and coping level of the caregiving parents. For this reason, pediatric oncology nurses are the professionals who interact and provide direct care to the child receiving cancer treatment; It has important roles and responsibilities in providing the necessary care, guidance, support and complementary interventions to alleviate unwanted side effects and minimizing the symptoms seen in the child. Pediatric oncology nurses; evaluate the child's treatment protocol, the emotogenicity of the given protocols, the effects on the child, the previous experiences of the child with nausea and vomiting through detailed evaluation criteria and follow the evidence-based care guidelines, evaluation criteria, algorithms and nursing interventions, planned pharmacological treatment, side effects. In addition, pharmacological methods should be supported by non-pharmacological methods according to current evidence-based guidelines. It should support nursing care with established non-pharmacological modalities that are effective in preventing nausea and vomiting in children, and should follow current randomized controlled trials evaluating their efficacy and integrate them into their clinical trials. It is also recommended that pediatric oncology nurses plan follow-up studies, longitudinal studies and randomized controlled experimental studies evaluating the effectiveness of non-pharmacological interventions for nausea and vomiting in children. In this review, current approaches to nausea and vomiting in children receiving chemotherapy were evaluated.

Keywords: *Nausea and vomiting, nursing practices, chemotherapy, pediatric oncology, symptom management*

Introduction

Nowadays, nausea and vomiting is one of the most common symptoms experienced by children in the treatment of childhood cancers despite the improvements and improvements in antiemetic treatment protocols in the treatment approaches of childhood cancers (1,2). Nausea is a subjective experience characterized by possible vomiting (emesis), although severe nausea can occur even before vomiting occurs prior to vomiting. Vomiting is characterized by expulsion of the gastric contents together with the retching reflex (3,4). Since nausea is a subjective experience, it is difficult to manage in the treatment of childhood cancers, and the incidence in children receiving cancer treatment varies between 40% and 70% (4,5). The incidence varies according to the factors associated with the child and the echogenicity of the chemotherapeutic agent included in the child's treatment protocol (3,4,5,6). The aim of management of nausea and vomiting in children nausea and vomiting that is to prevent the occurrence of symptoms (1,6). The pharmacological methods used for this should be evidence-based and supported by non-pharmacological interventions (1,5-6). Methods used in symptom management to reduce / prevent nausea and vomiting in children; pharmacological methods and non-pharmacological interventions that should be evidence-based (1,5-6). As a pharmacological treatment antiemetic drug prophylaxis is widely used in the control of nausea and vomiting in children undergoing chemotherapy. (1,6). Antiemetics are given individually or in

combination according to the level of chemotherapeutic agents received by the child and the severity of nausea and vomiting in the child (1, 4-6).

In 2016, MASSC / ESMO proposed an updated consensus to prevent nausea and vomiting due to acute chemotherapy in children; Acute nausea and vomiting prophylaxis is recommended for children receiving chemotherapy drugs with low emotogenic effect, 5 HT-3 antagonists, and 5-HT3 antagonist ± dextamethasone ± aprepitant for those with chemotherapy treatment with moderate and high emotogenic effect (5). In the management of nausea and vomiting in children, it can be used alone in combination with pharmacological treatments in non-pharmacological interventions and mild nausea and vomiting in expectant nausea and vomiting (1,6). Non-pharmacological interventions recommended by the Oncology Nursing Society (ONS) to prevent nausea and vomiting in children include; massage-aromatherapy, cognitive behavioral therapies, guided imagery, ginger, progressive muscle relaxation, psychoeducation, acupuncture-acupressure, yoga, mind-body-based practices, animal assisted therapy, music therapy and art therapy (8). İn a randomized controlled clinical study in which Varejeo and Santo (2019) evaluated the effect of laser acupuncture on nausea and vomiting in 17 children diagnosed with cancer aged 6-17 years receiving chemotherapy; concluded that laser acupuncture was effective in relieving nausea within 5 days of receiving chemotherapy and reducing vomiting episodes (number of attacks) on days 2 and 3 after chemotherapy (9). Evans et all., (2018) in a randomized controlled trial of plesebo (water) and control (Johnson's baby shampoo) groups in which 49 children with cancer evaluated the benefits of ginger essential oil and inhaled aromatherapy to reduce nausea caused by chemotherapy; Ginger inhaled aromatherapy had no significant effect on reducing nausea and there was no significant difference in PeNAT scores between the three groups (10). Lown et al. (2019), in a randomized controlled trial protocol, evaluated the feasibility and efficacy of acupressure intervention to reduce treatment-related symptoms in 58 children and their parents receiving chemotherapy or chemotherapy-based hematopoietic cell transplantation; main result: reduction of nausea and vomiting for the child. Secondary outcomes: effect on pain, fatigue, depression, anxiety in children. Parental results: Depression, anxiety, post-traumatic stress symptoms, caregiver self-efficacy will be evaluated (11).

Dupis et al. (2018) compared acupressure wrist bands with standard antiemetic agents in children between 4 and 18 years of age using high emetic chemotherapy compared to the control group in acute phase and delayed phase chemotherapy-induced nausea intensity and acute and delayed phase controlled chemotherapy-induced vomiting in controlled studies; It was stated that acupressure bands had no significant effect on reducing the severity of nausea caused by chemotherapy in acute phase and delayed phase and as a result acupuncture bands were safe but had no effect on nausea or vomiting caused by chemotherapy in pediatric patients receiving high emetic chemotherapy (12). According to American Cancer Societ (ACS) recommendations for nausea and vomiting in children (13);

To ensure that the foods consumed are cold or at room temperature to reduce the smell and taste,
In case of nausea, consuming fluid by sipping, avoiding fluid intake in meals,
Preference of clear liquids and cold consumption of these liquids slowly (ginger ale, apple juice, grape juice, cranberry juice),
Feeding with small and frequent small snacks throughout the day,
Stick ice creams, ginger ice chips,lemon, mint to help get rid of bad flavors, such as pungent and pleasant smells containing sugar-less hard candies,
Consuming dry and light foods such as toast, crackers, Rice, dry cereals, etc.
Taking calorie foods (pudding, fruit yoghurt, milkshakes) which are easy to eat several times a day,
Making nutritional arrangements to prevent nutritional intolerance after nutrition,
Determining the nutrition preferences of the child and providing the possible opportunities,
Conducting activity programs to prevent sudden post-meal changes,

Taking care of oral care,
In addition to the antiemetic regimen, it is possible to perform other activities such as listening to music, playing games, exercising and reading books during and after chemotherapy treatment (13).

Conclusion

Pediatric oncology nurses should evaluate the treatment protocol of the child, the emotogenicity of the given protocols, the effects on the child, and the experiences of the child for nausea and vomiting and plan the current evidence-based care guidelines, evaluation criteria, algorithms and nursing interventions. Pediatric oncology nurses have important responsibilities in symptom management and providing holistic care. Pediatric oncology nurses should evaluate the treatment received by the child from the beginning of the treatment process, objectively and subjectively (based on the child's self-report), through assessment criteria, based on previous experiences.

References

1 *Ruggiero, A., Rizzo, D., Catalano, M., Coccia, P., Triarico, S., Attinà, G. (2018). Acute chemotherapy-induced nausea and vomiting in children with cancer: Still waiting for a common consensus on treatment. Journal of International Medical Research, 46(6), 2149-2156.*

2 *Duncan, C. N., Talano, J.-A. M., & McArthur, J. A. (2019). Critical Care of the Pediatric Immunocompromised Hematology/Oncology Patient: An Evidence-Based Guide. Cham: Springer International Publishing Imprint,Springer.*

3 *Marcdante, K. J., & Kliegman, R. (2019). Nelson essentials of pediatrics. (Oncology), 595-611. Retrieved from https://www.clinicalkey.com/dura/browse/bookChapter/3-s2.0-C20160012640*

4 *Hockenberry, M. J., & Rodgers, C. C. (2015). Nausea, vomiting, anorexia, and fatigue. Pediatric psycho-oncology: A quick reference on the psychosocial dimensions of cancer symptom management, 79.*

5 *Dupuis, L. L., Sung, L., Molassiotis, A., Orsey, A. D., Tissing, W., & van de Wetering, M. (2017). 2016 updated MASCC/ESMO consensus recommendations: prevention of acute chemotherapy-induced nausea and vomiting in children. Supportive care in cancer, 25(1), 323-331.*

6 *Paw Cho Sing, E., Robinson, P. D., Flank, J., Holdsworth, M., Thackray, J., Freedman, J., Phillips, R. (2019). Classification of the acute emetogenicity of chemotherapy in pediatric patients: A clinical practice guideline. Pediatric blood & cancer, 66(5), e27646.*

7 *ONS. (2017). Oncology Nursing Society. Pediatric chemotherapy-induced nausea and vomiting. Retrieved from https://www.ons.org/pep/chemotherapy-induced-nausea-and-vomiting-pediatric.*
Varejao, C. D. S., & Santo, F. H. D. E. (2019). Laser Acupuncture for Relieving Nausea and Vomiting in Pediatric Patients Undergoing Chemotherapy: A Single-Blind Randomized Clinical Trial. Journal of Pediatric Oncology Nursing, 36(1), 44-54.

8 *Evans, A., Malvar, J., Garretson, C., Pedroja Kolovos, E., & Baron Nelson, M. (2018). The use of aromatherapy to reduce chemotherapy-induced nausea in children with cancer: a randomized, double-blind, placebo-controlled trial. Journal of Pediatric Oncology Nursing, 35(6), 392-398.*

9 *Lown, E. A., Banerjee, A., Vittinghoff, E., Dvorak, C. C., Hartogensis, W., Melton, A., ... & Morgan, M. (2019). Acupressure to reduce treatment-related symptoms for children with cancer and recipients of hematopoietic stem cell transplant: protocol for a randomized controlled trial. Global advances in health and medicine, 8, 2164956119870444.*

10 *Dupuis, L. L., Kelly, K. M., Krischer, J. P., Langevin, A. M., Tamura, R. N., Xu, P., ... & Hendershot, E. (2018). Acupressure bands do not improve chemotherapy-induced nausea control in pediatric patients receiving highly emetogenic chemotherapy: A single-blinded, randomized controlled trial. Cancer, 124(6), 1188-1196.*

11 *ACS. (2019). Nausea and Vomiting. Retrieved from https://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/nausea-and-vomiting.html*

FT123

Chıldhood Obesıty

[1]*Dr. Tuba Özaydın,* [1]*Dr. Raziye Çelen*

[1] *Selçuk Üniversitesi Hemşirelik Fakültesi, Konya*

Objective: The aim of this study is to determine the extent of childhood obesity that has increased globally in our age and to give information about prevention studies.
World Health Organization is defined as abnormal or excessive fat accumulation, which overweight and obesity can impair health in the body. Childhood obesity is one of the most important problems faced by children in the 21 st century. Obesity problem is experienced especially in underdeveloped and developing countries. Globally, the number of overweight children under the age of five is estimated to be over 41 million. The prevalence of obesity in our country is increasing day by day. According to Turkey Nutrition and Health Survey; Overweight at 0-5 years of age was 17.9% and overweight and obese were 26.4%; In the age group 6-18, overweight and overweight were found to be 14.3% and 22.5%, respectively. Turkey between 6-11 years in 3963 in a study with children and parents; 11.1% of the children were overweight and 7.5% were obese.
Childhood obesity, which is associated with genetic factors, sedentary life and malnutrition habits, brings with it various health and economic problems. It is stated that individuals with childhood obesity are prone to chronic diseases in adulthood and have chronic disease at an earlier age than other individuals. The treatment of this problem which affects the health of individuals negatively requires cost and time.
In terms of noncommunicable diseases, childhood obesity is a preventable problem. Therefore, prevention of childhood obesity should be started from perinatal period. It is stated that the proper nutrition of the fetus in the womb, the baby in the postnatal period and the child in the school period are important in preventing childhood obesity. Therefore, children, families and individuals interacting with the child; training and awareness raising activities on healthy nutrition and physical activity issues are important.

Keywords: *Childhood, Obesity, Protection*

INTRODUNTION

Definition and Determination of Obesity in Children

Obesity is a condition that occurs with increased fat tissue in cases where energy intake is higher than energy consumption (Ergül & Kalkım, 2011). The World Health Organization (WHO) has defined excess weight and obesity as abnormal or excessive fat accumulation in the body, which disrupts health (WHO 1998). Fat tissue increases in the body, especially in infancy and puberty (Günöz et al 2002). WHO's Body Mass Index (BMI) calculation is most commonly used to determine obesity. Accordingly, BMI; it is obtained by dividing the body weight (kg) of the individual by the square of his height (in m) (BMI = kg / m2) (WHO 2019). In the determination of obesity in children and adolescents, a different application is applied than the calculation method of adults. In this group, percentile or z score values are used to determine obesity (WHO 2007). In addition, the BMI of individuals aged 2-19 years is calculated by the Center for Disease Prevention and Protection using age, sex, body weight and height (CDC 2019).

Epidemiology of Obesity in Children

Obesity is an important public health problem that concerns all countries of the world. It is increasing day by day in both developed and developing countries. Childhood obesity is considered a very serious problem by WHO in the 21st century (WHO 2019). According to the results of the

National Nutrition and Health Survey conducted in the United States in 2015-2016, the prevalence of obesity was 42.8% in middle-aged adults, 13.9% in children aged 2-5 years, 18.4% in children aged 6-11 and 20.6% in adolescents aged 12-19 years. It has been identified (NHANES, 2017). WHO states that 41 million children under five years of age and 340 million children aged 5-19 years and adolescents are obese or overweight (WHO 2018).

Considering the prevalence of obesity in our country, Turkey Nutrition and Health Survey (2010); overweight and obese were 26.9% and 17.9%, respectively; overweight and obese were found to be 14.3% and 22.5% in the 6-18 age group (Sağlık Bakanlığı, 2014). In a study conducted with primary school students in Sakarya, 13.9% of the students were obese and 14.2% were overweight (Önsüz et al., 2011). It was determined that 10.4% of Kastamonu 10-12 age group primary school students were overweight and 1.3% were obese (Metinoğlu, Pekol, & Metinoğlu, 2012). In a study conducted in Ankara, 11.1% of children were overweight and 7.5% were obese (Savaşhan et al., 2015). The incidence of obesity was found to be 15.7% in both children whose parents were obese (Savaşhan et al., 2015).

Causes of Obesity in Children

When the causes of obesity are evaluated, many factors appear. These are inheritance, gender, ethnicity, sedentary lifestyle, lack of physical activity, eating habits and environmental factors (Taveras et al 2013, Kelishadi and Poursafa 2014). The obesogenic environment is also responsible for the occurrence of obesity. Obesogenic environment; It is defined as the conditions in which the living conditions and the environment encourage the individual to obesity, including excessive eating and immobility. Obesogenic factors include large portions of foods containing high levels of fat and sugar. Since these foods are processed in high amounts, they cause a high level of hunger and cause obesity in children (Yayan & Çelebioğlu, 2018). The daily consumption frequency of ready-to-eat products increased with the change in the living conditions of the society and the entry of women into the working life. Especially with social media, children's interest in this kind of food is increasing. It is stated that families do not behave consciously on this issue (Hamşıoğlu 2013). With the developing technology, limiting the mobility of children and changing their feeding habits and food preferences cause obesity (Alpcan & Durmaz, 2015). In a study, obesity was found to be higher in those who had obese individuals in their family, who consumed chocolate and chips, those who had less activity, and those who were pressured to eat by their mother (Metinoğlu et al., 2012). It is stated that time spent with television, video games and computer in children is associated with obesity (Yavuz & Tontuş, 2013), (Epstein et al. 2008). It is reported that maternal malnutrition habits cause childhood obesity (Dubois and Girard 2006) and that BMI increases significantly as the duration of breastfeeding decreases (Yılmaz, Özaydın, Demirel, & Köse, 2016). Studies have shown that short sleep time in infants, children and adolescents is associated with the development of obesity (Liu et al. 2008). It has been found that there is a relationship between eating at night and eating obesity (Önsüz et al., 2011).

Treatment of Obesity

Childhood obesity; diabetes mellitus, hypertension, heart disease, stroke, cancers, diseases of the digestive system are reported to be associated with increased diseases (Yavuz & Tontuş, 2013). Obesity, which causes many health problems in children, is a preventable disease. Basic strategies for the prevention of childhood obesity; dietary regulation, increasing physical activity and exercise appropriately, reducing the time spent with sedentary activities such as watching television and changing behavior (Yavuz & Tontuş, 2013). Another way to prepare school-age children for the future as healthy individuals is to give them a more traditional diet. Consuming traditional foods such as yoghurt, molasses, bulgur, pickles and under-processed or unprocessed foods during school age will provide a healthier and balanced diet (Karakaş & Törnük, 2016)

Three strategies for obesity prevention are proposed. First; Nutritional habits starting from intrauterine period should be continued after birth. It is important to adopt proper nutrition and

physical activity behaviors during infancy and childhood. In secondary protection; health screening and periodic examinations for early diagnosis and intervention. Thirdly; obesity-related health problems emerge and include tertiary weight management clinics in multi-faceted interventions (Tarakçı, Hüseyinsinoğlu, & Çiçek, 2016). Nurses have a significant impact on the protection and development of the health of the groups they are interested in. It is very important for nurses to educate children and families about nutrition and physical activity, starting from neonatal period to adolescent period (Erdim, Ergun, & Kuğuoğlu, 2014)

CONCLUSION

Since childhood obesity causes adulthood obesity and paves the way for many chronic diseases, it is important to start preventive approaches from the early period. Obesity, which is rapidly increasing in the world, is an important social problem affecting individuals and societies and it is important to address this issue by those working in primary health care. In the fight against childhood obesity, it is important to inform families about adequate and balanced nutrition, physical activity and obesity. Encouraging the consumption of low-fat, sugary and salty traditional foods will be healthier for childhood. Since childhood obesity is a serious health and economic problem, it is important to provide holistic education and awareness to children and parents about the importance of healthy nutrition and physical activity in order to prevent this problem. It is considered necessary to take initiatives to improve the healthy lifestyle behaviors of mothers towards their children.

Kaynaklar

1 *Alpcan, A., & Durmaz, Ş. A. (2015). Çağımızın dev sorunu: çocukluk çağı obezitesi. Turkish Journal of Clinics and Laboratory, 6(1), 30-38.*

2 *Sağlık Bakanlığı, T. S. (2014). Türkiye beslenme ve sağlık araştırması 2010: Beslenme durumu ve alışkanlıklarının değerlendirilmesi sonuç raporu. Sağlık Bakanlığı Sağlık Araştırmaları Genel Müdürlüğü, Ankara.*

3 *Erdim, L., Ergun, A., & Kuğuoğlu, S. (2014). Çocuklarda obezitenin önlenmesi ve yönetiminde hemşirenin rolü. Sağlık Bilimleri ve Meslekleri Dergisi, 1(2), 115-126.*

4 *Ergül, Ş., & Kalkım, A. (2011). Önemli bir kronik hastalık: çocukluk ve ergenlik döneminde obezite. TAF Preventive Medicine Bulletin, 10(2), 223-230.*

5 *HEKİM, M. (2015). ÇOCUKLUK ÇAĞI OBEZİTESİNİN ÖNLENMESİNDE FİZİKSEL AKTİVİTE VE SPORUN ÖNEMİ. Journal of International Social Research, 8(37).*

6 *Karakaş, H., & Törnük, F. (2016). Geleneksel gıdaların okul çağı çocuklarının beslenmesindeki rolü üzerine bir araştırma. Fen Bilimleri Dergisi (CFD), 37(3).*

7 *Metinoğlu, İ., Pekol, S., & Metinoğlu, Y. (2012). Kastamonu'da 10-12 yaş grubu öğrencilerde obezite prevalansı ve etkileyen faktörler.*

8 *Önsüz, M. F., Zengin, Z., Özkan, M., Şahin, H., Gedikoğlu, S., Erseven, S., . . . Bektaş, H. (2011). Sakarya'da bir ilköğretim okulu öğrencilerinde obezite ve hipertansiyonun değerlendirilmesi. Sakarya Tıp Dergisi, 1(3), 86-92.*

9 *Savaşhan, Ç., Erdal, M., Sarı, O., & Aydoğan, Ü. (2015). İlkokul çağındaki çocuklarda obezite görülme sıklığı ve risk faktörleri. Türkiye Aile Hekimliği Dergisi, 19(1), 14-21.*

10 *Tarakçı, E., Hüseyinsinoğlu, B. E., & Çiçek, A. (2016). Çocuklarda Fiziksel İnaktivite, Obezite ve Koruyucu Rehabilitasyon Yaklaşımları. Turkiye Klinikleri Journal of Health Sciences, 1(2), 111-118.*

11 *Yavuz, R., & Tontuş, H. (2013). Erişkin, adolesan ve çocukluk yaş grubunda obeziteye klinik yaklaşım. Journal of Experimental and Clinical Medicine, 30(1s), 69-74.*

12 *Yayan, E. H., & Çelebioğlu, A. (2018). Obezojenik Çevre ve Çocukluk Çağı Obezitesine Etkileri.*
Yıldız, D., Eren Fidancı, B., & Suluhan, D. (2015). Çocukluk dönemi obezitesi ve önleme yaklaşımları. TAF Prev Med Bull, 14(4), 339.

13 *Yılmaz, A. A., Özaydın, E., Demirel, F., & Köse, G. (2016). Obez adölesanlarda obezite gelişimini belirleyen faktörlerin ve metabolik sendrom varlığının retrospektif olarak değerlendirilmesi. Türkiye Çocuk Hastalıkları Dergisi, 10(3), 157-161.*

14 *Kelishadi R, Poursafa P. A Review on the Genetic, Environmental, and Lifestyle Aspects of the Early-Life Origins of Cardiovascular Disease. Curr Probl Pediatr Adolesc Health Care. 2014;44(3):54-72.*

15 *Taveras EM, Gillman MW, Kleinman KP, et al. Reducing racial/ ethnic disparities in childhood obesity: the role of early life risk factors. JAMA Pediatr. 2013; 167(8): 731-8.*

16 *Dubois L, Girard M. Early determinants of overweight at 4.5 years in a population-based longitudinal study. Int J Obes (Lond) 2006;30:610-617. http://dx.doi.org/10.1038/sj.ijo.0803141.*

17 *Calışır H, Karacam Z. The prevalence of overweight and obesity in primary schoolchildren and its correlation with sociodemographic factors in Aydın, Turkey. Int J Nurs Pract 2011;17:166–73.*

18 *Epstein LH, Roemmich JN, Robinson JL, et al. A randomized trial of the effects of reducing television viewing and computer use on body mass index in young children. Arch Pediatr Adolesc Med 2008;162:239-245. http://dx.doi.org/10.1001/archpediatrics.2007.45*

19 *Liu X, Forbes EE, Ryan ND, et al. Rapid eye movement sleep in relation to overweight in children and adolescents. Arch Gen Psychiatry 2008;65:924-932. http://dx.doi.org/10.1001/archpsyc.65.8.924.*

20 *WHO 1998. Obesity: Preventing and managing the global epidemic. report of a world health organization consultation on obesity, Geneva, Switzerland, June 3-5, 1997.Genava.*

21 *Türkiye Beslenme ve Sağlık Araştırması 2010, Beslenme durumu ve alışkanlıklarının değerlendirilmesi sonuç raporu. Hacettepe Üniversitesi Sağlık Bilimleri Fakültesi, Beslenme ve Diyetetik Bölümü.*

22 *World Health Organization (2019) https://www.who.int/dietphysicalactivity/childhood/en/.*
National Health and Nutrition Examination Survey. (2017). Prevalence of Obesity Among Adults and Youth: United States, 2015–2016. NCHS Data Brief No. 288. Erişim adresi: https://www.cdc.gov/nchs/products/databriefs/db288.htm.

23 *World Health Organization. (2018, Şubat). Media Centre. Fact Sheet Reviewed Fabruary 2018. Erişim adresi: http://www.who.int/mediacentre/factsheets/fs311/en/*

FT124

Çocukluk Çağı Obezitesini Önlemek İçin Bebeklik Dönemine Yönelik Öneriler

Recommendations for Infants to Prevent Childhood Obesity

Raziye ÇELEN[1], Tuba ÖZAYDIN[2]

[1]Selcuk University, Faculty of Nursing, Pediatric Nursing, Konya, Turkey.

[2]Selcuk University, Faculty of Nursing, Public Health Nursing, Konya, Turkey.

Amaç:
Bu derlemenin amacı, çocukluk çağı obezitesini önlemek için bebeklik dönemine yönelik önerilere bir bakış açısı kazandırmaktadır.

Yöntem:
Google Akademik ve PubMed veri tabanları kullanılarak "çocukluk çağı obezitesi", "bebek", "önlemek" ve "hemşire" primer anahtar kelimeleri ile literatür incelemesi yapılmıştır.

Bulgular:
Dünya'da beş yaş altı 41 milyon çocuğun aşırı kilolu ya da obez olduğu belirtilmektedir. Tıp Enstitüsü (IOM) obezitenin önlemesine yönelik raporunda, bebeklik dönemini (0-2 yaş) obezitenin önlenmesi için kritik bir zaman olarak tanımlamaktadır. IOM' un rehberinde büyümenin izlenmesi, sağlıklı beslenme, uyku ve fiziksel aktivite konularına odaklanılmıştır. Büyümenin izlenmesi ile ilgili olarak; bebeklik döneminde uzunluk-ağırlık değişimlerinin bir yıl boyunca Dünya Sağlık Örgütü büyüme eğrilerine göre izlenmesi gerektiği belirtilmektedir. Bebek beslenmesi ile ilgili olarak emzirme ve ilk altı ay sadece anne sütü verme, altıncı ayda katı gıdaya geçiş ile birlikte emzirmenin sürdürülmesi gerektiği üzerinde durmaktadır. Obezitenin önlenmesinde bebeğin yaşa uygun uyku süresi kadar uyumanın da önemli olduğu belirtilmektedir. Bununla birlikte fiziksel aktiviteyi arttırmak ve sedanter davranışı azaltmak için, bebeklerin ev içi ve dışında daha bağımsız hareket etmesi, ebeveyn-bebek etkileşimleriyle yerde birlikte zaman geçirmesi ve altı ay altındaki bebeklerin daha fazla yüzüstü pozisyonda aktivitesi yapması önerilmektedir. Bebek oto koltukları, bebek arabaları, sallanan ana kucakları ve bebek oyun havuzu gibi bebek malzemelerinin uzun süreli kullanımının sınırlandırılması önemli olduğu belirtilmektedir.

Sonuç:
Hemşireler, annelerin obezite ile ilgili algılarını bebek beslenmesine yönelik tutum ve bilgileri değerlendirmeli, varsa bilgi eksikliğinin giderilmesine yönelik eğitim ve danışmanlık verilmelidir. Annelerin uygun olmayan beslenme yaklaşımlarını düzeltmelerine yardımcı olunmalıdır.

Anahtar Kelimeler: *Bebeklik, Çocukluk, Hemşire, Obezite, Önleme.*

ABSTRACT
Aim:
The aim of this review is to provide an insight into the recommendations for infancy to prevent childhood obesity.

Method:
In the literature search; PubMed, Google Scholar databases were searched for relevant articles that met the review objective. The terms “childhood obesity”, “infant” and “prevention” and “nursing” were used as the primary keywords.

Results:
World Health Organization (WHO) is reported that 41 million children under the age of five were overweight or obese. By Institute of Medicine (IOM), infancy (0-2 years) is defined as a critical time for obesity prevention. IOM's guideline focuses on growth monitoring, healthy feeding, sleep and physical activity. Growth monitoring in infants, it is suggested that weight-for-length changes in infancy should be monitored according to the WHO growth curves throughout the first year. In relation to infant feeding, infants should be exclusive breastfeeding for first six months of life, introduction of solid foods at six months together with continued breastfeeding. In addition, it is stated that the age-appropriate sleep duration for infants is important for the prevention of obesity. in order to increase physical activity and reduce sedentary behavior, it is recommended that infants move more independently at indoors and outdoors, spend time together on the ground with parent-infant interactions, and infants under the age of six months perform more prone position. It is important to note that the use of baby equipment such as baby car seats, strollers, bouncer seats and playpens should be limited.

Conclusion:
Nurses should evaluate mothers' perceptions about obesity, attitudes and information about baby nutrition, and education and counseling should be provided to eliminate any lack of knowledge. They should help mothers correct inappropriate feeding approaches.

Keywords: *Infant, Childhood, Nursing, Obesity, Prevention.*

INTRODUCTION

Childhood obesity is a multifaceted problem caused by biological, behavioral, and socio-environmental factors (1). It is reported that 41 million children under the age of five were overweight or obese in the world (2). The 2018 Turkey Demographic and Health Survey (2018 TDHS) report states that 8.1% of children under five are obese (3).

Obesity is one of the most serious public health problems of the 21st century in both developing and developed countries (4). It increases the risk of diseases such as hypertension, diabetes, cardiovascular diseases, musculoskeletal disorders and psychological problems in children (4, 5). Overweight and obesity in childhood are reported to be associated with short-term adverse outcomes such as reduced quality of life and increased health care costs (6).

Current studies show that overweight children from early childhood to the age of two can predict overweight or obese after 10 years (7). In a study with infants, a positive correlation was found between rapid weight gain in the first four months of life and overweight at age seven (8). Most of intervention studies for childhood obesity have focused on school age. However, once the child develops obesity, the risk of persistence is likely. Therefore, earlier stages of the life should be focused on the prevention of obesity (9). Nowadays, obesity is seen in all age groups, but it is more common in the age of physiologically rapid fat storage. These ages are most commonly in the first year of life, between the ages of five and six and adolescence. Obesity that begins before the age of five and after the age of 15 is more dangerous (10). This study aims to provide an insight into the recommendations for infants to prevent childhood obesity.

Prevention of Obesity in Infants

In the *Early Childhood Obesity Prevention Policies* report of the Institute of Medicine (IOM, 2011), infancy (0-2 years) is defined as a critical time for obesity prevention (11). The IOM's infancy related guideline focuses on growth monitoring, healthy feeding, sleep and physical activity (12).

Growth monitoring in infants; identifying infants at risk for overweight (84.1-97.7 percentile) and overweight (>97.7 percentile) and, weight-for-length changes should be monitored according to the World Health Organization (WHO) growth curves throughout the first year. WHO recommends the use of growth charts as a standard for clinical evaluation of infant growth from birth to 24 months (9). In a systematic review, it was found that overweight in infancy increases the risk of obesity in early childhood (13). Nurses in primary health care have the opportunity to follow-up a child at least twelve times before the age of five. During these follow-up visits, nurses should evaluate the perceptions of mothers about obesity. Nurses can help parents to overcome any lack of information about what obesity is and how it relates to growth curves and help them to correct inappropriate feeding approaches. This should be started when the child is born and maintained during healthy child follow up (10).

There are many interventions to prevent the risk of obesity. The most important is that child health professionals encourage families to breastfeeding and responsive feeding (recognize and respond to infant hunger and fullness cues) practices. Also in relation to infant feeding, ıt is also emphasized that infants should be exclusive breastfeeding for first six months of life, introduction of solid foods at six months together with continued breastfeeding. It is important for parents to recognize symptoms that show signs of hunger and satiety of infants and to seek support from health professionals in responding to these symptoms (11, 12). In the meta-analysis studies, it is stated that exclusive breastfeeding in the first six months of life reduces the risk of overweight in childhood (14, 15). In a systematic review study, there is some evidence that the early introduction of solid food (≤4 or > 6 months) may increase the risk of overweight for the child (16).

In addition, it is stated that the age-appropriate sleep duration for infants is important for the prevention of obesity. Most studies showing the relationship between sleep and childhood obesity have been conducted with older children, and two studies have shown that sleep duration in infancy is associated with weight gain (17, 18). Prolonged sleep duration in children before the age of three is reported to be an important factor in reducing the risk of obesity (19). In order for nurses to effectively guide parents, more infant sleep studies are needed to provide peaceful environments that help regulate sleep and reduce the risk of obesity (12).

However, in order to increase physical activity and reduce sedentary behavior, the IOM (2011) guide recommends more independent, free movement of infants at indoors and outdoors, spending time together on the ground with parent-infant interactions, and provide more daily opportunities with "tummy time" (in prone position) activities for infants under six months (11). Tummy time, it is a term used to allow infants to spend time in the prone position. It helps to strengthen the musculo-motor movement of the infants' neck and back, which is essential for more complex motor movements such as sitting, rolling, crawling and standing, as well as increased motor movement of the infants (20). It is emphasized that limiting the long term use of baby equipment such as car seats, strollers, bouncer seats and playpens is important (12).

CONCLUSION

Nurses should evaluate mothers' perceptions about obesity, attitudes and information about baby nutrition, and education and counseling should be provided to eliminate any lack of knowledge. They should help mothers correct inappropriate feeding approaches. Increasing the number of early intervention studies for the recognition and prevention of obesity risk will make a significant contribution to the field.

References

1. *Ang YN, Wee BS, Poh BK, Ismail MN. Multifactorial influences of childhood obesity. Current Obesity Reports 2013; 2(1):10-22.*
2. *World Health Organization. Obesity and overweight. 2018; Available at: https://wwwwhoint/en/news-room/fact-sheets/detail/obesity-and-overweight Accessed: November 11, 2019.*
3. *Hacettepe University Institute of Population Studies. 2018 Turkey Demographic and Health Survey. Hacettepe University Institute of Population Studies, T.R. Presidency of Turkey Directorate of Strategy and Budget and TÜBİTAK, Ankara, Turkey; 2019.*
4. *Lauria L, Spinelli A, Buoncristiano M, Nardone P. Decline of childhood overweight and obesity in Italy from 2008 to 2016: results from 5 rounds of the population-based surveillance system. BMC public health 2019; 19(1):618.*
5. *Lobstein T, Jackson-Leach R. Planning for the worst: estimates of obesity and comorbidities in school-age children in 2025. Pediatric Obesity 2016; 11(5):321-325.*
6. *Hayes A, Chevalier A, D'Souza M, Baur L, Wen LM, Simpson J. Early childhood obesity: Association with healthcare expenditure in Australia. Obesity 2016; 24(8):1752-1758.*
7. *Koren A, Kahn-D'angelo L, Reece SM, Gore R. Examining childhood obesity from infancy: the relationship between tummy time, infant BMI-z, weight gain, and motor development—an exploratory study. Journal of Pediatric Health Care 2019; 33(1):80-91.*
8. *Stettler N, Zemel BS, Kumanyika S, Stallings VA. Infant weight gain and childhood overweight status in a multicenter, cohort study. Pediatrics 2002; 109(2):194-199.*
9. *Lumeng JC, Taveras EM, Birch L, Yanovski SZ. Prevention of obesity in infancy and early childhood: a National Institutes of Health workshop. JAMA pediatrics 2015; 169(5):484-490.*
10. *Yiğit R. Çocukluk Dönemi Obezitesinin Yönetiminde Hemşirenin Rolü. Turkish Journal of Research & Development in Nursing 2011; 13(1).*
11. *McGuire S. Institute of medicine (IOM) early childhood obesity prevention policies. washington, DC: The national academies press; 2011. In.: Oxford University Press; 2012.*
12. *Gaffney KF, Kitsantas P, Brito A, Kastello J. Baby steps in the prevention of childhood obesity: IOM guidelines for pediatric practice. Journal of pediatric nursing 2014; 29(2):108-113.*
13. *Weng SF, Redsell SA, Swift JA, Yang M, Glazebrook CP. Systematic review and meta-analyses of risk factors for childhood overweight identifiable during infancy. Archives of disease in childhood 2012; 97(12):1019-1026.*
14. *Harder T, Bergmann R, Kallischnigg G, Plagemann A. Duration of breastfeeding and risk of overweight: a meta-analysis. American journal of epidemiology 2005; 162(5):397-403.*
15. *Arenz S, Rückerl R, Koletzko B, von Kries R. Breast-feeding and childhood obesity—a systematic review. International journal of obesity 2004; 28(10):1247.*
16. *Pearce J, Taylor M, Langley-Evans S. Timing of the introduction of complementary feeding and risk of childhood obesity: a systematic review. International journal of obesity 2013; 37(10):1295.*
17. *Tikotzky L, De Marcas G, Har-toov J, Dollberg S, Bar-haim Y, Sadeh A. Sleep and physical growth in infants during the first 6 months. Journal of sleep research 2010; 19(1-Part-I):103-110.*
18. *Taveras EM, Rifas-Shiman SL, Oken E, Gunderson EP, Gillman MW. Short sleep duration in infancy and risk of childhood overweight. Archives of pediatrics & adolescent medicine 2008; 162(4):305-311.*
19. *Kaar JL, Schmiege S, Kalwarf H, Woo JG, Daniels S, Simon SL. Longitudinal assessment of sleep patterns during early childhood and their association with obesity. Childhood Obesity 2019; Epub ahead of print.*
20. *Wen LM, Baur LA, Simpson JM, Rissel C, Flood VM. Effectiveness of an early intervention on infant feeding practices and "tummy time": a randomized controlled trial. Archives of pediatrics & adolescent medicine 2011; 165(8):701-707.*

FT125

Diaper Dermatitte Anne Sütü Kullanımı

Menekşe Nazlı AKER, İlknur M. GÖNENÇ**

**Ankara Üniversitesi, Hemşirelik Fakültesi, Ebelik Bölümü, Ankara, Türkiye*

Amaç:
Diaper dermatit, çocuk bezinin içinde kalan alanda görülen deri inflamasyonu ile karakterize bir kontakt dermatittir. Çocuklarda en yaygın görülen dermatit olan diaper dermatit prevalansı %7-35 arasında değişmektedir. Diaper dermatit tedavisinin iki amacı vardır. Bunlar; hasarlı dokunun onarımını hızlandırmak ve tekrarlamasını önlemektir. Fekal enzimlerle temasın azaltılması için yenidoğanda her saat daha sonraki dönemlerde 3-4 saatte bir bezin değiştirilmesi, cildin kuruması için havalandırılması bakımın temelini oluşturmaktadır. Bunun yanında bazı ek tedavi yöntemlerinden yararlanılabilmektedir. Bu literatür incelemesinde, diaper dermatitinde anne sütü kullanımının etkisinin incelenmesi amaçlanmıştır.

Yöntem:
Bu literatür incelemesi çalışması; Ulakbim Tıp Veri Tabanı, Türk Medline, Pubmed veri tabanları taranarak yürütülmüştür. Literatür taramasında "diaper dermatit" ve "diaper dermatit ve anne sütü" kelimeleri ile bu kelimelerin İngilizce karşılıkları kullanılmıştır. Çalışmaya, Türkçe ve İngilizce dillerinde yayınlanmış olan deneysel çalışmalar dahil edilmiştir.

Bulgular:
Yürütülen literatür taraması sonucunda diaper dermatitte anne sütü kullanımına yönelik üç çalışmaya ulaşılmıştır. Çalışmalara dahil edilen tüm bebeklerin ailelerine temel bez bakımı konusunda bilgilendirme yapılmıştır. Anne sütü, günde iki/üç kez uygulanmıştır. Literatür incelemesi kapsamına alınan bu çalışmaların sonuçları incelendiğinde; anne sütü uygulamasının sadece temel bakım uygulamasına göre daha etkili olduğu, %1 hidrokortizon merhem uygulaması ile benzer şekilde dermatit şiddetini azalttığı, dermatit şiddetini azaltmada morina karaciğeri yağı ve % 40 çinko oksit içeren bariyer kremden daha az etkili olduğu görülmüştür.

Sonuç:
Diaper dermatit tedavisinde anne sütünden yararlanılabilmektedir. Ancak literatürde bu konuya ilişkin oldukça sınırlı sayıda çalışma olup kanıtlar yetersizdir. Diaper dermatit tedavisinde anne sütü kullanımına ilişkin randomize kontrollü çalışmaların yapılması önerilmektedir.

Anahtar kelimeler: *Diaper dermatit, anne sütü, bakım*

Use of breast milk on diaper dermatitis

Aim:
Diaper dermatitis is a contact dermatitis characterized by skin inflammation in the area of the diaper. The prevalence of diaper dermatitis, which is the most common dermatitis in children, varies between 7-35%. Diaper dermatitis treatment has two purposes. These; to accelerate the repair of damaged tissue and prevent recurrence. In order to reduce contact with faecal enzymes, changing the diaper every 3-4 hours in the newborn, and then ventilating to dry the skin is the basis of care. In addition, some additional treatment methods can be used. In this literature review, we aimed to investigate the effect of breast milk use on diaper dermatitis.

Method:
In this literature review study; Ulakbim Medical Database, Türk Medline and Pubmed databases were screened. In the literature review, for the screening "diaper dermatitis" and "diaper dermatitis and breast milk" were used. Experimental studies published in Turkish and English languages were included in the study.

Findings:
Three studies on breast milk use in diaper dermatitis were reached. The families of all infants included in the studies were informed about basic diaper care. Breast milk was administered two / three times a day. When the results of these studies included in the literature review are examined; It was found that breast milk application was more effective than basic care, it decreased the severity of dermatitis similar to 1% hydrocortisone ointment application, and it was less effective than the barrier cream containing cod liver oil and 40% zinc oxide in reducing the severity of dermatitis.

Conclusion:
Breast milk can be used in the treatment of diaper dermatitis. However, there are very few studies on this subject in the literature and the evidence is insufficient. Randomized controlled trials on the use of breast milk on the treatment of diaper dermatitis are recommended.

Key words: *Diaper dermatitis, breast milk, care*

INTRODUCTION

Diaper dermatitis is a contact dermatitis characterized by skin inflammation in the area inside the diaper (1). It is classified under ICD-10 with the code L22 and diaper (napkin) dermatitis. This diagnosis can be used in case of erythema, rash and psoriasiform diaper rash (2). It perineal, perianal and surrounding areas; may develop due to moisture, irritation and, lack of ventilation (3). It is a problem that causes discomfort and stress in infants and caregivers. The prevalence of diaper dermatitis, which is the most common dermatitis in children, varies between 7-35% (3, 4). The most common group is children under 24 months. However, the incidence is very high in children between nine and 12 months of age. This result is probably due to the fact that children in this age group need more diapers than children in other age groups (5).

Many factors are effective in the etiology of diaper dermatitis. Some of those; frequency of urination and defecation, type of diaper used, frequency of diaper change, hygiene practices, skin products, diet, medicines (6), wetness and friction, microorganisms (especially candida albicans, Staphylococcus aureus or group A) streptococci), chemical irritants (especially soap, detergent, antiseptics, diaper substances), antibiotics, gastrointestinal diseases such as diarrhea and urinary tract developmental anomalies (7). Diaper dermatitis treatment has two purposes. These; to accelerate the repair of damaged tissue and prevent recurrence. In order to reduce contact with faecal enzymes, changing the diaper every 3-4 hours in the newborn, and ventilating the skin to dry is the basis of care (3, 6). This suggests that diapers should change every three to four hours, a period determined by the frequency with which babies urinate. This means that the diaper needs to be changed six to eight times a day. One of the main factors affecting the prevalence of diaper dermatitis is the frequency of diaper changes. This is because the risk of developing dermatitis increases when urine and feces come into contact with the skin for a long time (5). In diaper dermatitis, some treatment methods can be used in addition to basic care. One of these methods is the use of creams that strengthen the skin barrier. To prevent diaper dermatitis; creams containing odorless moisturizer to restore skin barrier function, which act as a barrier to protect the skin from irritants (urine, feces), and which are effective in treating skin infection in the diaper area can be used (5). Breast milk application is one of the methods used in diaper dermatitis. In this literature review, we aimed to

investigate the effect of breast milk use on diaper dermatitis. Breast milk application is one of the methods used in the treatment of diaper dermatitis. In this literature review, it is aimed to investigate the effect of breast milk use on diaper dermatitis.

METHOD

In this literature review study; Ulakbim Medical Database, Türk Medline and Pubmed databases were screened. In the literature review, for the screening "diaper dermatitis" and "diaper dermatitis and breast milk" were used. Experimental studies published in Turkish and English languages were included in the study.

FINDINGS

In this literature review study, three studies on breast milk use in diaper dermatitis were reached. In the all of these studies the families of all infants were informed about basic diaper care. Breast milk was administered to the dermatitis two / three times a day. When the results of these studies included in the literature review are examined; It was found that breast milk application was more effective than basic care, it decreased the severity of dermatitis similar to 1% hydrocortisone ointment application, and it was less effective than the barrier cream containing cod liver oil and 40% zinc oxide in reducing the severity of dermatitis.

Farahani et al., in their study involving infants with mild to moderate diaper dermatitis (0-24 months), were given general advice on the care of diaper dermatitis (frequent replacement of the diaper, allowing the affected area to dry or ventilate, and gently cleaning the hips at each diaper change). One group received 1% hydrocortisone ointment twice daily (n = 70) and the other group received breast milk (n = 71). Clinical evaluation was performed on 3rd and 7th days. Dermatitis was evaluated using a six-point scale (0: no erythema; 1: mild, diffuse or partial erythema; 2: significant, sharp-bounded erythema; 3: severe erythema without infiltration; 4: serious erythema with infiltration; 5: vesiculation or epidermal defects). As a result of the study, both methods were found to be effective in reducing the severity of dermatitis observed on the 3rd and 7th days ($p < .001$). The effects of these methods on diaper dermatitis were similar in two groups (8).

GOzen et al. conducted their studies with infants who developed diaper dermatitis in the neonatal intensive care unit. Infants in one group were treated with breast milk (n = 30) and infants in the other group with barrier cream containing cod liver oil and 40% zinc oxide (n = 30). In both groups, the diaper was changed every three hours (eight times a day) and non-alcoholic cotton wipes soaked in water were used for cleaning. Both treatment methods were used for up to five days. Four global clinical impression scales (0 = none, 1 = mild erythema, 2 = large erythema, and 3 = deeper and wider erythema) were used for evaluation. At the end of the study, positive response was obtained in both groups, but barrier cream was found to be more effective than breast milk (3).

Seifi et al. included 30 infants aged 0-12 months in their study. They randomly assigned 15 babies to the control group and 15 babies to the intervention group. Both groups were informed about changing the diapers frequently, cleaning with warm water and drying the area in the diapers. The intervention group was asked to apply breast milk three times a day for five days in addition to these applications. On the first, third and fifth days, the rash severity scale (0 = none, 1 = mild erythema, 2 = moderate erythema, 3 = moderate erythema maceration, 4 = severe erythema pustules or ulceration) was used. There was a statistically significant ($p = 0.006$) decrease in the mean rash score in the intervention group, but no significant change in the control group (4).

CONCLUSION

The treatment of diaper dermatitis is important for the relief of infants and caregivers. Breast milk can also be used in the treatment. However, there are only a limited number of studies in the literature on the use of breast milk in the treatment of diaper dermatitis and the evidence is

insufficient. Randomized controlled trials on the use of breast milk in the treatment of diaper dermatitis are recommended.

References

1. *Cohen B. Differential Diagnosis of Diaper Dermatitis. Clin Pediatr (Phila). 2017;56(5_suppl):16S-22S. doi: 10.1177/0009922817706982.*
2. *International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10)-WHO Version for ;2016 retrived from: https://icd.who.int/browse10/2016/en#/L20-L30*
3. *Gozen D, Caglar S, Bayraktar S, Atici F. Diaper dermatitis care of newborns human breast milk or barrier cream. J Clin Nurs. 2014,23(3-4):515-23. doi: 10.1111/jocn.12047. Epub 2013 Mar 19.*
4. *Seifi, B., Jalali, S., & Heidari, M. Assessment effect of breast milk on diaper dermatitis. Dermatology reports. 2017, 9(1), 7044. doi:10.4081/dr.2017.7044*
5. *Sukhneewat, C., Chaiyarit, J. & Techasatian, L. Diaper dermatitis: a survey of risk factors in Thai children aged under 24 months. BMC Dermatol 19, 7 (2019) doi:10.1186/s12895-019-0089-1*
6. *Blume-Peytavi U, Kanti V. Prevention and treatment of diaper dermatitis. Pediatr Dermatol. 2018;35(1):19-23. doi: 10.1111/pde.13495.*
7. *Serdaroğlu S., Üstünbaş K.S. Diaper dermatitis (Napkin dermatitis, nappy rash) J Turk Acad Dermatol 2010; 4 (4): 04401r.*
8. *Farahani LA, Ghobadzadeh M, Yousefi P. Comparison of the effect of human milk and topical hydrocortisone 1% on diaper dermatitis. Pediatr Dermatol. 2013 Nov-Dec;30(6):725-9. doi: 10.1111/pde.12118. Epub 2013 Apr 22.*

FT126

Atraumatic Care In Childhood Immunization

Çocukluk Dönemi Aşı Uygulamarında Atravmatik Bakım

*Öğr. Gör. Gülay ARSLAN, **Prof. Dr. Emine GEÇKİL

*Necmettin Erbakan Üniversitesi, Seydişehir Sağlık Bilimleri Fakültesi, Çocuk Sağlığı ve Hastalıkları Hemşireliği AD, Konya/Türkiye,

** Necmettin Erbakan Üniversitesi, Hemşirelik Fakültesi, Çocuk Sağlığı ve Hastalıkları Hemşireliği AD, Konya/Türkiye,

ÖZET

Çocuk hastalıklarının önlenmesi ve sağlığının korunmasında, geliştirilmesinde büyük ilerlemeler olmasına rağmen, uygulanan işlemlerin birçoğu çocuk için travmatik, ağrılı ve korku verici nitelikte olabilmektedir. Wong tarafından geliştirilen "atravmatik bakım"; sağlık profesyonelleri tarafından çocuklar ve ailelerinin sağlık bakım ortamlarında yaşadıkları fiziksel ve psikolojik sorunları yok eden ya da azaltan terapötik bakımın verilmesini savunur. Bebeklerin/çocukların yaşadığı ağrı, davranışlarını, aile bebek/çocuk etkileşimini, beslenme düzenini, bebeğin çevreye uyumunu, büyüme ve gelişmeyi olumsuz etkilemektedir. Atravmatik bakımda temel esas zarar vermemek olup aileyi merkeze alan bir uygulamadır. Profesyonel hemşirelerden beklenen bilimsel bilgiye dayalı, güvenilir ve etkili bakım vermesidir. Güncel çalışmalar ışığında hemşirelerin atravmatik bakım konusunda bilgi ve becerilerini artırarak bunları uygulamaları önem taşımaktadır.

***Anahtar Kelimeler**: Aşı,Ağrı,Hemşire,Çocuk,Ağrı Yönetimi*

ABSTRACT

Despite the fact that there is a great progress in terms of prevention of pediatrics dideases and protection and imrovement of child health, many of the applied operations could be traumatic, dolorous and frightening for the child. "Atraumatic Care", developed by Wong; ergues that therapeutic care, which either removes or reduces the bath physical and psychological problems that children and their families en counter in healthcare environments be made by healthcare professionals. The aches that children or babies have, affect their behaviours, the interaction between the family and the baby or the child, their diet, their adoptability to social suroundings and their growth and development negatively. The main principle of "Atraumatic care" is not to harm, end it is a practice which focuses on family. What is expected from Professional nurses is that they make knowledge based, trust worthy and effective care. It's important that in the light of recent studies, nurses improve both their information and skills in terms of atraumatic-care and apply these practices.

***Key Words**: Immunization,Pain,Nurse,Child,Pain Management*

INTRODUCTİON

In terms of prevention of pediatric diseases and constitution of a healty lifestyle, the protection, improvement and continuation of child health, great progress has been made, but despite this fact, many of the applied operations might be traumatic, painful, agonising and agitative for the child(1,2). In 1989, Donna Wong developed a nurseling philosophy named as "Atraumatic Care". Atraumatic Care argues that the therapeatic care which either removes or reduces the physical and psychological problems that children and their families encounter in healthcare enviroments be made by health

professionals. The main of atraumatic-care is not to harm(1,3). The principles of Atraumatic Care are;
Determining the factors that may cause stress in child and family (Physical problems, psychological problems, environmental factors).
Reducing the time that the child remains separate from family to the least.
Improving the feeling of control.
Reducing the aches and woundings to the last and preventing them(1,3).

Suggestions of Atraumatic Care

Table 1. Suggestions of Atraumatic Care of Children(4,5,6)

Principles	**Suggestions of Atraumatic Care**
Reducing the time that the child remains separate from family	Ensure that families actively take part in caring practices. Encourage family-centere-care.
Improving the feeling of control.	See the family as a key part in the team. Establish a trust relationship, inform the family about the process, support the family and the child to express their feelings. Pay attention to their past experiences, answer the questions. Teach them thestrategies for overcoming the stress.
Reducing the aches and woundings to the last and preventing them	Pharmacological methods Non-pharmacological methods Injection techniques Provide proper pain management.

Atraumatic Care in Vaccination in Chilhood Period

Vaccination makes up an important portion of preventive health services. Vaccination is a low-prices, trustworty and effective approach to preserve ahild and adult health against the most freguent diseases(7).
Considering taht the babies first experience of pain is the application of vaccination, the importance of pain management in vaccination applications occurs (4,7,8). Atraumatic care should be made stating from the first moments that baby starts to live(6).
In USA, according to national immunization programme (2019), 31doses of vaccination is applied until the child reaches the age of 6, meanwhile in Turkey, according to the calender of vaccination of the ministry of health (2013), 18 doses of vaccination is applied(10).
Due to babies remembering the stimuli that occurs and relapses in the early term, it's accepted that they overreact when they later en counter with the same stimuli (4,11). It's also known that due to this experienced stress, families Show reluctence in bringing their children to vaccination and they postpone the application of vaccination (4,5). The pain that babies and children experience, might hinder their behaviors the interaction between the family and baby/child, their diet, the baby's adaptibility to social surroundings as well as causing changes in the evolution of brain and senses and effects the growth negatively. The newborn and the children, due to the pain they experience, have physiological and metabolic problems, as well as mentioned behaviors(12).
To reduce the pain and distress that the babies and the children experience during the vaccination process, a great variety of pharmacological, non-pharmacological methods and injection techniques were used. Pain control and management is provided by using these techniques either together or individually. In spite of the fact that pharmacological approaches are efficient in terms of reducing

the pain, due to the side effects of medications, it's suggested that, especially in babies and children, non-pharmacological methods or proper injection techniques be used, and it's also suggested that the method which is going tobe used should be easy, fast and it should notrequire preperations(3,13,14,15).

Some Studies On Atraumatic Care In Vaccination In Chilhood Period

Kostandy at al. (2013), in the RCT that they did in order to find out the effect of kangaroo-care on the pain which occurs during hepatitis B vaccination process, found out that kangaroo-care shortens the crying durations and slows down the heart rate(16).

In the study which analyses what do parents do to manage the pain during the vaccination process, it's stated that in all age groups, physical comfort, swinging, verbal inculcation are the most frequently nused non-pharma techniques, and it's seen that in order to reduce the discomfort that takes place due to the existence of needle, causing distraction and using pacifiers are more effective(17).

In the RCT that was done in order to compare in efficacies of glucose and sucrose, İt is found out that the intensity of pain is felt more in the group that had glucose solution group than groupthat had sucrose, but the difference is not statistically significant. In the comparison of pain intensity between the control groups and the treatment groups, it's shown that the intensity of pain in the control group is higher than theother group(18).

Küçükoğlu et al. (2015) found out that during the vaccination that is applied in classic holding position and facilitated tucking position, the pain perception of newborns who held in facilitated tucking position was lower(19).

During the immunization process of Buzzy method, which combines external cold application and vibration in children, the levels of pain and distress of the treatment group were statistically significantly lower than the control group(20).

In the RCT that was done to determine the level of pain of blister application during the vaccination process in order to reduce the level of pain, the blister which will bw applied to the area that vaccination is going to be applied reduces the intensity of pain in babies(21).

Hashemi et a. (2016)'s study which was done on the effect of swaddling, breast-feeding and usage of both on the pain that vaccination causes, it was found out that breast-feeding in a short time a little bit more effective than swaddling on the combination of both in terms of reducing the average pain density(22).

In the study in which ShotBlocker was used in order to manage the injection pain which was related to vaccination in healthy term newborns, in the ShotBlocker group, the pain levels were found statistically significantly lower than the control group, before and during the injection(23).

It's determined that during the vaccination process applied to newborn babies, breast-feeding is effective on slowing the heart rate, shortening the crying duration, preventing the decrease of oxygen saturation and reducing the pain(24).

It's found out that breast-feeding is more effective in reducing the pain in healty term infants than swaddling or kangaroo-care. The crying duration of babies who were in the breat-feeding group was shorter compared to other groups(25).

In the RCT that was done in order to make comparison between the effect of 10-second long hand pressure before injection and rapid injection, without aspşration in babies who were 4-6 months old., the score of pain intensity and the crying duration during the injection were found statistically significantly lower in three intervention groups then the control group(4).

CONCLUSİON and RECOMMENDATİONS

Atraumatic Care is a low-cost and very efficient car efor both children and parients. Due to babies remembering the stimuli that ocur and repeat during the early term and taking the fact that babies overreact when they en counter the some stimuli into consideration, araumatic-care should be made starting from the moment that babies start tol ive. In the light of recent studies, it's important that nurses should improve both their information and skills and put these into practice.

References

1. *Töruner EK, Büyükgönenç L. Çocuk Sağlığı Temel Hemşirelik Yaklaşımları. Gökçe Ofset, Ankara: 2012; 22-32.*
2. *Teksöz E, Ocakçı AF. Çocuk Hemşireliği'nde Sanat Uygulamaları. DEUHYO ED. 2014; 7(2),119-123.*
3. *Hockenberry MJ, Wilson D. Wong's Nursing Care Of İnfants And Children. 10th edition. Canada: Mosby Elsevier: 2015; 8-9,207.*
4. *Göl İ, Özsoy SA. Effects of rapid vaccine ınjection without aspiration and applying manual pressure before vaccination on pain and crying time in ınfants. Worldviews on Evidence-Based Nursing, 2017; 14(2):154–162.*
5. *Pazarcıkçı F, Efe E. Çocukluk Dönemi Aşı Uygulamalarında Atravmatik Bakım Yöntemleri. Uluslararası Hakemli Kadın Hastalıkları ve Anne Çocuk Sağlığı Dergisi. 2017; (9).62-77.*
6. *Aksoy YE, Genç RE. Yenidoğanda Atravmatik Bakım. Turkiye Klinikleri J Health Sci.2019.*
7. *Erkul M, Efe E. Bebeklerde aşı uygulamaları sırasında oluşan ağrıyı azaltmada emzirme yönteminin kullanılması. Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi.2015;18:4.*
8. *Yılmaz G, Caylan N, Oğuz M, Karacan CD. Oral sucrose administration to reduce pain response during immunization in 16–19-month infants: a randomized, placebo-controlled trial. Eur J Pediatr.2014; 173:1527–1532.*
9. *cdc.gov. Available from: https://www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined schedule.pdf.*
10. *asi.saglık.gov. Available from: https://asi.saglik.gov.tr/asi-takvimi/.*
11. *Akyürek B, Conk Z. [The Efficacy of Non-Pharmacological Pain Relief Methods In Injection: Application to Newborns]. Ege Üniversitesi Hemşirelik Yüksek Okulu Dergisi.2006;22(1):1-17.*
12. *Dinçer S, Yurtçu M, Günel E. Yenidoğanlarda Ağrı ve Nonfarmakolojik Tedavi. Selçuk Tıp Derg.2011;27 (1):46-51.*
13. *Emir S, Cin Ş. Çocuklarda ağrı: değerlendirme ve yaklaşım. Ankara Üniversitesi Tıp Fakültesi Dergisi.2004;57(3):153-60.*
14. *Çelik N, Khorshid L. Kas içi enjeksiyona bağlı ağrıyı azaltma. Ege Üniversitesi, Hemşirelik Fakültesi Dergisi.2012;28(3):117-28.*
15. *Hogan ME, Janet P, Karen W, Pillai RR, Joel K, Taddio A. A Randomized-Controlled Trial of Parent-Led Tactile Stimulation to Reduce Pain During Infant Immunization Injections. The Clinical Journal of Pain 2014;30(3):259-65.*
16. *Kostandy R, Anderson GC, Good M. Skin-to-skin contact diminishes pain from hepatitis B vaccine injection in healthy full-term neonates. Neonatal Netw, 2013; 32(4):274-80.*
17. *Lisi D, Campbell L, Pillai R, Garfield RH, Greenberg S. Naturalistic parental pain management during immunizations during the first year of life: Observational norms from the OUCH cohort. PAIN, 2013;154:1245–1253.*
18. *Suhrabi Z, Taghinejad H, Valian K, Sayehmiri K, Taheri S. A comparative study on the efficacy of glucose and sucrose on the vaccination pain: a randomized controlled clinical trial. Journal of Clinical and Diagnostic Research. 2014; 8(10):PC01-PC03.*
19. *Küçükoğlu S, Kurt Ş, Aytekin A. The effect of the facilitated tucking position in reducing vaccination-induced pain in newborns. Italian Journal of Pediatrics, 2015;41-61.*
20. *Şahiner NC, İnal S, Sevim Akbay A. The effect of combined stimulation of external cold and vibration during immunization on pain and anxiety levels in children. J perianesthesia Nurs. 2015;30(3):228-235.*

21. *Çiftçi EK, Özdemir FK, Aydın D. Effect of flick application on pain level andduration of crying during infant vaccination. Italian Journal of Pediatrics, 2016; 42:8.*
22. *Hashemi F, Taheri L, Ghodsbin F, Pishv N, Vossoughi M. Comparing the effect of swaddling and breastfeeding and their combined effect on the pain induced by BCG vaccination in infants referring to Motahari Hospital, Jahrom, 2010–2011. Applied Nursing Research, 2016; 29:217–221.*
23. *Çağlar S, Büyükyılmaz F, Coşansu G, Çağlayan S. Effectiveness of shotblocker for ımmunization pain in full-term neonates: a randomized controlled trial. J.Perinat Neonat Nursing, 2017; 31(2):166–171.*
24. *Erkul M, Efe E. Efficacy of breastfeeding on babies' pain during vaccinations. Breastfeed Med, 2017; 12:110-115.*
25. *Fallah R, Naserzadeh N, Ferdosian F, Binesh F. Comparison of effect of kangaroo mother care, breastfeeding and swaddling on Bacillus Calmette-Guerin vaccine injection pain score in healthy preterm neonates by a clinical trial. The Journal of Maternal-Fetal & Neonatal Medicine, 2017; 30(10): 1147–1150.*

FT127

PSYCHOSOCIAL ADAPTATION OF CHILD AND FAMILY TO TYPE 1 DIABETES MELLITUS AND NURSING APPROACH

TİP 1 DİYABETES MELLİTUS OLAN ÇOCUK VE AİLESİNİN HASTALIĞA PSİKOSOSYAL UYUMU VE HEMŞİRELİK YAKLAŞIMI

*Öğr. Gör. Elanur KALECİ, **Prof. Dr. Emine GEÇKİL

*Necmettin Erbakan Üniversitesi, Hemşirelik Fakültesi, Çocuk Sağlığı ve Hastalıkları Hemşireliği AD, Konya/Türkiye,

** Necmettin Erbakan Üniversitesi, Hemşirelik Fakültesi, Çocuk Sağlığı ve Hastalıkları Hemşireliği AD, Konya/Türkiye,

ABSTRACT

INTRODUCTION:

Type 1 Diabetes Mellitus (DM) is a chronic metabolic disease caused by beta-cell destruction due to autoimmune or other causes and resulting from absolute insulin deficiency. Type 1 diabetes is most commonly seen in children and adolescents. Because adaptation to diabetes leads to changes in the life style of the child and family, adaptation to the disease is quite difficult.

Type 1 diabetes mellitus has many psychosocial effects (anxiety, fear, anxiety, mourning, anxiety) on children. In this review, we aimed to investigate the psychosocial adaptation of children and their families with Type 1 diabetes mellitus.

CONCLUSION:

Psychosocial evaluation, counseling and education services of children and their families diagnosed with type 1 diabetes should be provided. Thus, adaptation of the child and family to the disease will be ensured, complications will be prevented and quality of life will be improved.

Key Words: *Type 1 Diabetes Mellitus, Psychosocial adjustment, Nursing Approach.*

ÖZ

GİRİŞ:

Tip 1 Diyabetes Mellitus (DM), otoimmün veya diğer nedenlerle beta hücre harabiyetine bağlı olarak gelişen ve mutlak insülin yetmezliği sonucu ortaya çıkan kronik metabolik bir hastalıktır. Tip 1 diyabet, en sık çocuklarda ve ergenlerde görülmektedir. Diyabete uyum çocuk ve ailenin yaşam biçiminde değişikliklere neden olduğu için hastalığa uyum oldukça zordur.

Tip 1 diyabetes mellitusun çocuk üzerinde birçok psikososyal etkisi (kaygı, korku, endişe, yas, anksiyete gibi) bulunmaktadır. Bu derlemede, Tip 1 diyabetes mellitus olan çocuk ve ailesinin hastalığa psikososyal uyumunun incelenmesi amaçlanmıştır.

SONUÇ:

Tip 1 diyabet tanısı alan çocuk ve ailelerinin psikososyal yönden değerlendirmesi, danışmanlık ve eğitim hizmeti vermesi gerekmektedir. Böylece çocuk ve ailenin hastalığa uyumları sağlanacak, komplikasyonların önüne geçilecek ve yaşam kalitesi artacaktır.

Anahtar Kelimeler*: Tip 1 Diyabetes Mellitus, Psikososyal uyum, Hemşirelik Yaklaşımı.*

INTRODUCTION

Diabetes Mellitus (DM) is a chronic metabolic disease characterized by hyperglycemia, which occurs due to the inability of the body to produce insulin hormone or to use insulin effectively (1,2,3). Type 1 diabetes, which is defined as the clinical picture resulting from absolute insulin failure due to autoimmune or other causes of beta cell destruction, may develop at any age, but is most commonly seen in children and adolescents (1,2,4).

Type 1 diabetes mellitus has many psychosocial effects on children. Pre-school and school-age children may experience negative emotions such as anxiety, fear, anxiety, reluctance and distress in coping with diabetes (5). Adolescents often experience feelings of mourning, anxiety, social isolation and loneliness because of their illness (6). The lack of balance of blood sugar, the combination of several factors such as diet, exercise, and drug use in controlling the disease, and the risk of developing chronic or acute complications lead to psychosocial adjustment problems in individuals with diabetes (7).

Many studies have been conducted in the literature on the adaptation of children with Type I diabetes mellitus (T1DM) to the disease:

Altundağ (2017) showed that there was an increase in the total social support scores of the patients after educational and social support attempts ($p < 0.05$). In addition, it was determined that diabetes knowledge score levels of type 1 diabetes patients increased after training activities ($p < 0.05$) (8). Şahin et al. (2015), the rate of mental illness in adolescents with diabetes was 68%. Adolescents with diabetes had lower quality of life perceptions. Authoritarian attitude was higher in the diabetic group than parental attitudes. In the diabetic group, parents were more likely to avoid methods of coping with anxiety (9). In the study of Arıkan and Antar (2007), 50.9% of children and adolescents had somatization, 47.3% had anxiety, 43.9% had obsession, 33.3% had depression, 37%, 5 patients had multiple psychiatric symptoms including psychosis, 48.2% anger and 28.1% phobia. Somatization score was found to be significantly higher in both early adolescents and late adolescents than in children (10). Bal Yılmaz et al. (2011), in their study, the mean scores of social support of diabetic adolescents; school disruption status, mother's education level and family income level was found to be statistically significant ($p < 0.05$) (11). Ng et al. (2019) showed that the fear and anxiety of parents and children with hypoglycemia decreased significantly after continuous glucose monitoring (12). Jaser et al. (2018) found that a positive psychology intervention in adolescents with T1D initially had significant, positive effects on coping and quality of life. However, it has been concluded that more intensive or longer interventions may be needed to maintain these effects and increase glycemic control and compliance (13). Dempster et al. (2019) found that parenting has a protective role in reducing the risk of depression among young people with Type 1 diabetes (14). Hagger et al. (2016) found that approximately one third of adolescents experienced high diabetes stress and this was related to glycemic control, low self-efficacy and decreased self-care (15). Survonen et al. (2019), the psychosocial self-efficacy level of adolescents with Type 1 diabetes was quite good. The highest scores were to manage the psychosocial aspects of diabetes and set diabetes goals. A positive relationship was found between self-efficacy and understanding and treatment of diabetes, adherence to diabetes, and the patient's communication with the doctor and nurse (16). Fallahi et al. (2019) found that spirutual care had a positive effect on the compliance of adolescents with Type 1 diabetes in the intervention group after the intervention and three weeks later, but the increase in compliance in the control group was not reasonable (17).

RESULT

Inadequate psychosocial adjustment to type 1 diabetes leads to inadequate self-care behaviors, accelerating the development of complications and adversely affecting the mental health and social life of the child and his / her family. Nurse has an important role in education, treatment, follow-up and self-care behaviors of the person with diabetes. Psychosocial evaluation and counseling and

education services of children and their families diagnosed with type 1 diabetes should be provided. Thus, the adaptation of the child and family to the disease will be increased and acute and chronic complications can be prevented and quality of life will be improved.

References

1. *American Diabetes Association (ADA). Microvascular complications and foot care. Diabetes Care. 2016; 39(1): 72-80.*
2. *Aycan Z, Arslanoğlu İ, Bideci A, Bundak R, Darcan Ş, Hatun Ş. Çocukluk Çağı Diyabeti Tanı ve Tedavi Rehberi 2018. Çocuk Endokrinolojisi ve Diyabet Derneği. İstanbul, s. 1-141.*
3. *Yılmaz HB, Taş F, Yavuz B, Erol H. Tip 1 Diyabetli Adolesanlarm Sosyal Destek Düzeylerinin Belirlenmesi. Dirim Tıp Gazetesi. 2011; 1:13-19.*
4. *Craig ME, Jefferies C, Dabelea D, Balde N, Seth A, Donaghue KC. ISPAD Clinical Practice Consensus Guidelines. Definition, epidemiology, diagnosis and classification.Pediatric Diabetes. 2014;15: 4–17.*
5. *Kliegman B. Nelson Essentials Of Pediatrics, 3.Baskı. İstanbul, Nobel Tıp Kitabevleri, 2001: 680-685.*
6. *Bayat M, Çavuşoğlu H. Diyabetin adölesan üzerindeki etkisi. Hacettepe Üniversitesi Hemşirelik Yüksekokulu Dergisi, 2000, 7: 1-12.*
7. *Kaymaz TT Akdemir N. Diyabetli Bireylerde Hastalığa Psikososyal Uyum. Psikiyatri Hemşireliği Dergisi, 2016; 7(2): 61-67.*
8. *Altundağ S. Tip 1 diyabetli çocukların hastalığa uyumunda eğitimin ve sosyal desteğin etkisi. Pamukkale Tıp Dergisi, 2017;11(2): 137-144.*
9. *Şahin N, Öztop DB, Yılmaz S, Altun H. Tip I Diyabetes Mellitus Tanılı Ergenlerde Psikopatoloji Yaşam Kalitesi ve Ebeveyn Tutumlarının Değerlendirilmesi. Arch Neuropsychiatr. 2015; 52: 133-8.*
10. *Arıkan Ş, Antar S. Diyabet Kampına Katılan Ergen ve Çocukluk Çağındaki Tip 1 Diyabetik Hastaların Ruhsal Bulgu ve Belirtilerinin Değerlendirilmesi. Dicle Tıp Dergisi. 2007; 34:294-298.*
11. *Yılmaz HB, Taş F, Yavuz B, Erol H. Tip 1 Diyabetli Adolesanlarm Sosyal Destek Düzeylerinin Belirlenmesi. Dirim Tıp Gazetesi. 2011; 1:13-19.*
12. *Ng SM, Moore HS, Clemente MF, Pintus D, Soni A. Continuous Glucose Monitoring in Children with Type 1 Diabetes Improves Well-Being, Alleviates Worry and Fear of Hypoglycemia. Diabetes technology & therapeutics. 2019; 21(3): 133-137.*
13. *Jaser SS, Whittemore R, Choi L, Nwosu S, Russell WE. Randomized Trial of a Positive Psychology Intervention for Adolescents With Type 1 Diabetes. Journal of pediatric psychology.2019; 44(5): 620-629.*
14. *Dempster KW, Liu A,Nansel TR. Depression and parenting in youth with type 1 diabetes: Are general and diabetes-specific parenting behaviors associated with depressive symptoms over a 2-year period?. Journal of behavioral medicine. 2019; 1-9.*
15. *Hagger V, Hendrieckx C, Sturt J, Skinner TC, Speight J. Diabetes distress among adolescents with type 1 diabetes: a systematic review. Current diabetes reports. 2016; 16(1): 9.*
16. *Survonen A, Salanterä S, Näntö-Salonen K, Sigurdardottir AK, Suhonen R. The psychosocial self-efficacy in adolescents with type 1 diabetes. Nursing open.2019; 6(2): 514-525.*
17. *Fallahi S, Farahani AS, Rasouli M, Sefidkar R, Khanali L. The Effect of Spiritual Care on Adjustment of Adolescents with Type 1 Diabetes. International Journal of Pediatrics.2019; 7(4): 9225-9235.*

FT128

Evaluation of Students' Communication Skills in Clinical Practice of Pediatric Nursing Course

Öğrencilerin Çocuk Sağlığı Ve Hastalıkları Hemşireliği Dersinin Klinik Uygulamasında İletişim Becerilerinin Değerlendirilmesi

*Prof. Dr. Emine GEÇKİL, ***Araş. Gör. Muradiye ALDEM, **Öğr. Gör. Elanur KALECİ,

*Necmettin Erbakan Üniversitesi, Hemşirelik Fakültesi, Çocuk Sağlığı ve Hastalıkları Hemşireliği AD, Konya/Türkiye

**Necmettin Erbakan Üniversitesi, Hemşirelik Fakültesi, Çocuk Sağlığı ve Hastalıkları Hemşireliği AD, Konya/Türkiye,

***Necmettin Erbakan Üniversitesi, Hemşirelik Fakültesi, Çocuk Sağlığı ve Hastalıkları Hemşireliği AD, Konya/Türkiye,

ABSTRACT

Objective:
This study was planned to evaluate the communication skills of third grade nursing students in the clinical practice of Pediatric Nursing Course.

Method:
The research was conducted in descriptive type with the students who took Pediatric Nursing Course (n = 113) in 2018-2019 academic year. Data were collected with the "Communication Skills" evaluation form in the clinical practice teaching guide. Data were analyzed by percentage, average and standardization.

Results:
It was determined that 79.1% of the students were female and 56.5% were 19-20 years old. Most of the students defined communication with children as aggressive, stressed, agitated, crying and not wanting to communicate as a problem. The students aim to solve the problems they define with a strategy of self-improvement in communication.

Conclusion:
In clinical practice, students have difficulty in communicating with a nervous, agitated child or parent. It is recommended that the students be given seminars and trainings on communication and planning simulation based trainings on this subject.

Keywords: *Communication, Nursing Student, Clinical Practice*

ÖZ

Amaç:
Bu çalışma hemşirelik üçüncü sınıf öğrencilerinin Çocuk Sağlığı ve Hastalıkları Hemşireliği Dersi'nin klinik uygulamasında iletişim becerilerinin değerlendirilmesi amacıyla planlandı.

Yöntem:
Araştırma 2018-2019 öğretim yılı Çocuk Sağlığı ve Hastalıkları Hemşireliği Dersini alan(n=113) öğrenciler ile tanımlayıcı tipte yapıldı. Veriler klinik uygulama öğretim rehberi içinde yer alan "İletişim Becerileri" değerlendirme formu ile toplandı. Veriler yüzde, ortala ve standart yapma ile analiz edildi.

Bulgular:
Öğrencilerin %79.1' inin kadın ve %56.5'inin 19-20 yaşlarında olduğu belirlendi. Öğrencilerin çoğu agresif, stresli, ajite, ağlayan ve iletişim kurmak istemeyen çocukla iletişimi problem olarak tanımlamışlardır. Öğrenciler tanımladıkları problemleri, iletişim konusunda kendilerini geliştirme stratejisi ile çözebilmeyi hedeflemektedir.

Sonuç:
Öğrenciler klinik uygulamada sinirli, gergin, ajite özellikteki çocuk ya da ebeveyn ile iletişim kurmakta zorlanmaktadır. Öğrencilere iletişim konusunda seminer ve eğitimlerin verilmesi ve bu konuda simülasyon temelli eğitimlerin planlanması önerilmektedir.
Anahtar Kelimeler: İletişim Becerisi, Öğrenci Hemşire, Klinik Uygulama

INTRODUCTION

Communication is the transfer of emotions, thoughts or information to others in every conceivable way (1). According to another definition, communication is a multichannel process involving two people to understand each other by sharing their feelings, thoughts and knowledge (2). Communication skills are defined as the correct perception of messages in interpersonal thought and emotion exchange (2,3).

Nursing is a charity profession. (4). The main purpose of helping is to know the individual as a whole in a communication and interaction based on mutual trust, to define the needs of care and to cope more effectively with the problems of the individual and to make them meet their needs (5,6). Improving the quality of care in the nursing profession is primarily possible by initiating positive interpersonal relationships. Studies have shown that nurses to develop effective interpersonal relations and communication skills have positive effects such as increased patient satisfaction, adaptation to disease and treatment, and increased motivation for healing (7,8,9).

Child Health and Disease Nursing Course is a course consisting of theoretical and clinical practice in the third year of undergraduate program in nursing. Learning communication skills in nursing starts in the education process. It is aimed to increase self-confidence and self-esteem of nursing students during both theoretical courses and clinical applications and to develop them personally and professionally (9,10). In this process; It is important that students are supported and guided by the instructors in order to improve their communication skills in clinical practice. (11,12). In addition, it is necessary to use different teaching methods such as simulation to help students to overcome their deficiencies in communication and communication skills and gain experience.

OBJECTIVE

This study was planned to evaluate the communication skills of third grade nursing students in the clinical practice of Pediatric Nursing Course.

MATERIALS AND METHODS

This descriptive study was conducted in 2018-2019 academic year. The sample of the study consisted of 113 students who completed Child Health and Diseases Nursing Course in 2018-2019 academic year and completed the data collection form. The data were collected with the formu Communication Skills "evaluation form within the scope of self-assessment which is included in the

teaching guide used in the clinical practice of the related course. The form contains 9 blank spaces for the purpose of evaluating students' communication skills. For example, “The most when I think about my experiences…. I can communicate with children in particular ”etc. They were also asked to identify the problem they have experienced in the field of communication and to develop solution strategies for this problem. Students' responses were grouped by content analysis. Data were analyzed by percentage, mean and standard deviation.

RESULTS

79.1% of the students are female and 56.5% are 19-20 years old. The mean age of the students was 20.58 ± .79 (Table 1).

Thirty percent of the students performed in pediatric intubation, 27% in pediatric endocrinology-neurology and 26.1% in general pediatric clinics (Table 2).

The responses of the students in the field of communication were evaluated by content analysis. Most of the students are in the best 3-6 age group and they can communicate with open, talkative, curious children. The characteristics of the children they have difficulty in communicating are aggressive, stressed, agitated, crying children and children who do not want to communicate. In communication with parents, students can communicate with parents who are open to communication, curious, talkative, sociable and knowledgeable. The characteristics of the parents that they have difficulty in communicating are agitated, nervous, nervous and anxious, afraid parents. Students were found to have difficulty talking to the parents about the prognosis of the disease. The students stated that they felt comfortable and sufficient while receiving information about communication within the team and asking questions, and that they felt uncomfortable and inadequate in the treatment (drug preparation and administration). As for the communication with the instructor, most of the students said that they felt comfortable during the case discussion and visits and that they did not feel uncomfortable. Most of the students defined communication with children as aggressive, stressed, agitated, crying and not wanting to communicate as a problem. The students aim to solve the problems that they define with a strategy of developing themselves in communication.

DISCUSSION AND CONCLUSION

Students have difficulty communicating with nervous, agitated individuals who can be defined as difficult children or parents in clinical practice. The characteristics of the children and parents that they can easily communicate with are open, talkative, curious, calm people. Students can be given seminars, panels and training on communication with difficult parents and children. Simulation-based training is also recommended.

References

1. *Türk Dil Kurumu, Türk dil kurumu sözlükleri, Türk Dil Kurumu Sözlükleri http://sozluk.gov.tr/ (Erişim Tarihi: 11.11. 2019).*
2. *Cam O, Pektaş İ, Bilge A. Ebe/hemşirelere verilen ruh sağlığı ve hastalıkları eğitiminin ruhsal hastalıklara yaklaşımlarına, iletişim becerilerine ve iş doyumlarına etkilerinin araştırılması. Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi 2007; 10: 7-15.*
3. *Erözkan A. Üniversite Öğrencilerinin İletişim Becerilerini Etkileyen Faktörler. Marmara Üniversitesi Atatürk Eğitim Fakültesi Eğitim Bilimleri Dergisi 2007; 22:135-150.*
4. *Kutlu M, Çolakoğlu N, Özgüvenç ZP. Hasta hekim ilişkisinde empatinin önemi hakkında bir araştırma. Sağlıkta Performans ve Kalite Dergisi 2010; 1: 127-43.*
5. *Şahin ZA, Özdemir FK. Hemşirelerin iletişim ve empati beceri düzeylerinin belirlenmesi. Jaren 2015; 1(1): 1-7.*

6. *Ergin D, Celasin N, Akış Ş, Altan Ö, Bakırlıoğlu Ö, Bozkurt S. Dahili kliniklerde görev yapan hemşirelerin tükenme ve empatik beceri düzeyleri ve bunları etkileyen faktörlerin belirlenmesi. Fırat Sağlık Hizmetleri Dergisi 2009; 4: 49-64.*
7. *Boscart MV. A communication intervention for nursing staff in chronic care. J Advanced Nurs 2009;9: 1823-1832.*
8. *Collins S. Good communication helps to build a therapeutic relationship. Nurs Times 2009; 24: 23-29.*
9. *Tutuk A, Doğan S. Hemşirelik öğrencilerinin iletişim becerisi ve empati düzeylerinin belirlenmesi. Cumhuriyet Üniversitesi Hemşirelik Yüksek Okulu Dergisi 2002; 6: 36-41.*
10. *Söğüt S, Cangöl E, Dinç A. Hemşirelik öğrencilerinin iletişim beceri düzeylerinin belirlenmesi. Researcher: Social Science Studies 2018; 6(2): 272-280.*
11. *Süt HK, Demir NG, Özer B. Klinik Uygulamaya Çıkan Öğrenci Hemşirelerin İletişim Becerileri ve Etkileyen Faktörler. Sağlık Bilimleri ve Meslekleri Dergisi 2015; 2(2): 167-177.*
12. *Aydın MF, Argun MŞ. Bitlis Eren Üniversitesi Sağlık Yüksekokulu Hemşirelik Bölümü Öğrencilerinin Hastane Uygulamalarından Beklentileri Ve Karşılaştıkları Sorunlar. Acıbadem Üniversitesi Sağlık Bilimleri Dergisi 2010; 1(4):209- 213.*

Table 1. Distribution of Students by Gender

Features	n	%
Gender		
Woman	91	79.1
Male	24	20.9
Age (mean = 20.58 ± .79)		
19-20	65	56.5
21-23	50	44.5
Total	**115**	**100.0**

Table 2. Distribution of Rotation Places of Students' Clinical Practice of Child Health and Disease Nursing

Clinical	n*	%**
Child Oncology-Hematology	15	13.04
Pediatric Endocrinology-Neurology	31	27.0
General Pediatrics	30	26.1
Children's Infectious Diseases	35	30.43
Child Intensive Care	11	9.565
Neonatal Intensive Care	12	10.43
Pediatric Surgery	14	12.17
Child Emergency	18	15.65
Postpartum	17	14.78
Other * **	47	40.87

* Since each student makes two rotations, the total number is more than the number of students.
** Percentages are calculated over the total number of students (N = 115).
*** Pulmonary Function Test, Allergy Polyclinic, Healthy Child Nursery, Disabled Child Rehabilitation Center

FT129

Çocuk Yoğun Bakım Ünitemizde Trakeostomi Deneyimlerimiz;

Ayşenur Doğru , Resul Yılmaz

Selçuk Üniversitesi Tıp Fakültesi Hastanesi

ÖZET

AMAÇ:

Pediatrik trakeostomi uygulaması ile ilgili deneyimlerimizi pediatri kliniklerinde görev yapan hekimlerle paylaşmak ve literatür ile karşılaştırmak amaçlanmıştır.

YÖNTEMLER:

Selçuk Üniversitesi Tıp fakültesi çocuk yoğun bakım ünitesinde Nisan 2015 ve Eylül 2019 tarihleri arasında cerrahi olarak trakeostomi açılan 33 hastanın verileri geriye dönük olarak hastane elektronik veri tabanından çıkarıldı.

BULGULAR:

33 hastanın 13'ü kız (%39,4) olup yaş ortalaması 46.6±60.3 aydır (3-192 ay).Hastalarda en yaygın trakeostomi endikasyonu uzamış entübasyondur. Solunum yetmezliği (10 hasta (%30,3)), nöromusküler hastalıklar (8 hasta (%24,2)), büyük cerrahi sonrası süreç (4 hasta (%12,1)) ve sepsisilişkili hastalıklar(4 hasta (%12,1))uzamış entübasyona yol açan durumlardır. Üst hava yolu tıkanıklığı sebebiyle 7 hastaya (%21,2) trakeostomi açılmıştır.Trakeostomi öncesi entübasyon süresi ortalama 39,3±26,2 gündür. Trakeostomi açıldıktan sonra en sık komplikasyon olarak enfeksiyon görülmüştür. Hastalarımızın 8'i (%24,2) hastanede yatarken takip edildiği süreçte ex olmuştur.

SONUÇ:

Komplikasyon oranı daha az ve daha yeni bir cerrahi yöntem bulunana kadar uzamış entübasyon için en konforlu yöntem trakeostomi işlemidir.

Anahtar Kelimeler: *pediatrik trakeostomi, endikasyon, komplikasyon,*

GİRİŞ

Trakeostomi, trakeada stoma oluşturulması ve bu oluşturulan stomaya suni bir havayolu yerleştirilmesi işlemine verilen isimdir.[1]Trakeostomi cerrahi ve perkütan olmak üzere iki farklı yolla yapılmaktadır.[2]

Trakeostomi endikasyonları erişkin hastalarda tam olarak belirlenmiş olmasına rağmen pediatrik hastalar ile ilgili konsensus kararı yoktur.[3] 1970'li yıllarda akut üst solunum yolunda tıkanıklığa sebep olan laringotrakeobronşit, epiglotit ve difteri benzeri enfeksiyöz hastalıklar, trakeostomi endikasyonların üçte birini meydana getirir iken H. İnfluenza tip b ve difteri aşısının dünya genelinde yayılması ile enfeksiyon sebebi ile açılan trakeostomilerin sayısında düşüş yaşanmıştır.[4] Son 50 yılda trakeostomi endikasyonları yenidoğan ve çocuk yoğun bakım ünitelerinin yaygın hale gelmesi ve teknolojik gelişmelerde ilerleme kaydedilmesiyle bariz bir değişime uğramıştır. Günümüzde uzamış endotrakeal entübasyon, üst hava yolu anomalileri, nörolojik hastalıklar, kraniofasiyal anomaliler, travma ve vokal kord paralizisi en sık trakeostomi endikasyonlarıdır.[4]

Trakeostomi işlemi solunum yollarının aspirasyonunu kolaylaştırmakta, uzamış entübasyonun komplikasyonlarını azaltmakta, güvenli havayolu sağlanmakta, yoğun bakım kalış süresini düşürmekte, hastaların konforunu artırmaktadır.

Bu çalışmada, çocuk yoğun bakım ünitemizde trakeostomi uygulanan hastaların demografik ve teknik özellikleri retrospektif olarak değerlendirildi.

GEREÇ VE YÖNTEMLER

Bu çalışmaya Selçuk Üniversitesi Çocuk Yoğun Bakım ünitesinde Nisan 2015 ve Eylül 2019 tarihleri arasında cerrahi olarak trakeostomi açılan 33 hasta dahil edilmiştir. Hastaların dosyaları geriye dönük olarak incelenmiştir. Hastalara ait yaş, cinsiyet, trakeostomi açılma endikasyonları, trakeostomi öncesi ventilasyon süreleri, yoğun bakımda kalış süreleri, trakeostomi sonrası gelişen komplikasyonlar, taburculuk durumları ile ilgili bilgiler hasta elektronik veri tabanından çıkarılmıştır. Hastaların tümüne elektif şartlarda ameliyathane ortamında kulak burun boğaz uzmanı tarafından cerrahi tekniklerle trakeostomi açılmıştır.

BULGULAR

Çalışmamızda bulunan 33 hastanın 13'ü kızdır (%39,4). Hastaların yaş ortalaması 46.6±60.3 aydır (3-192 ay). Hastaların yaşlara göre dağılımı; infant (2-24 ay) 21 hasta, okul öncesi (25-84ay) 4 hasta, okul çağı (85-120 ay) 2 hasta, adölesan (121-204 ay) 6 hasta şeklindeydi. Konjenital hastalığa sahip 12'si (%36,4) hasta mevcuttu.

Hastaların 9'u (%27,3) dış merkezden sevk ile gelerek doğrudan çocuk yoğun bakım ünitesine yatırılmıştır. Geri kalan 24'ü (%72,7) ise hastanemiz acil servis veya polikliniklere başvuru sonrası çocuk yoğun bakım ünitesine yatırılmıştır.

TABLO-1 TRAKEOSTOMİ ENDİKASYONLARI

ENDİKASYONLAR	**N (%)**
ÜST SOLUNUM YOLU OBSTRUKSİYONLARI	
Kraniofasial anomaliler	3 (%9,1)
baş-boyun maligniteleri	2 (%6,1)
laryngotrakeal stenoz	1 (%3,0)
vocalcord paralizisi	1 (%3,0)
UZAMIŞ ENTÜBASYON	
nöromusküler hastalıklar	8 (%24,2)
cerrahi postoperasyon takibi	4 (%12,1)
enfeksiyon veya sepsis	4 (%12,1)
solunum yetmezliği	10 (%30,3)

Çalışmamızda trakeostomi açılma endikasyonları Tablo-1 'de gösterilmiştir.

Gastrostomi açılan 24 hastanın(%72.7) 19'una trakeostomi ile aynı ameliyat seansında gastrostomi açılmıştır.

Trakeostomi işlemi sonrası 21 (%63,6) hastada komplikasyon görülmemiştir. Komplikasyonlar arasında en sık görülen 5 (%15,2) hasta ile yara yeri enfeksiyonudur.4 (%12,1) hastada trakeostomi tıkanması, 2 (%6,1) hastada lob atelektazisi, 1 (%3) hastada plevral efüzyon görüldü.

Hastalarımızın hiçbiri izlem sırasında (hastanın yatışı ve taburculuk sonrası) dekanüle edilemedi.

Hastalar trakeostomi açılmadan önce ortalama 43,3±28,6 gün yoğun bakımda yatırılarak 39,3±26,2 gün mekanik ventilatör desteği almışlardır.Toplam yoğun bakımda yatış süreleri ortalama 88,8±61,3 gün olmuştur.

Hastaların 25'i (%75,8) taburcu olurken, 8'i (%24,2) yoğun bakımda tedavi edilirken ex olmuştur. Taburcu olan hastaların hepsi ev tipi mekanik ventilatör ile hastaneden ayrılmıştır.

TARTIŞMA

Uzun entübasyon gereken pediatrik vakalarda halen mümkün olduğu kadar trakeostomi işleminden kaçınılmaya çalışılmış olsa da son 50 yıldır trakeostomi için tek endikasyon uzamış entübasyon olmuştur.[6,15,16] Subglottik stenoz, trakeomalazi, bilateral vokal kord paralizisi, kraniofasial sendromlar, kanserler (örneğin; solunum yolu papillomatozisi veya subglottik hemanjiom) trakeostomiye giden uzun entübasyonun başlıca nedenleridir.[7-8] Süslü ve arkadaşları pediatrik trakeostominin en yaygın nedenleri olarak solunum yetmezliğini(%45.3), nöromusküler hastalıkları (%20.8) ve büyük cerrahi sonrası postoperasyon zamanı(%15.1) olarak belirtmiştir.[9] Doğan ve arkadaşları da en yaygın nedeni solunum yetmezliği (%36) ve nörolojik hastalıklar (%16) olarak bildirmiştir.[17] Enç ve arkadaşları pediatrik kalp cerrahisi kliniğinde operasyon sonrası vakaları bildirdiği için en sık olarak tam cerrahi düzeltme yapılan vakaları sunmuşlardır.[18] Bizim çalışmamızda da trakeostominin en yaygın nedenleri solunum yetmezliği (%30.3), nöromusküler hastalık (%24.2), büyük cerrahi sonrası postoperasyon zamanı(%12.1) olmak üzere literatür ile benzer bulunmuştur.

Trakeostomi açmak için geçen süre yoğun bakımlar arasında 4,3-30,4 gün arasında farklılık göstermektedir.[10]Bizim hastalarımızda 6-163 gün arasında farklılık göstermektedir. Dursun ve arkadaşları çalışmalarında trakeostomiden önce mekanik ventilasyon desteği alınan süreyi 30 gün olarak belirtmişlerdir.[11] Tolunay ve arkadaşları ise 28'i kız olan 53 olguda 29,6±39,12 gün olarak bildirmişlerdir.[19] Bizim çalışmamızda ise trakeostomiden önce mekanik ventilasyon desteği alınan süre ortalama 39,3±26,2 gündür.

Erişkin hastalarda 10 günden kısa sürede açılanı erken trakeostomi, 10 günden daha uzun sürede açılanı geç trakeostomi olarak sınıflandırmışlardır. Pediatrik hasta grubu içinse trakeostominin ne zaman açılması gerektiğine ilişkin net bilgiler bulunmamaktadır.[22] Çalışmamızda 3 hastada erken trakeostomi açılmıştır. Bunlardan 2'si dış merkezden sevk ile alınmış ve dış merkez yoğun bakımda entübe uzun süre kaldığı için yoğun bakım ünitemizde erken trakeostomi açılmıştır. 1 hastada hastanemiz çocuk kalp damar cerrahisi tarafından pulmoner byding operasyonu gerçekleştirilmiş ve operasyon sonrası erken trakeostomi kararı alınmıştır.

McPherson ve arkadaşlarının yaptığı çalışmada 426 hastanın 292'sinin gastrostomi ile taburcu edildiği belirtilmiştir.[12]Trakeostomi açılan hastaların çoğunluğu kronik hastalığa sahip olduğu için bizim çalışmamızda trakeostomi ile aynı anda gastrostomi açılan 19 (%57,6) hasta mevcuttur. Hastaların tek seferde alınan anestezi ile hem trakeostomi hem gastrostomi açılması, tekrarlayan anestezi komplikasyonlarını azaltması açısından avantaj olarak görülmektedir.

Hastalarda trakeostomiye neden olan birincil hastalık ne kadar ciddi ise dekanülasyon ihtimalide o kadar azalır.[13]Yayınlanan bir derlemede trakeostomiye sahip şekilde izlenen nörolojik hastalarda dekanulasyon oranının çok az olduğu bildirilmiştir.[14]Bizim çalışmamızda nörolojik hastalığa sahip vaka oranı yüksek olması nedeniyle hastaların hiçbiri dekanüle edilememiştir.

Carr ve arkadaşları trakeostomi açılması sonrası en sık görülen komplikasyonun enfeksiyon olduğunu bildirmişlerdir.[14] Doğan ve arkadaşları en sık komplikasyon olarak trakeostomi tüp problemlerini saptamıştır. Ardından eş sıklık olarak stomal granulasyon ve enfeksiyon takip eder.[17] Bizim çalışmamızda da en sık komplikasyon trakeostomi bölgesindeki enfeksiyondur. Ardından sıklık olarak; trakeostomi tıkanması, lob atelektazisi ve plevral efüzyon takip eder.

SONUÇ

Sonuç olarak, çalışmamızda literatürle uyumlu şekilde; en sık trakeostomi endikasyonu solunum yetmezliği ve nöromüsküler hastalıklar olarak bulunmuştur. Komplikasyon oranı daha az ve daha yeni bir cerrahi yöntem bulunana kadar uzamış entübasyon için en konforlu yöntem trakeostomi işlemidir.

Kaynaklar

1) *Mitchell RB, Hussey HM, Setzen G, Jacobs IN, Nussenbaum B et al. ClinicalConsensus Statement: TracheostomyCare. OtolaryngologyHeadandNeckSurgery. 2013;148: 6-20.*
2) *Richard S.I, James M.R. Yoğun Bakımda Girişimler ve Teknikler. Nobel Tıp Kitabevi. 3 Baskı. 2005:150-9*
3) *Meirelles RC, Neves-Pinto RM. Historia da traqueotomia. RevSocOrorhinolaryngol. 2005;5(3):4-9*
4) *Carron JD, Derkay CS, Strope GL, Nosonchuk JE, Darrow DH. Pediatrictracheotomies: Changingindicationsandoutcomes. Laryngoscope. 2000;110:1099-104.*
5) *Berry JG, Graham RJ, Roberson DW, Rhein L, Graham DA, Zhou J, et al. Patientcharacteristicsassociatedwith in-hospitalmortality in childrenfollowingtracheotomy. ArchDis Child. 2010;95(9):703–710.*
6) *Kremer B, Botos-Kremer AI, Eckel HE, Schlondorff G. Indications, complications, andsurgicaltechniquesforpediatrictracheostomies-an update. J Pediatr Surg. 2002;37(11):1556-62*
7) *Arcand P, Granger J. Pediatrictracheostomies: changingtrends. J Otolaryngol. 1988; 17(2): 121-125.*
8) *Karapınar B, Aslan MT, Ozcan C. Pediatricbedsidetracheostomy in thepediatricintensivecareunit: sixyearexperience. Turk J Pediatr. 2008; 50(4): 366-372.*
9) *Süslü N, Ermutlu G, Akyol U. Pediatrictracheotomy: comparison of indicationsandcomplicationsbetweenchildrenandadults. Turk J Pediatr. 2012; 54(5): 497-501.*
10) *Martin KW, Evelyn MK, Jane L, Michael C, Matthew CS. Use of tracheostomy in the PICU amongpatientsrequiringprolongedmechanicalventilation. IntensiveCareMed 2014; 40:863–70.*
11) *Oguz D, Deniz O. Earlyandlong-termoutcomeaftertracheostomy in children. Pediatrics International. 2011;53, 202–06.*
12) *McPherson, M.L., et al.,Adecade of pediatrictracheostomies: Indications, outcomes, andlong-termprognosis. Pediatric Pulmonology,2017.52(7):p. 946-953*
13) *OzmenS.,OzmenO.A., UnalO.F. Pediatrictracheotomies: a 37-year experience in 282 children.Int. J. Pediatr. Otorhinolaryngol. 73 (7) (2009) 959-961.*
14) *Carr MM, Poje CP, Kingston L, Kielma D, Heard C. Complications in pediatrictracheostomies. Laryngoscope 2001; 111:1925 – 1928.*
15) *Waddell A, Appleford R, Dunning C, Papsin BC, Bailey CM. The Great Ormond Street protocol for ward decannulation of children with tracheostomy: increasing safety and decreasing cost. Int J Pediatr Otorhinolaryngol 1997;39:111-8.*
16) *Donnelly MJ, Lacey PD, Maguire AJ. A twenty year (1971-1990) review of tracheostomies in a major paediatric hospital.Int J Pediatr Otorhinolaryngol 1996;35:1-9.*
17) *Doğan M , Uysal İ , Yüce S , Güven A , Polat K , Arpacık M , Can F . Pediatrik Trakeostomi: 25 Vakanın Endikasyon ve Komplikasyon Analizi Pediatric Tracheotomy: Indication and Complication Analysis of 25 Cases. Bozok Tıp Dergisi. 2015; 5(2): 0-0.*
18) *Yavuz Enç, Numan Aydemir, Yeşim Biçer, Nurgül Yurtseven,Gökcen Orhan ve ark. Pediatrik ameliyat sonrası kardiyak yoğun bakımda trakeostomi endikasyonları ve sonuçları.Turkish J Thorac Cardiovasc Surg. 2008;16:24-8.*
19) *Tolunay İ, Dinçer Yıldızdaş R, Horoz ÖÖ, Sürmelioğlu Ö, Ekinci F, Petmezci E, Gökay N. Çocuk Yoğun Bakım Ünitemizde Trakeostomi Açılan Hastalarımızın Değerlendirilmesi. J Pediatr Emerg Intensive Care Med 2015;2:61-64.*
20) *Gomes Silva BN, Andriolo RB, Saconato H, Atallah ÁN, Valente O. Early versus late tracheostomy for critically ill patients. Cochrane Database Syst Rev. 2012;Mar 14;1-44.*

Anahtar Kelimeler *: pediatrik trakeostomi, endikasyon, komplikasyon,*

FT130

Determination of Reference Intervals For Dihydrorhodamine 123 (DHR) Assay in Healthy Children

Hülya Uçaryılmaz[1], Ayça Emsen[1], Hasibe Artaç[1]

[1]Department of Pediatric Immunology and Allergy, Selcuk University Medical Faculty, Konya

Özet

Bu çalışmada, sağlıklı çocuklarda dihidrorodamin 123 (DHR) testi için referans aralıkların belirlenmesi amaçlanmıştır.

Selçuk Üniversitesi Tıp Fakültesi, Çocuk Sağlığı ve Hastalıkları Anabilim Dalı'na sağlam çocuk muayenesi için başvuran herhangi bir hastalığı olmayan veya minör travma ile gelen 0-18 yaş arası 100 sağlıklı çocuk ve 18 yaş üstü 10 yetişkin çalışmaya dahil edildi. Hastalar 0-1 ay, 1-3 ay, 4-6 ay, 7-12 ay, 13-24 ay, 25-36 ay, 3-5 yaş, 6-8 yaş, 9-11 yaş, 12-18 yaş ve yetişkin olmak üzere 11 gruba ayrıldı. DHR testi, EDTA'lı periferik kan numunelerinde çalışıldı ve akım sitometride ölçüldü. Sonuçlar belirlenen yaş gruplarına göre ortalama ve %95 güven aralığı olarak analiz edildi.

Sağlıklı kontrollerde stimülasyon indeksi değerinin 21 ile 451 arasında değiştiği (ort±SD; 105.9±77) saptandı. Gruplar arasındaki fark değerlendirildiğinde 1-3 ay arasındaki yaş grubunda, diğer yaş gruplarına göre stimülasyon indeksinin düşük olduğu bulundu ($p<0.05$).

DHR testi, reaktif oksijen radikallerinin özellikle hidrojen peroksitin azalmış seviyelerini indirek tespit eden bir yöntemdir. Bu çalışma ile sağlıklı çocuklarda DHR testi için referans değerler belirlenmiştir.

Anahtar Kelimeler: *Kronik granülomatöz hastalık, dihidrorhodamin testi, referans değerler*

Abstract

This study aimed to determine the reference intervals for dihydrorhodamine 123 (DHR) assay in healthy children.

A total of 100 healthy children, aged between 0 and 18 years and 10 adults, who admitted to Selcuk University Medical Faculty, Department of Pediatrics were included in this study. The DHR assay were evaluated in a total of 11 groups, each group consisting of 10 individuals (0-1 months, 1-3 months, 4-6 months, 7-12 months, 13-24 months, 25-36 months, 3-5 years, 6-8 years, 9-11 years, 12-18 years and adults). DHR assay was performed in peripheral blood samples with EDTA and the cells were immediately evaluated using flow cytometry. The 95% confidence interval was determined according to the mean, minimum, and maximum values obtained from this data.

The stimulation index was observed to vary ranging between 21 and 451 (mean ± SD, 105.9 ± 77). When the difference between the groups was evaluated, it was found that the stimulation index was found to be low in the age group of 1-3 months to compared with the other age groups ($p <0.05$).

The DHR assay is a reliable method to detect the levels of reactive oxygen radicals, especially hydrogen peroxide. The reference intervals of DHR assay in healthy children were determined in this study.

Key Words: *Chronic granulomatous disease, dihydrorhodamine assay, reference value*

Introduction

Chronic granulomatous disease (CGD) is a heterogeneous, hereditary primary immunodeficiency (1). The disease is characterized by a defect in nicotinamide dinucleotide phosphate (NADPH) oxidase complex (2). Patients with CGD have severe and recurrent bacterial and fungal infections, formation of chronic granulomas, and poor wound healing (3). X-linked gp91phox defect was defined in

approximately 70% all case of CGD (2). Studies in our country have been reported to constitute approximately 10% of primary immunodeficiencies (4).
Diagnostic tests in chronic granulomatous disease are based on methods of measurement superoxide production. The nitroblue tetrazolium (NBT) test, which is one of the commonly used methods to determine the neutrophil oxidative burst activity, is diagnosed by microscope, so the evaluation of this test is need to the experienced person (5). Dihydrorhodamine 123 (DHR) assay is a flow cytometry method that is a rapid, sensitive and the most widely used technique (6,7). Dihydrorhodamine settles in mitochondria in phagocyte cells and is reduced to strong fluorescent rhodamine with the effect of oxygen radicals and peroxynitrite after stimulation. Since Rhodamine emits light at 488 nm, it is analyzed according to the change in histogram in a flow cytometer. This method is much more sensitive and reliable than other methods such as NBT. It is also superior to other tests in determining that the mother in the X-CGD carrier status.
There is insufficient data on normal values for this test that used to in few centers in the Turkey. In our country, the first study with the DHR assay is Köker's thesis (8). In this study, they evaluated the DHR assay for the diagnosis of CGD and its subgroups. The DHR assay of patients with CGD and their family members was analyzed and the results were compared with 18 healthy control data. This test has been reported to be a practical method for the diagnosis of CHD and the determination of X-CGD carriers (8).
The second study was conducted in 2015 by Çiçeközü et al. using the DHR assay, and normal values were determined in 210 healthy controls. In that study, in addition to being a diagnostic test, have reported DHR assay can be used to determine the inheritance of this disease and its carriers. However, the distribution of age groups in healthy controls was not classified in that study (9).
Because of the limited number of studies (8,9), in this study aimed to determine reference intervals in healthy children for DHR assay.

Materials and Methods

Study population

100 healthy children between 0-18 years of age without any disease or with minor trauma who admitted to Selcuk University Medical Faculty, Department of Pediatrics for healthy child examination and 10 healthy adults were included in this study. Children with active infection, chronic disease and a history of recurrent infections were excluded from the study.
Healthy children were divided into 10 groups according to their age: 0-1 months newborn, 1-3 months, 4-6 months, 7-12 months, 13-24 months, 25-36 months, 3-5 years, 6-8 years, 9-11 years and 12-18 years.

DHR assay

DHR assay was performed to determine NAPDH oxidase activity of neutrophils. Peripheral blood samples of healthy children were stored in ethylene diamine tetra acetic acid (EDTA) tubes and studied on the same day. Two tubes were prepared as control and patient tubes for each individual. 10 µl of catalase was added to both tubes and then 100 µl of peripheral blood with EDTA was added. Catalase inactivates hydrogen peroxide by converting it into water and oxygen, thereby protecting the host tissue and cells by controlling the amount of reactive oxygen intermediates. 25 µl of PBS was added to the control tube and 25 µl of PMA was added to the patient tube and incubated at 37° C for 15 minutes in the water bath. PMA was used as an activating stimulus for neutrophils. After incubation, DHR was added to both tubes and incubated at 37° C for 5 minutes in the water bath. Then, lysing solution was added to lysis erythrocytes. DHR is located into the mitochondria in phagocyte cells and is reduced to strong fluorescent rhodamine with the effect of oxygen radicals and peroxynitrite after stimulation. Rhodamine emitting light at 488 nm was analyzed by flow cytometry.

Flow cytometric analysis

BD FACS ARIA III flow cytometry and FACS Diva software program version 6.1.3 were used for analysis (BD Biosciences, Pharmingen, San Diego, USA). After the two tube samples were acquired with flow cytometry, neutrophils were gated on dot-blot graphics. Then geometric mean of Rhodamine-123 fluorescence intensity of neutrophils was determined on histograms.

Stimulation index (SI) was calculated by proportioning the geometric mean of the fluorescence intensity obtained from PMA-stimulated samples to the geometric mean of the fluorescence intensity obtained from non-stimulated samples. SI values were used to determine standard reference ranges in healthy subjects.

$$\text{Stimulation index (SI)} = \frac{\text{Geometric mean of fluorescence intensity of stimulated cells}}{\text{Geometric mean of fluorescence intensity of unstimulated cells}}$$

Statistical analysis

Statistical analysis of the data was performed using SPSS 11.0 program. Stimulation index values were examined for 0-1 months, 1-3 months, 4-6 months, 7-12 months, 13-24 months, 25-36 months, 3-5 years, 6-8 years, 9-11 years, 12-18 years and above 18 years-old age groups. Descriptive statistics such as number of children for each age group, geometric mean, arithmetic mean, minimum and maximum values as well as mean ± 2 standard deviation values are given. In addition, 95% confidence interval was established for each age group.

When examining the differences; in comparison of means between two groups, t-test was used in independent groups for data showing normal distribution, and Mann-Whitney U test was used for data without normal distribution. One-way analysis of variance (ANOVA) was used for normal distribution data and Kruskal Wallis test was used for non-normal distribution data. Significance level was accepted as $p<0.05$.

Results

Optimization of blood samples by comparison with patients:

DHR assay was performed in blood samples with EDTA according to the protocol specified in flow cytometry. Stimulation index was calculated. Two patients with chronic granulomatous disease were also studied. Stimulation index was below 10 in these patients. Flow cytometric analysis results of patient and control samples are shown in Figure 1.

Optimization of blood samples by run-time:

Blood samples with EDTA were optimized according to run-time for healthy control DHR assay. Blood samples were waited for 2 and 24 hours and then studied. The results showed a partial decrease in neutrophil functions. Therefore, all samples were studied within the first 6 hours on the day of arrival.

Dihydrorhodamine 123 assay results:

Stimulation index value ranged from 21 to 451 (mean ± SD; 105.9 ± 77) in healthy controls. The arithmetic mean, standard deviation, minimum-maximum values and 95% confidence interval of the stimulation index according to age groups obtained in the dihydrorhodamine assay are shown in table 1.

When the difference between the groups was evaluated, it was found that stimulation index was lower in the age group between 1-3 months compared to all age groups over 6 months ($p <0.05$).

Discussion

In this study, DHR assay, in which oxygen radicals formed after stimulation in neutrophils was detected was demonstrated to change with age, especially in children. These ROSs in PMA-induced

neutrophils in healthy individuals provide a strong fluorescence reduction of DHR to rhodamine and form the basis of the DHR assay performed on flow cytometry. In the phagocyte oxidase defect, oxygen radicals (H2O2) cannot be synthesized and rhodamine does not occur with PMA stimulation. The "stimulation index'' calculated by the ratio of the mean fluorescence intensity obtained from unstimulated and stimulated neutrophils in flow cytometric analysis.

Chronic granulomatous disease was first described in 1957. It is a genetically heterogeneous disease characterized by recurrent, life-threatening bacterial and fungal infections and granuloma formation. Many patients are diagnosed before the age of five. This disease is caused by the inability of phagocytic leukocytes to produce reactive oxygen intermediates (ROIs). The source of these radicals is the superoxide produced by NADPH oxidase, an enzyme complex expressed in phagocytic leukocytes (neutrophils, monocytes, eosinophils and macrophages). This enzyme complex is responsible for the phagocyte respiratory burst (10,11).

Neutrophils constitute the largest portion of leukocytes in childhood and adulthood over four years of age and participate in the early phase of the inflammatory response. An adult person produces more than 100 billion neutrophils per day, and their half-life in the blood is only 6 hours. If circulating neutrophils do not settle at an infection site within this period, they are phagocytized by macrophages in the spleen and liver. In chronic granulomatous patients, both catalase-positive microorganisms and inflammation are present, as neutrophil functions are insufficient. Therefore, early diagnosis of patients is very important to prevent complications that may cause organ damage and death (12).

In Turkey Koker's thesis is the first study conducted in this regard, the SI value of healthy controls was found between 60-107 (mean ± SD. 79.6 ± 15.4). The control group consisted of 18 people, 14 of them were in the childhood and 4 of them were in the adult age group. There are no individuals under 3 years of age in the childhood (8). In our study, DHR assay normal values were evaluated in 110 individuals (100 children and 10 adults) in different age groups. For the first time, the potential of neutrophils to produce oxygen radicals in the 1-3 months age group was found to be insufficient. No difference in stimulation index between other age groups with the neonatal period suggests the presence of neutrophils passed on from the mother.

Another study was conducted in Turkey by Çiçekkökü et al., it was found that the stimulation index was between 20.1-125.2 (mean±SD; 36.8±18.3) in healthy control samples, although lower and upper values were similar to our study, mean and stardard deviation values were lower (our study; 21-451, mean±SD; 105.9±77) (9). Çiçekkökü et al. evaluated the stimulation index in healthy controls regardless of age, whereas healthy controls were divided into age groups in our study.

Köker et al reported that 55% of 89 patients with CGD from 73 Turkish families were autosomal recessive. It was reported that this disease was associated with residual NADPH activity in patients with mild clinical findings that appeared later in life. It has been reported that stimulation index can be increased up to 17 with DHR assay especially in subtype with p47 mutation (13). Therefore, reference values are important especially in the determination of mild clinical presentation in autosomal recessive cases with CGD.

References

1. *Dimitrova G, Bunkall C, Lim D, Kendrick . Comparison of two methods for the diagnosis of chronic granulomatous disease – neutrophil oxidative burst measured by the nitroblue tetrazolium slide test versus the dihydrorhodamine 123 flow cytometric assay. N Z J Med Lab Sci 2013; 67: 45-51.*
2. *Jirapongsananuruk O, Malech HL, Kuhns DB, et al. Diagnostic paradigm for evaluation of male patients with chronic granulomatous disease, based on dihydrorhodamine 123 assay. J Allergy Clin Immunol 2003; 111:374-9.*
3. *Segal BH, Leto TL, Gallin JI, Malech HL, Holland SM. Genetic, biochemical, and clinical features of chronic granulomatous disease. Medicine 2000; 79:170-200.*

4. *Kilic SS, Ozel M, Hafizoglu D, Karaca NE, Aksu G, Kutukculer N. The prevalances (correction) and patient characteristics of primary immunodeficiency diseases in Turkey-two centers study. J Clin Immunol 2013; 33(1):74-83.*
5. *Emmendorffer A, Nakamura M, Rothe G, Spiekermann K, Lohmann-Matthes ML, Roessler J. Evaluation of flow cytometric methods for diagnosis of chronic granulomatous disease variants under routine laboratory conditions. Cytometry 1994; 18:147-55.*
6. *Vowells SJ, Fleisher TA, Sekhsaria S, Alling DW, Maguire TE, Malech HL. Genotype-dependent variability in flow cytometric evaluation of reduced nicotinamide adenine dinucleotide phosphate oxidase function in patients with chronic granulomatous disease. J Pediatr 1996; 128:104-7.*
7. *Koker MY, Sanal O, Leeuwen K, et al. Four different NCF2 mutations in six families from Turkey and overview of NCF2 gene mutations. Eur J Clin Invest 2009; 39(10):942-51.*
8. *Köker MY. Kronik granulomatoz hastalık ve alt gruplarının tanısında DHR 123 testi ve anti-NADPH oksidaz komponent antikorlarla akım sitometrik analizin yeri. 2006. Doktora tezi, Hacettepe Üniversitesi Sağlık Bilimleri Enstitüsü, Ankara.*
9. *Çiçekkökü D, Öğülür Ö, Karakoç-Aydıner E et al. Oxidative Burst with Dihydrorhodamine Test: Reference Values in Healthy Controls. Turk J Immunol 2015; 3(2):49-53.*
10. *Bonilla FA, Bernstein IL, Khan DA et al. Practice parameter for the diagnosis and management of primary immunodeficiency. J Allergy Clin Immunol. 2015; 136:1186-205.*
11. *Bousfiha A, Jeddane L, Picard C et al. The 2017 IUIS Phenotypic Classification for Primary Immunodeficiencies. J Clin Immunol 2018; 38(1):129-43.*
12. *Kulkarni M, Gupta M, Madkaikar M. Phenotypic Prenatal Diagnosis of Chronic Granulomatous Disease: A Useful Tool in The Absence Of Molecular Diagnosis. Scand J Immunol 2017; 86(6):486-490.*
13. *Koker MY, Camcıoglu Y, Leeuwen K, et al. Clinical, functional, and genetic characterization of chronic granulomatous diseases in 89 Turkish patients. J Allergy Clin Immunol 2013; 132:1156-63.*

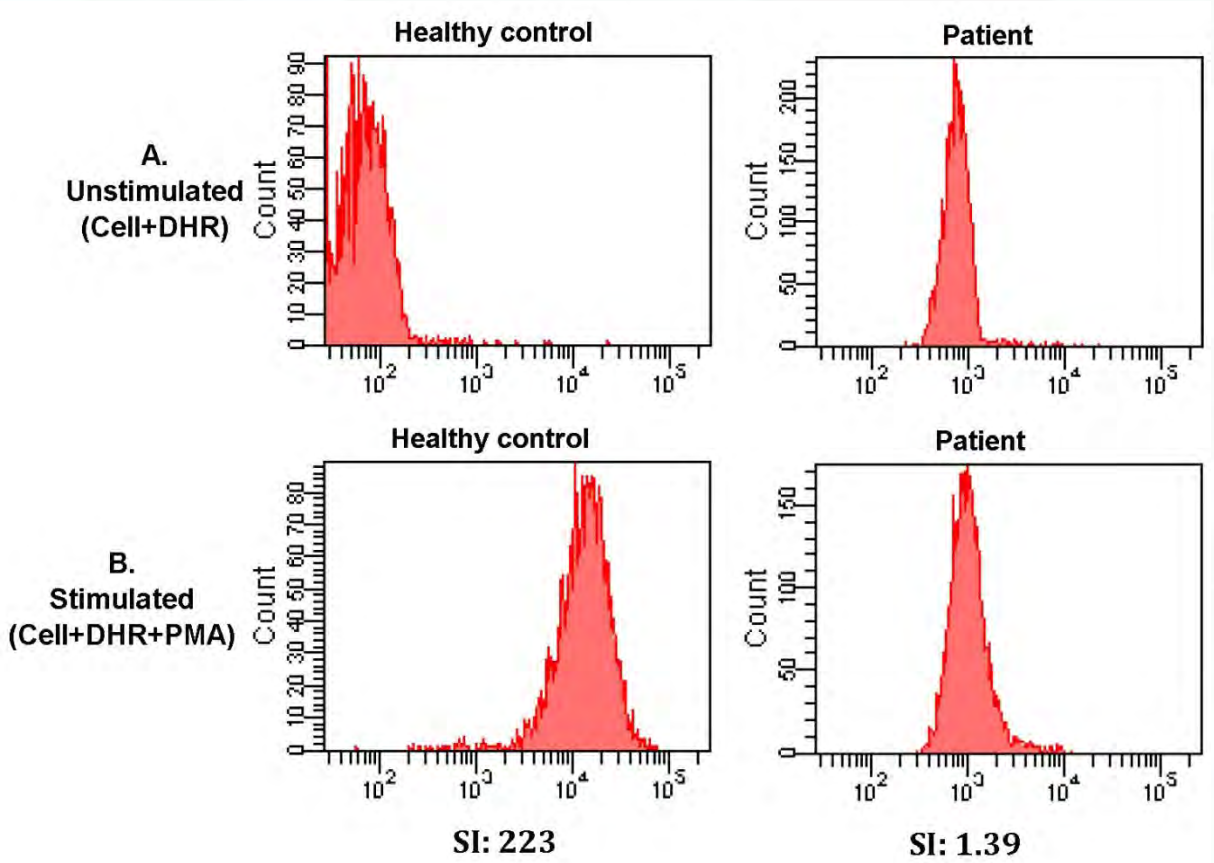


Figure 1: Histogram view and stimulation index observed in DHR test of healthy control and patients

Table 1: Age-related stimulation index in healthy children

Groups	n	mean ± SD	min - max	95% confidence intervals
0-1 months	10	67.2 ± 23.6	36 - 119	[54.08-81.87]
1-3 months	10	51.3 ± 22.9	24.2 – 81.9	[38.15-65.66]
4-6 months	10	76.5 ± 36.4	24.4 - 134	[56.21-97.47]
7-12 months	10	107.2 ± 49.3	41 - 186	[77.89-135.83]
13-24 months	10	138.5 ± 95.1	48 - 356	[88.40-198.81]
25-36 months	10	102.2 ± 43.4	40 - 182	[77.91-129.60]
3-5 years	10	120.5 ± 72.6	50 - 316	[86.32-169.97]
6-8 years	10	98.5 ± 47.2	32.2 - 205	[71.08-130.19]
9-11 years	10	99.5 ± 46.2	40 - 205	[75.02-126.87]
12-18 years	10	174.8 ± 153.4	21 - 451	[86.63-271.66]
Adults	10	129.9±97.7	23 - 366	[81.07-199.45]

FT131

Case Report / Olgu Sunusu

Tethered Cord Syndrome

Tethered Cord Sendromu

Bülent ATAŞ[1], Ahmet Sami GÜVEN[2], Mesut PİŞKİN[3]

[1]Necmettin Erbakan University, Meram Faculty of Medicine, Department of Pediatrics, Department of Pediatric Nephrology, Konya, Turkey

[2]Necmettin Erbakan University, Meram Faculty of Medicine, Department of Pediatrics, Department of Pediatric Neurology, Konya, Turkey

[3]Necmettin Erbakan University Meram Faculty of Medicine, Department of Urology, Konya, Turkey

ÖZET

Tethered Cord sendomu (TCS) omuriliğin gerilmesiyle nöral doku iskemisinin geliştiği ve sonunda ilerleyici nörolojik kayıpların geliştiği bir hastalıktır. TCS'li çocuklar gece ve gündüz idrar kaçırma, sık idrara çıkma ve sık üriner enfeksiyon geçirmektedirler. Belirti ve bulgular doğumdan itibaren bulunabileceği gibi, çoğunlukla zaman içinde ortaya çıkmaktadır. Korkulan durum nörojenik mesaneye (NM) bağlı renal hasar ve kronik böbrek yetmezliğidir (KBY). Bu makalede, küçüklüğünden beri gece-gündüz idrar kaçıran ve sonra böbrek yetmezliği tablosu ile gelen, TCS'ye bağlı KBY gelişen 14 yaşında bir kız hasta sunulmuştur.

Anahtar Kelimeler: *idrar kaçırma, Tethered Cord sendomu, nörojenik mesane, böbrek yetmezliği*

ABSTRACT

Tethered Cord syndrome (TCS) is a disease in which neural tissue ischemia develops as a result of stretching of the spinal cord and eventually progressive neurological loss develops. Children with TCS have urinary day-night incontinence, frequent urination and frequent urinary infection. Signs and symptoms can be present from birth, but often occur over time. The feared condition is renal damage due to neurogenic bladder (NM) and chronic renal failure (CRF). In this article, we present a 14-year-old female patient who developed CRF due to TCS, who had leaked urine during day and night since her childhood and later presented with renal failure.

Keywords: *urinary incontinence, Tethered Cord syndrome, neurogenic bladder, renal failure*

INTRODUCTION

The conus medullaris, which is at the coccyx level in the 25th week of intrauterine life, rises to the 3rd lumbar vertebra at birth and to the lower end of the 1st lumbar vertebra after the age of 2. (1) During this elevation of the conus medullaris, it adheres to the surrounding tissues and remains below the lumbar 1st vertebra. Afterwards, neurological, urological or orthopedic symptoms occur with stretching of the phylum terminale. (2,3,4) Although the clinical findings vary according to age, it is mostly in the form of abnormalities in urine and stool habits, skin abnormalities in the waist region and foot deformities. 5) Because of the development of NM and CRF due to TCS, early diagnosis and treatment is very important. Here, such a girl case with TCS is presented.

CASE

A 14-year-old girl with normal development presented with day-night urinary incontinence since her childhood. She had urge incontinence. The stool habit was normal. A year ago, he had operated on his right foot pes equinovarus. (Figure 1) The patient had a 1 cm-diameter sacral dimple on the left hip. (Figure 2) There was no neurological abnormality. Her urea was 87.5 mg/dl, creatinine 2.8 mg/dl, hemoglobin level was 9.4 g/dl and she had metabolic acidosis. Renal ultrasonography showed bilateral hydroureteronephrosis, thinning of the renal cortex, increased bladder wall thickness and irregularity. There was no vesicoureteral reflux but the bladder was neurogenic (irregular and reduced capacity) (Figure 3). Urodynamic examination revealed low-capacity high-pressure NM. Lumbosacral magnetic resonance imaging revealed TCS (Figure 4) and she was operated for it. The patient was initiated clean intermittent catheterization at regular intervals and anti-cholinergic treatment. She was followed up with diagnosis of CRF. Bladder augmentation surgery was performed by pediatric urology. Renal functions gradually deteriorated during follow-up. Our patient is now 18.5 years old and is in predialysis period. Although her general condition is stable, creatinine level is 4mg/dl and urea level is 114 mg/dl.

DISCUSSION

TCS is usually a childhood disease. But it can also be seen in adults. TCS is a disease characterized by progressive neurological loss caused by stretching of the lumbosacral spinal cord due to congenital or acquired causes and more common in women. The rapid growth in children aggravates the condition. (1,2) Our case was a girl whose complaints started at an early age.

TCS can be accompanied by fibrous bands, diastometamyelia, meningomyelocele, short thick phylum terminale, meningomyelocele and lipomyelomeningocele. Our patient also had diastometamyelia. Motor loss, urological symptoms, spinal deformities such as scoliosis, foot deformities (such as pes equinovarus), trophic ulcers and skin symptoms are more common in childhood TCS. (1,2) Skin findings are seen in 80-100% of children. These symptoms provide important clues for early diagnosis before neurological loss develops. (6) Our patient also had urological symptoms, NM, vertebral anomaly, right pes equinovarus and sacral dimples on the left hip.

It is difficult to evaluate the sphincter dysfunction of the bladder during infantile period. Urodynamic tests should be performed in patients who have day-night urinary incontinence after 4-5 years of age, frequent urination and urinary infection. (7,8,6)

The definitive diagnosis of TCS is made by MRI. The aim of treatment in TCS is to eliminate the pathology leading to stretching of the spinal cord and to prevent damaging of healthy neural structures. Spinal MRI should be performed on patients suspected of TCS. (3,6)

In conclusion, neurological findings in TCS are progressive and diagnosis should not be delayed and surgical treatment should be performed as early as possible. In addition, urinary system functions should be carefully monitored. Even the presence of a small sacral dimple in patients with voiding dysfunction may be a warning sign for primary disease.

References

1. *Tatlı M, Güzel A, Karadağ Ö. Gergin Omirilik Sendromu/The Tethered Cord Syndrome. C.Ü. Tıp Fakültesi Dergisi. 2004;26(3):149-52*
2. *Köksal V, Karmaşak K. Gergin Omirilik Sendromu/Tethered Cord Syndrome. Türkiye Klinikleri J Neurosurg-Special Topics. 2016;6(2):4949-55*
3. *Kına H, Baydın S, Canaz H, Baydın SŞ, Demirci H, Alataş İ. Tethered Cord Sendromu ve Cerrahi Yaklaşım. Sinir Sistemi Cerrahisi Derg. 2014;4(2):78-81*

4. *Akalan N: Gergin omurilik sendromu. In: Omurilik ve omurga cerrahisi. 1. baskı, Zileli M, Özer F (eds). Saray Medikal Yayıncılık, İzmir, 1997;188-275*
5. *Hayward R. Tethered Cord Syndrome. Br J Neurosurgery. 1998;12:75-6*
6. *Mc Lone DG, Marca F. The tethered spinal cord: diagnosis, significance, and management. Pediatr Neurol. 1997;4:192-208*
7. *Akalan N. Gergin omurilik sendromu. Zileli M, Özer F.(eds). Omurilik ve omurga cerrahisi, Cilt 1, 2. baskı, İzmir: Meta basım matbaacılık hizmetleri, 2002:503-14*
8. *Raghavan N, Barkovich AJ, Edwards M, Norman D. MR imaging in the tethered spinal cord syndrome. Am J Roentgenol. 1989;152:843-52*

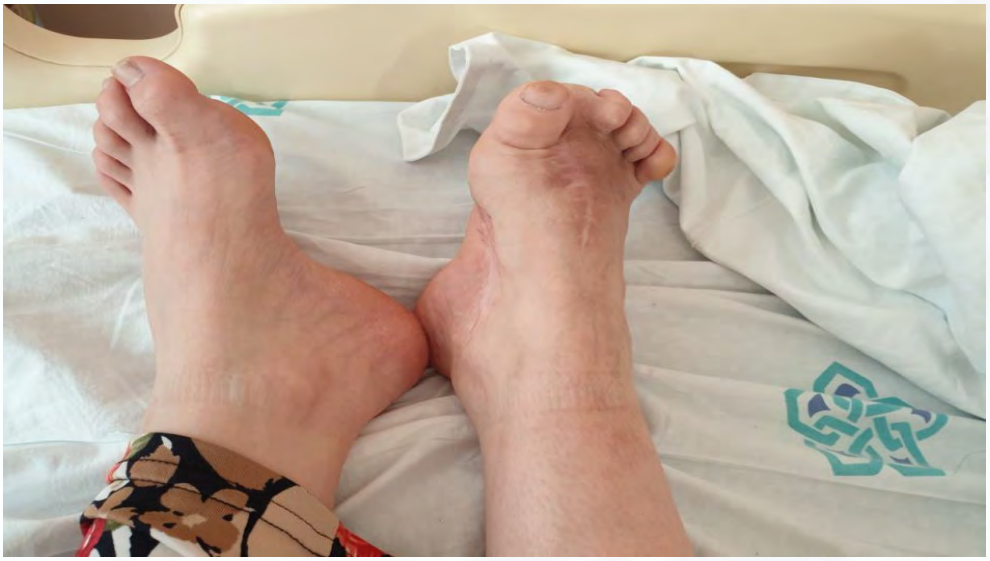


Figure 1- Operated right pes equinovarus

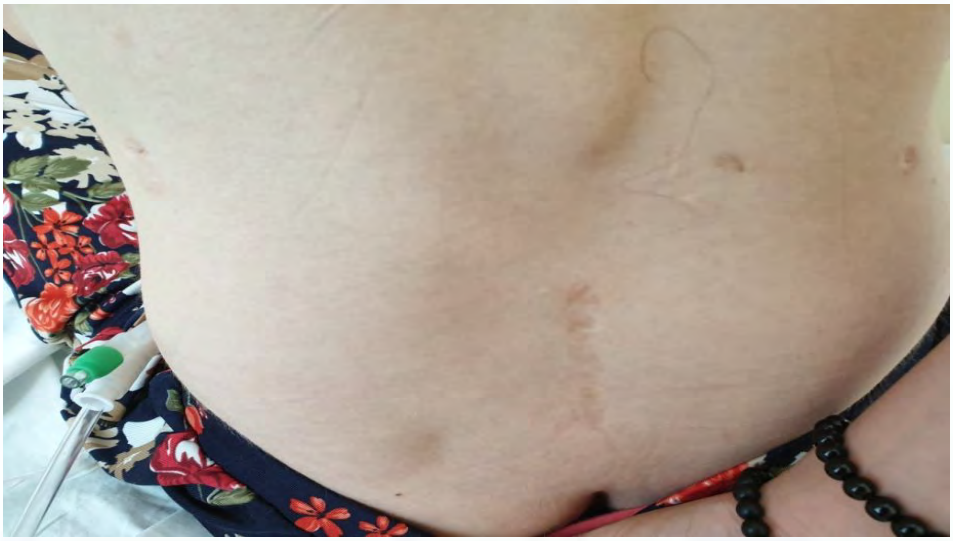


Figure 2 – The TCS operation scar in lumbosacral region and sacral dimple on left hip

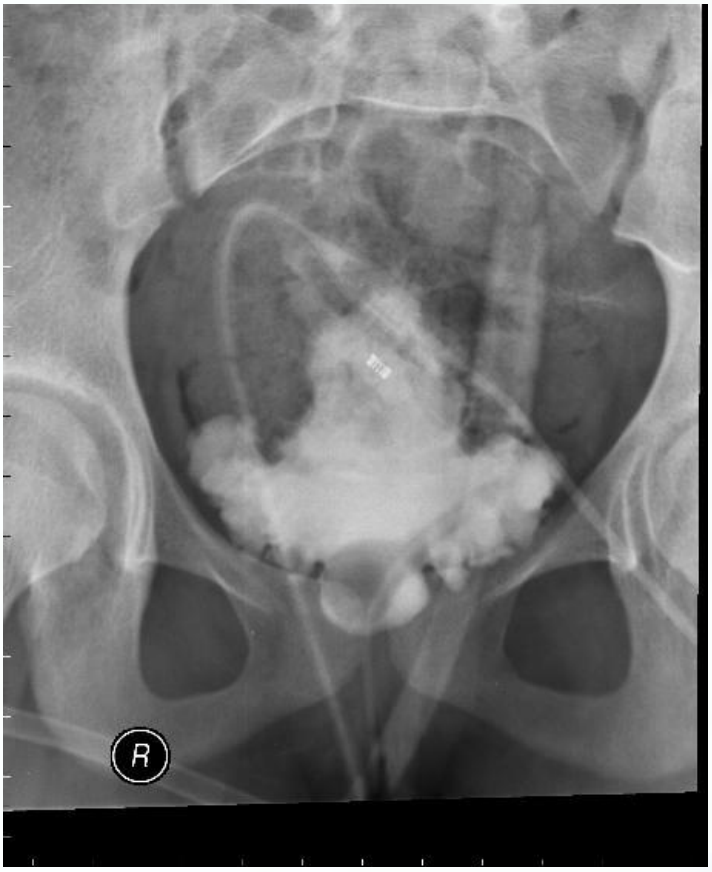


Figure 3 - Irregular neurogenic bladder with reduced capacity

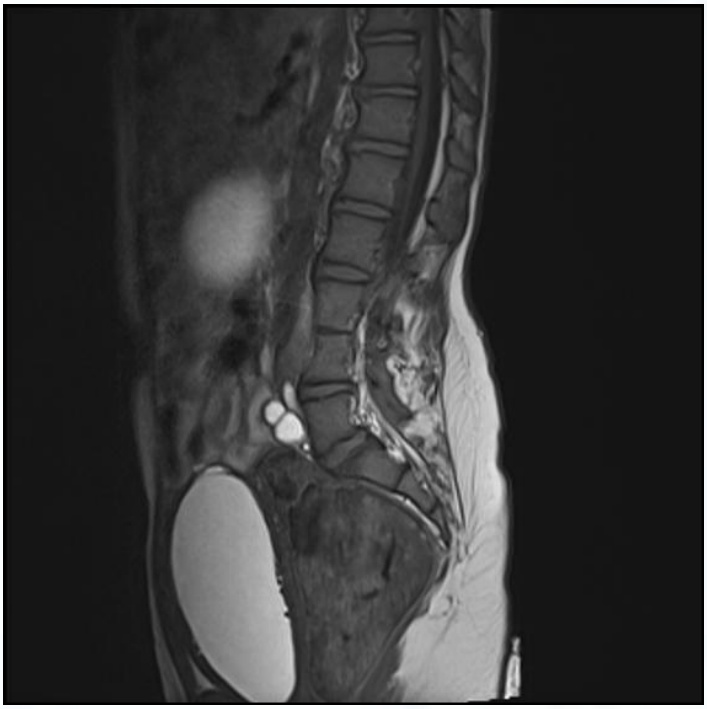


Figure 4 - Tethered cord (Conus medullaris terminated at L4 vertebrae and adherent to the posterior), the arcus fusion defect in L3-4-5 vertebrae and sacral bones, diastometamyelik appearance in the L1-4 vertebrae

FT132

Treatment Of Gastroesophageal Reflux In Children With Lipid-Laden Macrophage

Oğuz Eğil[1], Memduha Sarı[1], Pembe Oltulu[2], Sevgi Pekcan[1]

[1]Necmettin Erbakan Üniversitesi, Meram Tıp Fakültesi, Çocuk Sağlığı ve Hastalıkları A.B.D.

[2]Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi Patoloji A.B.D.

ABSTRACT:

Aim:

In chronic cough, one of the etiologies is microaspirations due to gastroesophageal reflux diseases. "Lipid-laden macrophage" (LLM) the definition of lipid-containing macrophage after staining with Sudan 4 or Oil Red O. It is considered as a sign of gastroesophageal reflux in recurrent pneumonia.

Materials and Methods

In this study, we retrospectively evaluated the children undergoing bronchoscopy between 2016 and 2019 in our center. Patients' medical records have been retrospectively analyzed and their parents were called for further information.

Results:

261 cases underwent bronchoscopy. 72 cases were LLM positive. Of the cases: 68.6% were male (n=35) and 31.4% were female (n=16). The mean age was 5.76±0.5 years and the median age was 5.05 years. The mean and median value of lipid-laden macrophage index (LLMI) was 46.6/400 and 26/400. The lowest and highest value of LLMI were 1/400 and 320/400, respectively. 83.3% of cases suffered cough (n=60). Median duration of cough was 90 days. 19 cases required hospitalization (26.4%). The median length of hospitalization was 9 days. We idealized the medical response into 3 classes as good, moderate, poor. There was a significant relationship between gastroesophageal reflux treatment and medical response ($p<0.001$). Even if they were classified into 4 groups according to anti-reflux and/or inhaler remedies, the correlation continued ($p<0.001$). There was also a significant difference between frequency of admission and anti-reflux treatment ($p<0.001$).

Conclusion:

Based on literature and our data, we recommend prescribing anti-reflux remedy to children with pulmonary and other comorbid diseases and/or if LLMI score is too high.

Key words: *lipid-laden macrophage, gastroesophageal reflux, children*

ÖZET:

Amaç:

Kronik öksürükte etyolojilerden biri gastroözofageal reflü hastalıklarına bağlı mikro aspirasyonlardır. Bronkoskopilerde "lipit yüklü makrofaj" (LYM), Sudan 4 veya Oil Red O ile boyandıktan sonra lipit içeren makrofaj tanımlanmasıdır. Tekrarlayan pnömonilerde gastroözofageal reflünün bronkoalveolar lavaj bulgusu olarak kabul edilir.

Gereç ve Yöntem

Bu çalışmada, merkezimizde 2016 ve 2019 yılları arasında bronkoskopi yapılan çocukları retrospektif olarak değerlendirdik. Hastaların tıbbi kayıtları geriye dönük olarak analiz edildi ve daha fazla bilgi için ebeveynleri telefonla arandı.

Bulgular:
261 olguya bronkoskopi yapılmıştı. 72 olgu LYM pozitif idi. Vakaların% 68,6'sı erkek (n=35), %31,4'ü kız (n=16) idi. Ortalama yaş 5.76±0.5 yıl ve ortanca yaş 5.05 idi. Lipid yüklü makrofaj indeksinin (LLMI) ortalama ve ortanca değeri 46.6/400 ve 26/400 idi. En düşük ve en yüksek LLMI değeri sırasıyla 1/400 ve 320/400 idi. Vakaların %83,3'ünde öksürük vardı (n=60). Medyan öksürük süresi 90 gündü. 19 vakada hastaneye yatış gerekti (%26,4). Ortalama hastanede kalış süresi 9 gündü. Tıbbi yanıtı iyi, orta ve zayıf olarak 3 sınıfa ayırdık. Gastroözofageal reflü tedavisi ile medikal cevap arasında anlamlı ilişki vardı ($p<0.001$). Anti-reflü ve/veya inhaler tedavilere göre 4 gruba ayrıldığında da korelasyon devam etmiştir ($p<0.001$). Ayrıca başvuru sıklığı ve anti-reflü tedavisi arasında anlamlı bir fark vardı ($p<0.001$).

Sonuç:
Literatür ve verilerimize dayanarak, pulmoner ve diğer komorbid hastalıkları olan çocuklara ve/veya LLMI skoru çok yüksekse, anti-reflü ilacın kullanılmasını öneriyoruz.
Anahtar kelimeler: lipit yüklü makrofaj, gastroözofageal reflü, çocuk

INTRODUCTION

In chronic cough, one of the etiologies is chronic micro aspirations due to gastroesophageal reflux diseases (GERD). “Lipid-laden macrophage” (LLM) the definition of lipid-containing macrophage after staining with Sudan 4 or Oil Red O. It is considered as a sign of GERD in recurrent pneumonia in the bronchoalveolar lavage (BAL) fluid (*Figure 1*).
In this study, we aimed to examine the frequency of LLM in our center and its relationship with aspiration related lung diseases.

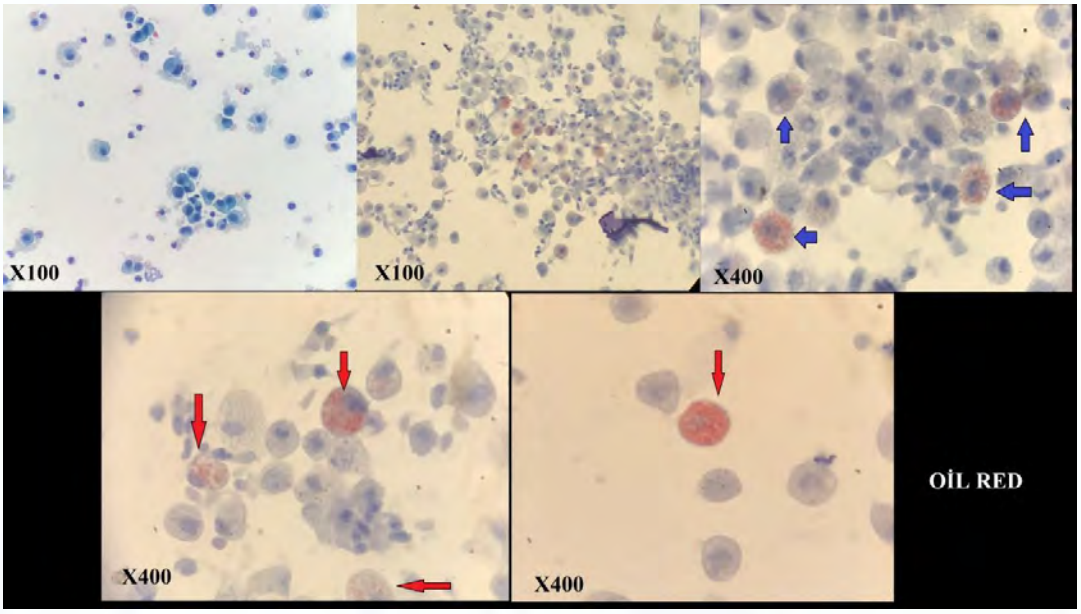


Figure 1: Pathological appearance of Lipid-laden macrophages

MATERIALS AND METHODS

In this study, we retrospectively evaluated the children between 0-18 years who underwent bronchoscopy for any reason and ended up LLM positive between May 2016 and December 2019 in Necmettin Erbakan University Department of Pediatric Chest Diseases and reviewed the epidemiological and clinical characteristics of them. Our inclusion criterias were being in childhood

and positive for LLM. Afterwards, we reversely examined if they have cough and other clinical details.

While this study, patients' BAL pathology reports and medical records have been retrospectively analyzed and their parents were called for further medical information such as if they have cough and how long, used any anti-reflux remedy and their benefit from this treatment. Related data was analyzed in IBM SPSS 22.0 by using Chi-square, Mann Whitney U and Kruskal Wallis tests and P levels lower than 0.05 were accepted as statically significant.

RESULTS

According to the records, a total of 261 cases underwent bronchoscopy for cough between 2016 and 2019. 72 cases were LLM positive. Of the cases: 68.6% were male (n=35) and 31.4% were female (n=16) (male/female ratio: 2.13). The mean age was 5.76±0.5 years and the median age was 5.05 years. Minimum and maximum age was 1 month and 17.8 years. 15.3% were younger than 1 year old (n=11). Other results are shown in *Table 1*.

Age	Frequency (n)	Percentile (%)
Lower than 1 year	11	15.3%
1-4 years (12-59 months)	25	34.7%
5-9 years (60-119 months)	24	33.3%
10-18 years (over 119 months	12	16.7%
Total	72	100%

Table 1: Age variations of the LLM positive children

The median neutrophiles value detected in bronchoalveolar lavage was 25.0% and the median value of lymphocytes was 10.0%. The same value for macrophages was 37.5%. The mean and median value of lipid-laden macrophage index (LLMI) was 46.6/400 and 26/400 (SD=58.4). The lowest and highest value of LLMI were 1/400 and 320/400, respectively. The LLMI of 10 patients was higher than 85. Evaluating with Kruskal Wallis test, there was no correlation between value of neutrophiles and LLMI although there was a rise in neutrophiles. Other details are presented in *Table 2*.

83.3% of cases suffered cough (n=60). Chronic cough is identified as longer than 8 weeks. In this study, 47.2% of the cases had chronic cough (n=34). Mean and median duration of cough was 134.1 and 90 days (SD=123.5). The minimum and maximum duration of cough was 0 and 360 days.

19 cases required hospitalization (26.4%). The mean and median duration of hospitalization was 14.9 and 9 days (SD=20.9). The minimum and maximum duration of hospitalization was 1 and 90 days. One patient needed intensive care support that diagnosed as bronchopulmonary dysplasia due to meconium aspiration, immune deficiency and had tracheostomy. There was no mortality.

36.1% of the patients were receiving reflux treatment. Many patients having cough are thought as asthma and prescribed with inhaler remedies. In order to cease from the bias from simultaneous inhaler treatments, we also examined cases as 4 groups such as taken only anti-reflux remedy, only inhaler remedy, both of them and none. The rates of them were summarized in *Table 3*.

We idealized the medical response (to be more exact, reduce of cough) into 3 classes as good, moderate, poor and finalized according to the cases' parents' answers. There was a statistically significant relationship between receiving gastroesophageal reflux treatment and medical response ($p<0.001$). Even if they were classified into 4 groups according to anti-reflux and/or inhaler remedies which was mentioned sooner, the correlation has continued ($p<0.001$). There was also a significant difference between frequency of admission and anti-reflux treatment ($p<0.001$).

Cell Type	Mean(%)	Median(%)	St. Deviation	Minimum(%)	Maximum(%)
Neutrophiles	31.9	25.0	24.9	0	90
Lymphocytes	10.2	10.0	6.7	0	30
Macrophages	42.8	37.5	22.6	0	88
LLM	6.6	4.0	7.8	0.2	42
LLMI (/400)	46.6	26.0	58.4	1	320

Table 2: Statistical analysis of cell types in BAL

Treatment	Frequency (n)	Percentile (%)
Only anti-reflux remedy	9	12.5%
Only inhaler remedy	21	29.2%
Both of them	17	23.6%
None of them	25	34.7%
Total:	72	100%

Table 3: Patients classified according to the treatment they have taken

DISCUSSION

In the consistent or reproductive cough, one of the etiologies is chronic microaspiration due to GERD. Lipid-laden macrophage is considered as a sign of GERD in recurrent pneumonia in the bronchoalveolar lavage (BAL) fluid. Since 1976, the relationship between GERD and chronic lung diseases such as asthma is suspected (1). In 1985, Corwin et al described LLM as a marker of aspiration in lung diseases (2) and in 1987; Colombo JL et al firstly described lipid-laden macrophage index (LLMI) and idealized the quantification (3).

LLMI did not ensure a definitive diagnosis of GERD but many early studies has shown that it is a very effective way if a patient is going to a bronchoscopy procedure for any reason (4). It doesn't mean that every GERD patient needs bronchoscopy but some GERD cases may be silent and apply with cough rather than typical reflux events or retrosternal symptoms. Many undiagnosed patient with unspecified chronic cough may be performed bronchoscopy, too. Hence, LLMI is recommended to use as an indicator of GERD in many articles (5-7)

In the literature, the mean and median age on the date of bronchoscopy usually ranges among 2-3 years old (4, 8). Differently, in our study it was 5.76 and 5.05 years, respectively. This is probably because of our patient population of having chronic diseases.

Evaluating the literature, most of the previous studies were about diagnosis process of GERD (4-6). Differently, we wanted to focus on the success of the anti-reflux treatment. While 36.1% of our patients were receiving reflux treatment, 63.9% did not. It is also notable that 18.0% of the cases (28.3% of the group without treatment) did not come to follow-ups nor show us the results of their bronchoscopy reports. (n=13).

The value of the LLMI has been approved in adult population with aspiration pneumonia (9). Nonetheless, there is an ongoing discussion whether to prescribe anti-reflux treatment to pediatric patients or not. Some articles suggested that LLMI is not an indicator for GERD (10). At the same time, many claimed the opposite (5-7). It is possible that this is due to gastroesophageal reflux has basically two main mechanisms: esophagobronchial reflex and microaspirations (6). If patient does not have the former one, he/she can't get any better naturally.

There is limited article about linking rate of LLMI and choice of treatment. De Benedictis et al suggested prescribing anti-reflux remedies if symptomatic reflux represents in pediatric asthma patients with positive LLM (7). According to Bauer ML et al, the LLMI cannot prove or disqualify aspiration independently. But high LLMI has a statistical correlation with aspiration. A positive LLMI (LLMI >85) increases the risk that a patient has clinically significant aspiration. A child who has normal growth and neurological development, and a LLMI below 85 is not likely to have

clinically significant aspiration. In that article, it seems to be children with background pulmonary diseases or neurological deficiencies has more likely to have aspirations and reflux (4).
In conclusion, GERD is one of the common causes of recurrent pneumonia and chronic cough. In our study, the low rate of receiving treatment was noteworthy. Nevertheless, according to our findings, in the group with anti-reflux treatment, statistically significant success was observed. (It would be better to remind that our population in this study had many comorbid disorders.) Based on literature and our data, we recommend prescribing anti-reflux remedy to children with pulmonary, cardiac or neurological comorbid diseases and/or if LLMI score is too high. We are in thought of that studies with larger populations on children will contribute to the literature.

Referances

1) *Berquist WE, Rachelefsky GS, Kadden M, Siegel SC, Katz RM, Fonkalsrud EW et al. Gastroesophageal reflux-associated recurrent pneumonia and chronic asthma in children. Pediatrics. 1981 Jul;68(1):29-35.*
2) *Corwin RW, Irwin RS. The lipid-laden alveolar macrophage as a marker of aspiration in parenchymal lung disease. Am Rev Respir Dis. 1985 Sep;132(3):576-81.*
3) *Colombo JL, Hallberg TK. Recurrent aspiration in children: lipid-laden alveolar macrophage quantitation. Pediatr Pulmonol. 1987 Mar-Apr;3(2):86-9.*
4) *Bauer ML, Lyrene RK. Chronic aspiration in children: evaluation of the lipid-laden macrophage index. Pediatr Pulmonol. 1999 Aug;28(2):94-100.*
5) *Knauer-Fischer S, Ratjen F. Lipid-laden macrophages in bronchoalveolar lavage fluid as a marker for pulmonary aspiration. Pediatr Pulmonol. 1999 Jun;27(6):419-22.*
6) *Özdemir P, Erdinç M, Vardar R, et al. The role of microaspiration in the pathogenesis of gastroesophageal reflux-related chronic cough. J Neurogastroenterol Motil. 2017;23:41–48.*
7) *de Benedictis FM, Bush A. Respiratory manifestations of gastro-oesophageal reflux in children. Arch Dis Child. 2018 Mar;103(3):292-296. doi: 10.1136/archdischild-2017-312890. Epub 2017 Sep 7.*
8) *Villamil M, Casas C, Restrepo SM, Caceres J, Ramirez O, Ovalle NV. Experience of Lipid Laden Macrophage Index in Bronchoalveolar Lavage in Children at a Fourth Level Children's Hospital. Am J Respir Crit Care Med 2019;199:A1885.*
9) *Adams R, Ruffin R, Campbell D. The value of the lipid-laden macrophage index in the assessment of aspiration pneumonia. Aust N Z J Med 1997;27:550-553*
10) *Rosen R, Fritz J, Nurko A, Simon D, Nurko S. Lipid-laden macrophage index is not an indicator of gastroesophageal reflux-related respiratory disease in children. Pediatrics. 2008 Apr;121(4):e879-84. doi: 10.1542/peds.2007-0723. Epub 2008 Mar 24.*

3. J Project congress Dedeman Hotel, 4-7 December 2019, Konya, Turkey

Chronic granulomatous disease and diagnostic algorithm

Prof Dr. Mustafa Yavuz Köker

Erciyes University, Medical School "Department of Immunology Kayseri, Turkey

Özet

Kronik granülomatoz hastalık (KGH) görülme sıklığı 1/100-200 bin doğum olan, nötrofil fonksiyonun bozukluğu ile karakterize bir nadir primer immün yetmezlik hastalığıdır. En sık görülen fenotip X-bağlı formdur ve NADPH oksidaz kompleksinin en büyük bileşeni olan gp91-phox ünitesi eksiktir. KGH ın diğer dört formu otozomal resesif (OR) karakterli olup (p22-phox, p47-phox p67-phox, ve p40-phox) birisinin eksikliği sonucu oluşur. X-KGH dünyada KGH hastalarının %65'ini oluştururken, ülkemiz ve bölgemizde bu oran %40 düzeyindedir. Diğer taraftan akraba-arası evlilikler kaynaklı doğumların fazla olması nedeniyle OR-KGH yakın coğrafyamızda daha sık (%50-60) ortaya çıkmaktadır.

Introduction

Chronic granulomatous disease (CGD) a primary immunodeficiency and characterized with inability to killing microorganisms by the neutrophils and phagocytes. It is rare neutrophil function disorder. Although the incidence is at 1 / 100-200.000 births, it may vary in different country. One of the component of nicotinamide adenine dinucleotide phosphate (NADPH) oxidase complex is defective in this disorder. Most of the mutation is observed in *CYBB* gene, which encodes gp91-phox, and result in X-linked CGD. The other four forms of autosomal recessive (AR) is characterized by defect in *CYBA, NCF1, NCF2, NCF4* genes encoded proteins (p22-phox , p47-phox, p67-phox and p40-phox). While X-CGD cases 65% of patients in western country, this rate is around 40% in our country and region. On the other hand, AR-CGD occurs more frequently (60%) in our nearby geography due to the high births between consanguineous marriages (1).

In the basic pathology of CGD, oxidase complex cannot occur and superoxide anion ($-O_2$) cannot be formed enough. In this case, the pH level in the phagosome cannot decrease to the level that will enable the activation of lytic enzymes (pH 4.5). Also, catalase produced by intracellular microorganisms neutralizes some of the existing oxygen radicals and raises the pH level (pH 6↑). In these cases, the activation of lytic enzymes in the phagosome can not be fully achieved and microorganism destruction cannot take place. Infections characterized by the inability to kill Staf aureus, Burkholderia cepacia, Serratia marcescens, Nokardia and some fungi (Aspergillus), especially catalase-positive microorganisms, are observed. The system's inability to cope with especially inoculation and exposure situations creates clinical presentations accompanied by deep tissue infections.

Clinical presentation: Recurrent bacterial and fungal infections that involve the lungs, lymph nodes, liver and other visceral organs. Granuloma formation may occur in the tissues of the infection area, depending on the prolongation of infections in KGH. Hypergammaglobulinemia (IgG ↑), hepato-splenomegaly and enteritis are frequently observed. The X-CGD form, which is seen especially in boys, usually appears before the age of 1 and is more severe. Mild phenotypes, especially autosomal recessive form (p47-phox deficiency) may occur at a later age. The patient and healthy neutrophil population, which constitute the carrier character in mothers in X-linked form, are observed. Mild

clinical signs can be observed in approximately 50% of mothers. In some rare cases, CGD symptoms can be observed in women due to x-ch inactivation.

Diagnosis and monitoring

KGH is very important for early diagnosis, prevention of permanent tissue damage and maintenance of comfortable life. The first test used for this purpose is the NBT smear test. With the flow cytometry and DHR test becoming widespread in the last two decades, an increase in the number of cases has been observed. Today, in the CGD diagnostic tests, the laboratory diagnosis of the disease is confirmed with the DHR 123 test at the first stage. In the DHR test, neutrophil stimulation is performed via the protein kinase C (PKC) pathway via phorbol myristat acetate (PMA) (2). Live neutrophils without stimulation are interpreted in favor of CGD. In addition, maternal carriage can be determined in X-KGH by DHR test, so phenotypic distinction can be made roughly. In the DHR test, the stimulation index (SI) is used to show the amount of neutrophil stimulation and how many times the neutrophil activity increases. While normally an increase of 70-100 times is expected, in some cases, values between SI: 3-10 can be taken depending on the residual activity. These cases are investigated for variant forms or p47-phox deficiency. In addition, the expression of intracellular and surface molecules forming NADPH oxidase is measured by flow cytometry with specific antibodies and subgroup determination is performed. The diagram we use in the diagnosis studies of CGD is attached (figure 1).

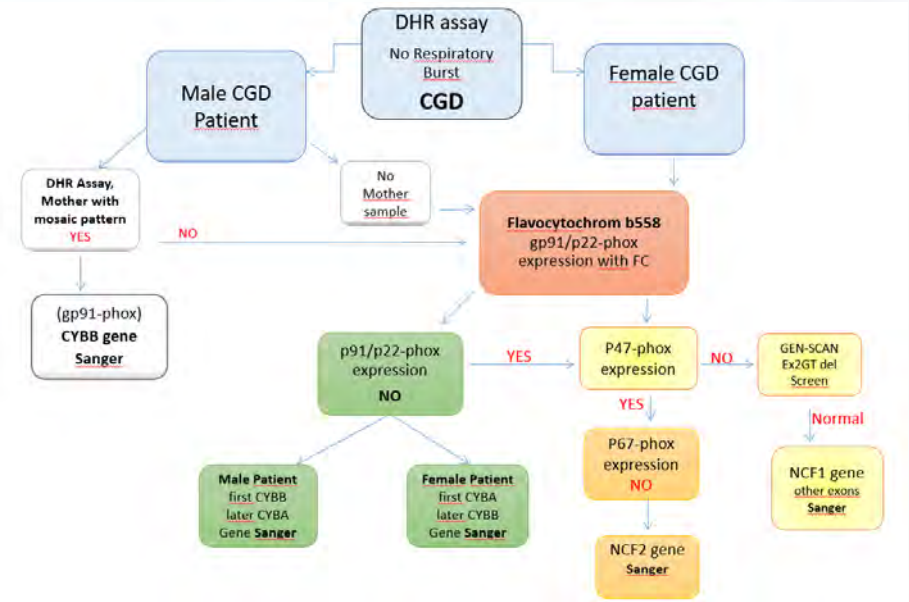


Fig 1. Diagnostic Algorithm Applied in Chronic Granulomatosis Disease

In the second stage of the diagnosis of CGD, genetic diagnosis is achieved by mutation scanning with gene expression and Sanger sequence analysis after DNA extraction from patient samples. In the molecular diagnosis of CGD, scans have been used in recent years with the next generation sequencing (NGS) method instead of Sanger sequence analysis. Gene-scan analysis method is preferred in *NCF1* gene mutation scans, where residual activities are frequently seen, because of the fact that "pseudogene" is found and the detection of "hot spot" mutations in this gene is faster and cheaper (2).

With the developing laboratory infrastructure, it has been understood that there are intermediate forms (p40-phox defect and Eros defect) with low NADPH oxidase activity in recent years. This situation raised new discussions in the diagnosis of CGD and the diagnostic studies have become complicated.

Prophylaxis including antibiotics and antifungal should be applied lifelong after the diagnosis. It can be added to the interferon-gamma treatment protocol during periods of serious infection. Informing the family after genetic diagnosis and providing counseling for new child requests is a preventive approach that will reduce families' having new sick children.
Treatment approaches

KGH clinical follow-up and annual controls are very important. Sufficient doses of regular antibiotics / antifungal prophylaxis applied in the follow-up of KGH can provide long-term survival without infection. Successful results have been achieved in recent years, with the opportunity to access bone marrow transplantation. Especially transplants made from 10/10 compatible donors reach long survival periods.

Other studies on NADPH oxidase
The NADPH oxidase enzyme has a lot to do with many areas of life. It is known that especially due to overwork of the NADPH oxidase enzyme and excessive destruction of exogenous antigens taken into the cell, carcinogenic products that are effective in the development of cancer (lung cancer) can occur, some drugs and chemotherapeutic agents interact with NADPH oxidase enzyme. It is thought that the autotoxic effects of some chemotherapeutic agents are associated with NADPH oxidase, and that antibiotics such as aminoglycosides cause ototoxic hearing loss caused by tissue damage due to NOX3 (NADPH oxidase tissue isomer) over activity in cochlea "hair" cells (4,5). In addition, there is information that the genomic polymorphism existing in the NADPH oxidase enzyme may be a factor on the background of different responses to individual drug treatments and that these effects of the NADPH oxidase enzyme are closely related to aging. Hereby, we anticipate that research on determining the individual NADPH oxidase index will in the future.

Acknowledgement: *This study supported by Erciyes University for BAP project TSA-2019-8322.*

References:

1. *Köker MY, Camcıoğlu Y, van Leeuwen K, Roos D. Clinical, functional, and genetic characterization of chronic granulomatous disease in 89 Turkish patients. J Allergy Clin Immunol, 2013, 132 (5): 1156-1163e5.*
2. *Roos D., de Boer M. Molecular diagnosis of chronic granulomatous disease. Clin. Exp. Immunol. 2014; 175:139–149.*
3. *Kim, Hyung-Jin, et al. "Roles of NADPH oxidases in cisplatin-induced reactive oxygen species generation and ototoxicity." Journal of Neuroscience 30.11 (2010): 3933-3946.*
4. *Bánfi, Botond, et al. "NOX3, a superoxide-generating NADPH oxidase of the inner ear." Journal of Biological Chemistry 279.44 (2004): 46065-46072.*

A Mediastinal Lesion Rarely Seen in Childhood: Pericardial Cyst

Emin Ünal[1], Mehmet Burhan Oflaz[1], Celal Gür[1], Hüseyin Yılmaz[1],

Muhammed Güneş[1], Fatih Şap[1], Tamer Baysal[1]

[1] Necmettin Erbakan University. Department of Child Health and Diseases, Department of Cardiology. Konya, Türkiye.

Özet

Perikardiyal kistler uniloküler, dış duvarı mezotelyal veya endotelyal hücrelerden oluşan düz duvarlı konjenital benign kistlerdir. Tüm mediastinal lezyonlar arasında % 6-7 sıklıktadır. Çoğunlukla kardiyofrenik açıda görülmektedir. Genellikle asemptomatik olmakla birlikte hastaların %20 kadarında non spesifik semptomlar olabilmektedir. Tanıda PA akciğer grafisi, ekokardiografi ve BT en sık kullanılan yöntemlerdir. Difüzyon ağırlıklı MRG de önerilmiştir. Tedavide cerrahi eksizyon ön planda olup düşük morbidite ve mortalite oranları ile uygulanmaktadır. Cerrahi yapılmayan olgularda hemoraji, kistin spontan rüptürü ya da kistin enfekte olması gibi komplikasyonlar görülebilmektedir.

Anahtar kelimeler: *Perikardiyal kist, Çocukluk çağı, Mediastinal lezyon*

Abstract

Pericardial cysts are smooth-walled congenital benign cysts which are unilocular with an external wall comprised of mesothelial or endothelial cells. They account for 6-7% of all mediastinal lesions. They are usually found in the costophrenic angle. Although they are generally asymptomatic, up to 20% of the patients may have nonspecific symptoms. PA chest x-ray, echocardiography and CT are the most commonly used diagnostic methods. Diffusion-weighted MRI has also been suggested. Surgical excision is at the forefront in treatment, being performed with low morbidity and mortality rates. In cases for which a surgery cannot be performed, complications such as hemorrhage, spontaneous rupture of the cyst or infected cyst may develop.

Keywords: *Pericardial cyst, Childhood, Mediastinal Lesion*

Introduction

Pericardial cysts are congenital benign cysts which were defined by His in 1881. They are thought to result from incomplete closure of distal, ventral and parietal recesses of the pericardium (1). They account for 6-7% of all mediastinal lesions and its incidence is approximately 1 in 100,000 (2). These lesions which are usually localized in the costophrenic angle are thin-walled lesions with clear fluid inside whose diameters range from 3 to 30 cm. These cysts which are usually asymptomatic are diagnosed incidentally. However, up to 20% of the cases are symptomatic at the time of diagnosis (3). Surgical excision is at the forefront in treatment of pericardial cysts. It can be performed with low morbidity and mortality rates by using minimally invasive techniques (3, 4, 5). In this manuscript, a case which was diagnosed with pericardial cysts when admitted with a complaint of frequent pulmonary infection and then underwent surgical is reported.

Case Report

A 6 year-old male patient admitted to Pediatric Chest Diseases Outpatient Clinic due to frequent pulmonary infections. On the thorax CT scan (figure 2) taken after increased opacity was detected on PA chest x-ray (figure 1), a fluid-density lesion with dimensions of 4x3 cm was detected in adjacency to anterior part of the heart in the right paracardiac region and it was suggested to perform an USG or MRI in order to determine whether the lesion was of a cystic nature. On thoracic USG, a cystic lesion with dimensions of 36x18 mm was observed in the right supradiaphragmatic region and this appearance was interpreted as a pericardial recess. The contract-enhanced thoracic MRI and pulmonary angiography examinations, a cyst with approximate dimensions of 55x35 mm which

exhibited hypointense signal characteristics on T1 and hyperintense on T2, did not show diffusion restriction and exhibited any septation in the solid component was observed in adjacency to the pericardium and it was primarily interpreted as a pericardial cyst. The patient was consulted to as for cardiac evaluation. At admission, patient's general condition was fine, he was conscious and had stable vital signs. On cardiac examination; the heart sounds were rhythmic, with no additional sound or murmur heard. Femoral pulses were palpated bilaterally equal. No arrhythmia was detected in electrocardiographic examination. On transthoracic echocardiography, a supradiaphragmatic solid cystic structure with dimensions of 52x36 mm which was hypoechoic, avascular and did not exhibit any flow pattern was observed between layers of the pericardium in right posterolateral site of right atrium. No evidence of tamponade or clinically significant compression was detected in the heart. This structure was primarily evaluated to be consistent with a pericardial cyst. The patient referred to department of cardiovascular surgery of our hospital underwent surgical extirpation. The histopathological examination of the cyst was evaluated as benign simple pericardial cyst. In the late-term control visit six months after the operation, all parameters, including transthoracic echocardiography, were determined to be normal.

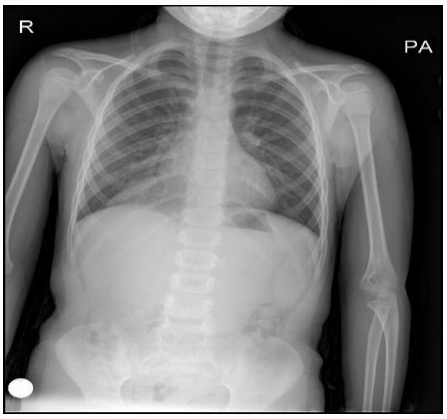


Figure 1. PA Chest x-ray of the patient

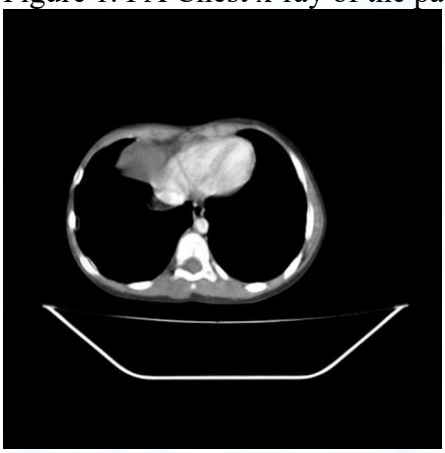


Figure 2. Thoracic CT examination of the patient

Discussion

Pericardial cysts are unilocular, smooth-walled cysts with an external wall comprised of mesothelial or endothelial cells (6). They account for 2.2% of mediastinal tumors and cysts in childhood. Their potential to transform into malignancy is low (3, 6). Pericardial cysts are usually encountered as settled on the diaphramgm in the cardiophrenic angel. Of these cysts; 70% are located in the right cardiophrenic angle, 22% in the left cardiophrenic angle and 8% in various sites of the mediastinum

(3). Although majority of the patients are asymptomatic, up to 20% may develop nonspecific symptoms such as cough, chest pain, dyspnea and palpitations (3, 7).

PA chest x-ray, echocardiography and CT are the most commonly used methods for diagnosis of pericardial cysts. Diffusion-weighted MRI has also been suggested as a noninvasive diagnostic method (7). While they exhibit anattenuation similar to fluid on CT, they exhibit hyperintense appearance on T2-weighted images and hypointense appearance on T1-weighted images on MRI. When the protein content in the fluid within the cyst density on CT may be enhanced, signals in T2-weighted images may be decreased and signals on T1-weighted images may be increased on MRI (8).

Pericardial cysts should be differentiated from solid tumors such as angioma, lipoma, neurogenic tumors, sarcoma, lymphoma, and metastatic and bronchogenic tumors, as well as from granulomatous lesions and abscess. Bronchogenic cysts and foregut cysts also are lesions that should be differentiated from pericardial cyst. Furthermore, diaphragmatic and hiatal hernias and aneurysms of the heart and great veins can also mimic the appearance of a pericardial cyst (9).

Surgical excision is at the forefront in treatment, being performed with low morbidity and mortality rates. Thus, complete excision of the cyst is recommended even in asymptomatic cases (3). In excision of cysts, minimally invasive techniques also are performed. Transtracheal or percutaneous cyst aspirations have been tried as methods alternative to surgery but they have not been widely accepted due to recurrence of cysts and, hence, increased morbidity (5). In cases for which a surgery cannot be performed, some complications due to enlargement of the cyst may develop. These complications include hemorrhage, hemodynamic instability and cardiac tamponade due to spontaneous rupture of the cyst, cardiac herniation and infected cysts (3, 5, 10).

In conclusion, surgical approach can be safely performed with low recurrence, morbidity and mortality for definitive diagnosis and curative treatment of pericardial cysts which are mediastinal lesions rarely seen in pediatric age group.

References

1- *Patterson GA, Cooper JD, Deslauriers J, Lerut AEMR, Luketich JD, Rice TW. Pearson's Thoracic and Esophageal Surgery. 3rd ed. Philadelphia 2008. P.1586-7.*

2- Ökten İ, Güngör A, editörler. Göğüs Cerrahisi, Cilt 2. Ankara: Sim Matbaacılık; 2003.

3- *Yazıcıoğlu A, Bıçakçıoğlu P, Yekeler E, Yazıcı Ü, Karaoğlanoğlu N. perikardiyal kistler: 41 olgunun değerlendirilmesi. Journal of Clinical and Analytical Medicine 2013;4(5): 369-71.*

4- *Ayan E, Balcı AE, Özalp K, Duran M, Vuraloğlu S, Çekirdekçi A. Mediastinal Kit-leler: 27 Olgunu Değerlendirilmesi. Türk Göğüs Kalp Damar Cer Derg 2005; 13(2): 127-130.*

5- *Esme H, Eren S, Sezer M, Solak O. Primary Mediastinal Cysts: Clinical Evaluati-on and Surgical Results of 32 Cases. Tex Heart Inst J 2011; 38(4): 371-4.*

6- *Erdem N, Aktaş A, Göktan C. Perikardial Kist:Nadir bir olgu bildirisi. Celal Bayar Ünivesitesi Sağlık Bilimleri Enstitüsü Dergisi 2015, 2(4):122-124.*

7- *Üçvet A, Gürsoy S, Yoldaş B, Yamansavci E, Ünal M. Perikardiyal kistler: 15 olgunun analizi. Bozok Tıp Dergisi 2014; 4 (1).*

8- *Feigin DS, Fenoglio JJ, McAllister HA, Madewell JE Pericardial cysts. A radiologic-pathologic correlation and review. Radiology 1977;125:15-20.*

9- *Yetkin U, Yazman S, Dönmez K ve Ark. Aynı olguda ön mediyastende sağ ve sol kardiyofrenik açıya yerleşimli iki ayrı dev boyutta perikardiyal kist. MN Kardiyoloji 2014; 21:167-169.*

10- *Yazıcı U, Ege T, Gülhan E, Tastepe İ. A Case of Pericardial Cyst with an Atypical Location (Paratracheal) which was removed by Mediastinoscopy. Tur Toraks Der 2010; 11(4): 184-6.*

FT136

LAD Cases

Nezihe KÖKER

Erciyes University İmmunology Department

Özet:
Lökosit adezyon defekti lökositlerin enfeksiyöz ajanlara cevap vermemesi, iltihap oluşmaması ve bozuk yara iyileşmesiyle karakterize nadir bir immün yetmezliktir. Bu konuşmada 2 LAD1 2 LAD3 hastasını anlatacağız. 4hastanın 3'ü Suriyeli ve akraba evliliği yapan ebeveynlere sahipler. Hastaların persistan enfeksiyon periyotları haricinde persistan lökositozlarıyla ön tanı konmuş ve akım sitometri ile konfirme edilmiştir. LAD3 hastalarında akım sitometride CD11abc Cd18 i mevcut olarak görülmüş ve adhezyon testi ile tanı konulmuştur. LAD 1 için ITGB2; LAD3 FERMT3 tarandı ve mutasyonlar gösterildi.4 hastanın 3 ü kemik iliği yapıldı. 1i vefat etti.

Abstract:
Leucocyte adhesion deficiency disease is a type of immunodeficiency resulted as loss of function to reaction to infectious disease, pus formation, disrupted wound healing. Here we report two LAD1 and two LAD3 with their clinical and functional analysis. 3 of 4 patients are Syrian origin and born into consanguineous families. Their diagnosis are made by flow cytometry and due to high leucocyte count. LAD3 patients have normal CD11abc CD18 levels so they're diagnosed by adhesion assay.Both confirmed with genetical mutations on ITGB2 and FERMT3. 3 of 4 underwent successful HSCT but one is unfortunately passed away.

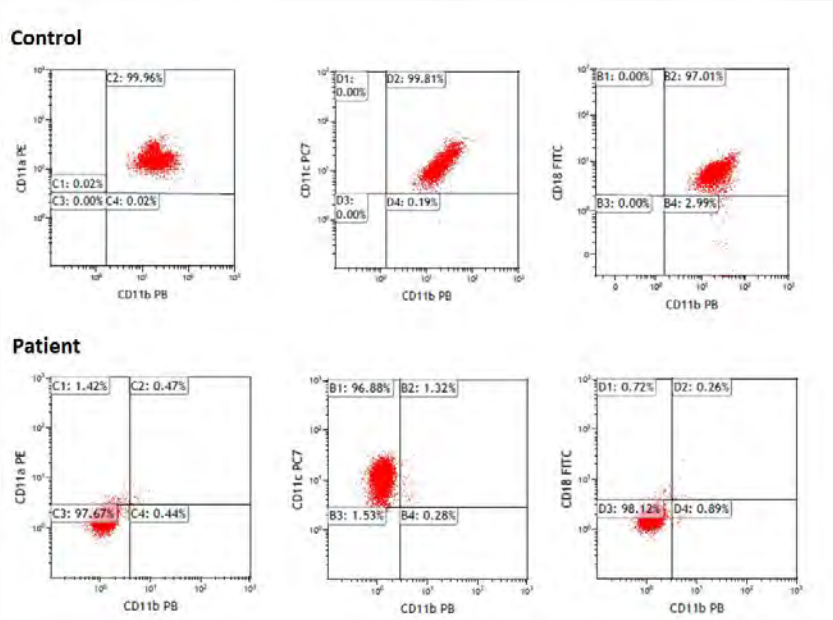
Cases with Leucocyte Adhesion Deficiency

LAD is a rare immundeficiency presented as; lack of adhesion ability of leucocytes to the inflammation sites. As a result; reaction to infectious disease, pus formation, wound healing is disrupted. LAD has three clinical forms called LAD1, LAD2 and LAD3 or 1 variant caused by the mutations in the genes following; ITGB2, SLC35C1, FERMT3 and defect in proteins;β integrins; GDP-fucose transporter; kindlin-3.[1] Patients with LAD mostly suffers from severe life threatening infections at the very early period of life, necrosis in the wound sites and delayed separation of umbilical cord.

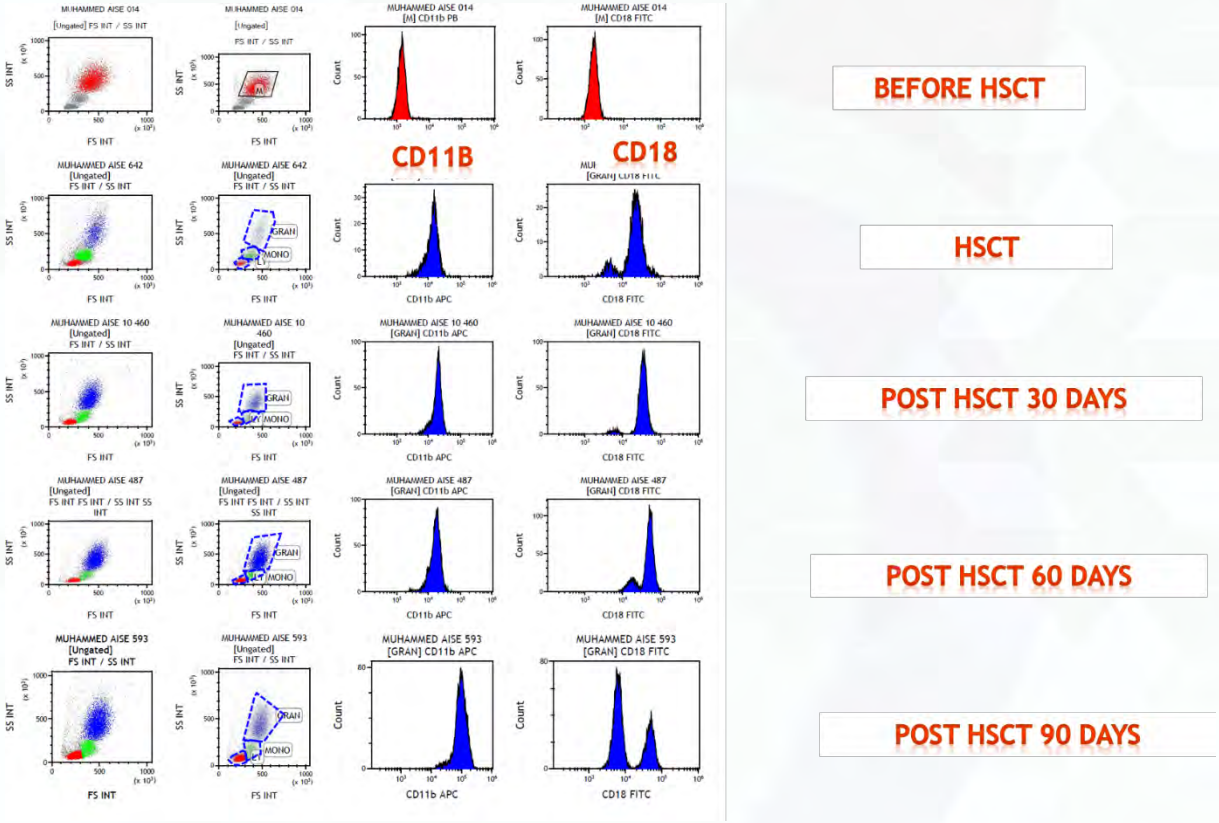
Table 1
Leukocyte adhesion deficiency

	Genetic defect	Clinical presentation	Diagnosis
LAD I	*ITGB2; encodes* CD18 subunit of β_2 integrins, resulting in impaired adhesion, chemotaxis, and neutrophil activation	Skin infection, soft tissue abscesses, delayed separation of umbilical cord and omphalitis, periodontal disease	Flow cytometry for CD11b/CD18 (Mac1)
LAD II	*SLC35C1*; encodes GDP-fucose transporter 1, resulting in impaired expression of fucosylated proteins, including SLeX ligand for selectins	Similar infections to LAD I but not as severe; developmental delay, short stature	Flow cytometry for leukocyteCD15s (SLeX) Bombay (hh) phenotype in red blood cell typing
LAD III	*FERMT3*; encodes kindlin-3, resulting in defective integrin activation and impaired leukocyte and platelet adhesion	Similar to LAD I; also bleeding tendency	Functional assays for neutrophil and platelet adhesion

LAD cases generally suspected by high leucocyte count at first. Then to show absence of CD11abc CD18 CD15 by flowcytometry works for diagnosis of LAD 1 and LAD2.
2 of the our cases are LAD1 which is relatively frequent. Both patients are from Syrian origin and have the same mutation in ITGB2 gene but not known relation between families. Both family has a child loss previously in early age of life. Also marriages are consanguineus.
First M.A. patient had a pneumonia during newborn period but revealed with intravenous antimicrobial therapy. At 7-8 months old repeated severe purulent otitis media and high leucocyte count (40000-10000) brought to the mind LAD. And first step flow cytometric analyse showed absence of CD18, CD11a expression and CD11b apparently CD11c partly. Then patient had laparatomy due to abdominal tenderness surprisingly **abcess formation** is seen and his operation scar healed **without necrosis.** Patient underwent HSCT and surviving now.
Second A.H. had repeated severe pneumonia story newborn to 4months old and at 4 months old he needed ICU care wbc count was 97100 and LAD1 showed by flowcytometric analysis. He survived until 4 years old by prophilaxis. He underwent HSCT from full match mom.
Our other cases are LAD3 which is pretty much rare. Until now approx. *300 patients were submitted. Most of the patients are from Middleeastern countries.* LAD3 patients need eritrocyte or thrombocyte support and as a differential diagnosis by flowcytometry we show presence of CD11abc CD18 CD15.

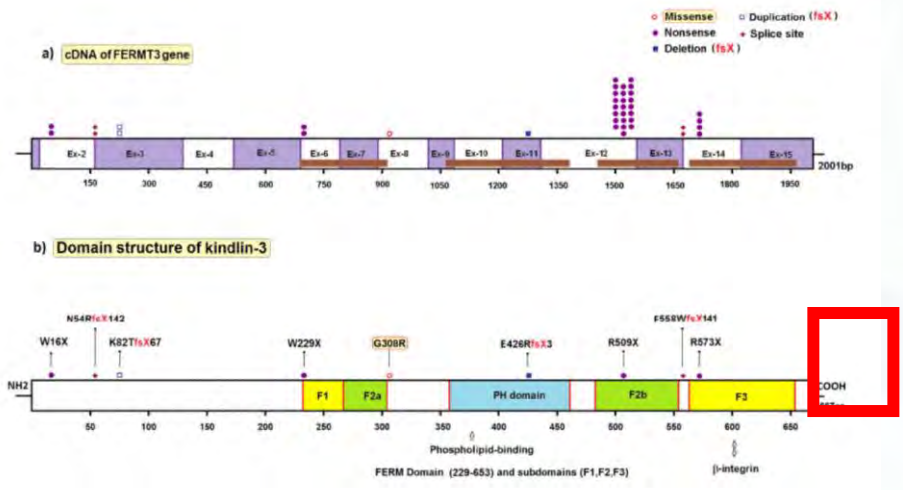


Şekil 3 Patient 1 M.A 's flow cytometric analysis comparing the control, patient lack of CD11ab CD18 but partially present Cd11c



Şekil 4 Patient 1 M.A. follow up after HSCT for chimerism

First LAD3 patient Ö.D. is 6 months old. he had severe pneumonia since newborn period . he was under followup in ICU, leucocyte count was 38800. Patient also received 3 times eritrocyte suspension and 3 times platelet suspension due to gastrointestinal bleeding.
He is suspected as LAD but CD11abc CD18 CD 15 was present with Flow cytometry so for LAD3 as a result of detailed research mutation found in FERMT3 gene and lack of adhesion ability was shown.
The other LAD3 patient A.G. also had a sibling death story. Syrian origin. Consanguineus marriage. Since newborn period patient had infectious problem and high leucocyte count. Patient also needed eritrocyte and platelet transfusions 3-5 times. LAD3 suspicion lead us to sequence FERMT3 gene and a known mutation forTurkish patients c.1525C>T exon 12 p.Arg509X (Kuijpers TW, 2009). We also sequenced patient's another alive brother and he was not a carrier so he underwent HSCTfrom that brother.



Patient 1: Flow cytometric analysis of leucocyte adhesion molecules with specific antibodies CD11b, CD11a, CD11c.

Sources:

1. *Van de Vijver, Edith, et al. "Hematologically important mutations: leukocyte adhesion deficiency (first update)." Blood Cells, Molecules, and Diseases 48.1 (2012): 53-61.*

2. *Hanna, Suhair, and Amos Etzioni. "Leukocyte adhesion deficiencies." Annals of the New York Academy of Sciences 1250.1 (2012): 50-55.*

3. *Bunting, Michaeline, et al. "Leukocyte adhesion deficiency syndromes: adhesion and tethering defects involving β 2 integrins and selectin ligands." Current opinion in hematology 9.1 (2002): 30-35.*

FT137

Hypnosedative and Analgesic Drug Choice for Pediatric Procedural Sedation: a Review of Recent Literature

Funda ARUN

Selcuk University Faculty of Dentistry Department of Pedodontics

Aim

Various hypno-sedative and analgesic drugs are available in the setting of pediatric procedural sedation and analgesia outside the operating room. The aim was to perform a systematic internet based literature review to investigate sedative drug choices and associated clinical outcomes in pediatric population.

Materials and Methods

A search was made in the Pubmed Database with the specific term 'pediatric procedural sedation' to find associated prospective randomized clinical trials. We analyzed the data regarding sedo-analgesic drug choices, dosages, route of administrations, type of procedure, the data regarding physicians' who manage sedation procedures, adverse events, patient demographics and outcome, and publishing characteristics include journal type and country of medical center.

Results

Fifty-nine prospective randomized controlled trial that were published between 1989-2019 was found. Eleven of them were extracted from evaluation due to incompatible characteristics. Midazolam, Propofol, Ketamine, Fentanyl, and Dexmedetomidine were the most common hypno-sedative agents that were used either alone or in various combinations. Most common route of administrations were oral and intravenous routes. There was not any drug dosage information in 4 manuscripts. Distribution and range of patient population age were too large and different particularly from classic pediatric age scale. Among 23 different invasive procedure, orthopedic interventions such as fracture bone reduction and manuplation/repositioning of joint dislocation were the most common. Sedation process were managed by anesthetists in 8 of 48 trial. There were not any information regarding airway management in 28 studies. Nausea, vomiting, apnea, hypoxia and desaturation, and hemodynamic side effects such as bradycardia, hypo/hypertension were the frequently seen adverse events. Most of the studies were published in emergency medicine and pediatric journals. United States of America was the leading country according to the research centers.

Conclusion

Hypno-sedative anesthetic medications have been used for various indications and purposes outside the operating room by different specialists other than anesthesiologists.

Keywords: Procedural sedation, analgesia, anesthesia, children, invasive and non-invasive procedures

Introduction

'Sedation and analgesia' allows patients to endure painful invasive/non-invasive procedures without deterioration in hemodynamic and respiratory functions while maintaining ability to respond to verbal and tactile stimulation (1). Performance of invasive and painful procedures without sedation and/or anesthesia can be not only problematic but also impossible in some cases for clinicians,

patients and their parents. The comfort and convenience that anesthesia brings is increasingly noticeable over the past twenty years.
Procedural sedation and analgesia in children has been gradually implemented outside the operating room in intensive care units, emergency and radiology departments, and medical and dental offices (2-5). According to the variability of the procedure and department, different clinicians who are not specialists in anesthesiology such as intensivists, emergency physicians, pediatricians and nurses have been taken responsibilities in the sedation process. Various different hypno-sedative and analgesic drugs are available in the setting of procedural sedation and analgesia outside the operating room. With the contribution of advanced monitoring technology, many different sedative and analgesic drug options are available to perform procedural sedation and analgesia in children.
In this research the aim was to perform a systematic internet based literature review to investigate sedative drug choices and associated clinical outcomes in pediatric population undergoing invasive and/or non-invasive procedures under sedation.

Materials and Methods
A search was made in the Pubmed Database with the specific term 'pediatric procedural sedation' to find associated prospective randomized clinical trials. The data was analyzed in terms of sedo-analgesic drug choices, dosages, route of administrations, type of procedure, the data regarding physicians' who manage sedation procedures, adverse events, patient demographics and outcome, and publishing characteristics include journal type and country of medical center. Article types other than 'randomized controlled trial' such as case reports, comments, editorials, letters, guidelines, meta-analysis, and observational studies were not evaluated.

Results
Fifty-nine prospective randomized controlled trials published between 1989-2019 were found. Eleven of them were extracted from evaluation due to incompatible characteristics such as testing the effectiveness of a new sedation scale, observation of the effect of listening music during procedure, or determining the effect of adding capnography to standard monitoring, etc and limited data regarding procedural sedation process. Midazolam, Propofol, Ketamine, Fentanyl, and Dexmedetomidine were the most common hypno-sedative agents which were used either alone (in 20 studies) or in various combinations (in 39 studies). Most common route of administrations were oral and intravenous routes and apart from these, intramuscular, intranasal, inhaler, subcutaneous, and transmucosal routes were used. Drug dosage information were given in all studies except 4 studies. Distribution and range of patient population age were too large and different particularly from classic pediatric age scale. Among 23 different invasive procedures, orthopedic interventions such as fracture bone reduction and manipulation/repositioning of joint dislocation in the pediatric emergency departments were the most common. Sedation process were managed by anesthetists in 8 of 48 trial. There was not any information regarding airway management in 28 studies. Nausea, vomiting, apnea, hypoxia and desaturation, and hemodynamic side effects such as bradycardia, hypo/hypertension were the frequently seen adverse events. Most of the studies were published in emergency medicine and pediatric journals. United States of America was the leading country according to the research centers.

Discussion
Levels of sedation/analgesia (minimal/ moderate/ deep) was defined by American Society of Anesthesiologists (ASA) according to the multiple parameters such as responsiveness of patient, requirement of any intervention to the airway, spontaneous ventilation status and maintenance of cardiovascular functions and approved by the ASA House of Delegates in October 13, 1999 (1). Occasionally, predicting precise sedation level before sedative drug applications may be impossible

due to inter-individual variation in the pharmacokinetics. Furthermore, in some cases, level of sedation becomes deeper than initially intended with lower dosages and undesirable complications such as hypotension, desaturation, and agitation can occur. In order to minimize associated risks while providing the advantages of sedation/ analgesia, there are several general principles and recommendations in practical guidelines for non-anesthesiologist clinicians particularly for moderate/ deep sedation.

Appropriate preprocedural patient evaluation and preparation is a well-accepted clinical practice for anesthesiologists. Although there is insufficient data to evaluate the impact of this practice on outcomes in procedural sedation, it is strongly recommended particularly in patients having special medical conditions such as extremes of age, ASA status III or higher, obstructive sleep apnea, respiratory distress syndrome, obesity, history of gastric bypass surgery, and cardiovascular disorders (6-8). ASA physical status classification system and preprocedural evaluation was mentioned in 23 of 59 studies and in all 8 studies conducted by anesthesiologists.

The pediatric population is divided into subcategories (preterm newborns, term newborns, infants, toddlers, children and adolescents) and the dose is selected according to a child's age. It was proven that categorizing dosing regimens by age ranges creates an artificial discontinuity in the dose–exposure relationship across each age group (9). Compared with adults, neonates and infants frequently require reduced hypno-sedative drug doses while children require increased doses in relation to their body weight (10). There was a large variability among 59 studies regarding age ranges and age groups. We found 41 miscellaneous age ranges in 59 studies that differ from classical pediatric age scale and in 8 studies newborn infants were evaluated with children. Furthermore, in 1 study children were evaluated with adults and the age range was varried from 1 month to 28 years (11). We found only 3 studies that the sedative drug dosages were given gradually variable according to age groups (12-14).

Detection of adverse systemic drug reactions with the help of using modern monitoring technology is crucial to avoid the complications associated with moderate/deep sedation and analgesia such as cardiovascular decompensation and cerebral hypoxia. Monitoring level of consciousness, ventilation and oxygenation with capnography and pulse oximetry, hemodynamic parameters such as blood pressure, heart rate, and electrocardiography and recording of these monitoring parameters were strongly recommended (15). We found that the data regarding cardiorespiratory monitoring was not presented in 7 studies and monitoring level of consciousness via BIS (Bispectral index) was reported only in 1 study (16). Unfortunately, we couldn't find any information regarding usage of continuous end-tidal carbon dioxide monitoring which is a useful adjunct in reducing the frequency of hypoxemic events during moderate/deep procedural sedation.

Lack of personnel experienced in airway management or advanced life support, or unfamiliarity with medications being administered for sedation and analgesia was accepted as an absolute contraindication (17). In 13 studies there was lack of information regarding the identity of personnel who conducted the sedation process. In the rest of 52 studies common liable consultants were pediatricians, anesthesiologists, and emergency physicians in 17, 8, and 4 studies, respectively. In most of the studies there was uncertainty regarding the qualification of clinicians who were responsible in sedation process.

Using supplemental oxygen during procedures with sedation was reported to be beneficial in reducing the rate of hypoxemia (18). Although there was satisfying information related to airway management and routine oxygen support in 14 studies, in some studies there was lack of information despite an airway and/or pulmonary complication.

Although recent studies suggest that pediatric procedural sedations performed outside of the operating room are safe and unlikely to yield serious adverse events, hypno-sedative drugs and opioids have broad side effect potential (19,20). Nausea, vomiting, desaturation, and hypotension were the common reported adverse events. Central nervous system adverse effects such as

hallucinations, dizziness, nightmares, agitation and dysmorphic emergence occurred more frequently with ketamine usage. In 9 studies no adverse events and side effects were reported. There wasn't any reported serious and/or life-threatening adverse event in all studies.

Conclusion

Hypno-sedative anesthetic medications have been used for various indications and purposes outside the operating room by different specialists other than anesthesiologists. We believe that published guidelines are important tools to increase effectiveness and quality of procedural sedation while reducing the likelihood of adverse effects.

References

1. *American Society of Anesthesiologists Task Force on Sedation and Analgesia by Non-Anesthesiologists. Practice guidelines for sedation and analgesia by non-anesthesiologists. Anesthesiology 2002;96:1004–1017.*
2. *Bhat JI, Charoo BA, Tramboo ZM, Zahoor S. Proceduralist Given Sedation is Safe and Feasible in Pediatric Flexible Bronchoscopy. J Pediatr Intensive Care. 2019 Dec;8(4):214-217.*
3. *O'Byrne ML, Millenson ME, Steven JM, Gillespie MJ, Dori Y, Glatz AC, Rome JJ. Operator-Directed Procedural Sedation in the Congenital Cardiac Catheterization Laboratory. JACC Cardiovasc Interv. 2019 May 13;12(9):835-843.*
4. *Green SM, Roback MG. Is the Mallampati Score Useful for Emergency Department Airway Management or Procedural Sedation? Ann Emerg Med. 2019 Aug;74(2):251-259.*
5. *Anderson J, Dalabih S, Birisi E, Dalabih A. Is Orally Administered Pentobarbital a Safe and Effective Alternative to Chloral Hydrate for Pediatric Procedural Sedation? J Pediatr Pharmacol Ther. 2018 Nov-Dec;23(6):460-465.*
6. *Bal BS, Crowell MD, Kohli DR, Menendez J, Rashti F, Kumar AS, Olden KW. What factors are associated with the difficult to sedate endoscopy patient? Dig Dis Sci 2012; 57:2527–34.*
7. *Heuss LT, Schnieper P, Drewe J, Pflimlin E, Beglinger C. Safety of propofol for conscious sedation during endoscopic procedures in high-risk patients: A prospective, controlled study. Am J Gastroenterol 2003; 98:1751–7.*
8. *Kotani J, Shimada M: A prospective, multicenter, observational study for the dosage and administration of Dormicum (generic name: midazolam) for the intravenous sedation in dental clinical settings. J Japanese Dental Soc Anesthes 2013; 41:160–170*
9. *Johnson TN, Rostami-Hodjegan A, Tucker GT. Prediction of the clearance of eleven drugs and associated variability in neonates, infants and children. Clin Pharmacokinet 2006; 45:931–56.*
10. *Ginsberg G, Hattis D, Sonawane B, et al. Evaluation of child/adult pharmacokinetic differences from a database derived from the theraputic drug literature. Toxicol sci 2002; 66: 185-200.*
11. *Vardi A, Salem Y, Padeh S, Paret G, Barzilay Z. Is propofol safe for procedural sedation in children? A prospective evaluation of propofol versus ketamine in pediatric critical care. Crit Care Med. 2002 Jun;30(6):1231-6.*
12. *Kannikeswaran N, Lieh-Lai M, Malian M, Wang B, Farooqi A, Roback MG. Optimal dosing of intravenous ketamine for procedural sedation in children in the ED-a randomized controlled trial. Am J Emerg Med. 2016 Aug;34(8):1347-53.*
13. *Tsze DS, Steele DW, Machan JT, Akhlaghi F, Linakis JG. Intranasal ketamine for procedural sedation in pediatric laceration repair: a preliminary report. Pediatr Emerg Care. 2012 Aug;28(8):767-70.*
14. *Batra YK, Rakesh SV, Panda NB, Lokesh VC, Subramanyam R. Intrathecal clonidine decreases propofol sedation requirements during spinal anesthesia in infants. Paediatr Anaesth. 2010 Jul;20(7):625-32.*
15. *Practice Guidelines for Moderate Procedural Sedation and Analgesia 2018: A Report by the American Society of Anesthesiologists Task Force on Moderate Procedural Sedation and Analgesia, the American Association of Oral and Maxillofacial Surgeons, American College of Radiology, American Dental Association, American Society of Dentist Anesthesiologists, and Society of Interventional Radiology. Anesthesiology. 2018 Mar;128(3):437-479.*

16. *Tschiedel E, Heck V, Felderhoff-Mueser U, Dohna-Schwake C. The influence of parents' voice on the consumption of propofol for pediatric procedural sedation-a randomized controlled trial. Paediatr Anaesth. 2017 Apr;27(4):394-398.*
17. *Innes G, Murphy M, Nijssen-Jordan C, Ducharme J, Drummond A. Procedural sedation and analgesia in the emergency department. Canadian Consensus Guidelines. J Emerg Med. 1999 Jan-Feb;17(1):145-56.*
18. *Deitch K, Chudnofsky CR, Dominici P. The utility of supplemental oxygen during emergency department procedural sedation and analgesia with midazolam and fentanyl: A randomized, controlled trial. Ann Emerg Med 2007;49:1–8.*
19. *Cravero JP, Blike GT. Pediatric anesthesia in the nonoperating room setting. Curr Opin Anaesthesiol. 2006 Aug;19(4):443-9.*
20. *Cravero JP, Blike GT, Beach M, Gallagher SM, Hertzog JH, Havidich JE, Gelman B; Pediatric Sedation Research Consortium. Incidence and nature of adverse events during pediatric sedation/anesthesia for procedures outside the operating room: report from the Pediatric Sedation Research Consortium. Pediatrics. 2006 Sep;118(3):1087-96.*