Klinik Tıp Bilimleri Dergisi
Cilt: 5 Sayı: 1 Ocak 2017

Hematolojik Maligniteli Hastalarda Hepatit B ve Hepatit C Seroprevalansı

Hepatitis B and Hepatitis C Seroprevalance of patients with Hematological malignancy

Doç. Dr. Gülfem TEREK ECE[1], Aslı KUYUCU[2], Damla ŞAHİN[2], Hüseyin SAYGIN[2], Misem ONMUS[2], Uzm. Dr. Selda KAHRAMAN[3], Uzm. Dr. Serkan OCAKCI[3], Prof. Dr. Seçkin ÇAĞIRGAN[3]

[1]Medicalpark Izmir Hospital, Department of Medical Microbiology
[2]Izmir University School of Medicine
[3]Medicalpark Izmir Hospital, Department of Hematology

Yazışma Adresleri /Address for Correspondence:
Izmir University School of Medicine, Department of Medical Microbiology, Izmir

Tel/phone: *+90 232 399 50 70*
E-mail:*gulfem.ece@gmail.com*

Anahtar Kelimeler:
hematolojik malignite, HBV, HCV, seroprevalans

Keywords:
hematological malignancy, HBV,HCV, seroprevalance

Geliş Tarihi - Received
23/09/2016
Kabul Tarihi - Accepted
09/10/2016

Öz

Amaç: Hepatit B virus (HBV) ve Hepatit C virus (HCV) enfeksiyonları önemli bir sağlık sorunudur. Tüm dünyada hepatit B taşıyıcılığı oranı ortalama %5, hepatit C taşıyıcılığı oranı ortalama %3 olarak bildirilmektedir. HBV ve HCV enfeksiyonları benzer risk gruplarında daha sık görülmektedir. Hemodiyaliz hastaları, transplant alıcıları, sağlık personelleri, heteroseksüeller ve homoseksüeller bireyler riskli grupların başında yer almakta; hematolojik malinigteli hastalarda ayrıca kemik iliği transplantasyonu, uzun süreli hospitalizasyon ve immun supresif tedavi rejimleri bu grubu HBV ve HCV açısından daha önemli hale getirmiştir. Çalışmamızda hastanemize başvuran ve hematolojik malignite tanısı alan hastalarda Hepatit B ve Hepatit C seroprevalansı'nın saptanması amaçlandı.

Gereç ve yöntem: 01.01.2013-26.11.2015 tarihleri arasında İzmir Üniversitesi Tıp Fakültesi Hastanesi İç Hastalıkları AD Hematoloji Bilim Dalına başvuran ve hematolojik malignite tanısı alan 434 hasta alındı. On sekiz yaşından küçük, gebe, hemodiyalize giren ve sağlık personeli olarak görev yapan hastalar çalışmaya dahil edilmedi. Hastaların dosya bilgileri tarandı ve demografik veriler(cinsiyet, yaş vb), tanı, Laboratuvar sonuçları (Hbs Ag , Anti Hbc Total , Anti Hbs ve Anti HCV) klinik bulgular ve prognoz her bir hasta için hazırlanmış olgu formuna kaydedildi.

Bulgular: Çalışmamıza 18-91 yaş arası yaşları arasında 115'İ AML(%26.4), 100'ü (%23) Non Hodgin Lenfoma, 102'si (%23,5) Multipl Myelom, 117'si diğer hematolojik malignite(%26.9) olmak üzere çeşitli hematolojik malignite tanılarına sahip 434 hasta alındı. HbsAg bakılan 426 hastanın 16'sında (%3.80) HbsAg pozitifliği; 424 hastanın beşinde(%1.20) Anti-HCV pozitifliği saptandı. Anti Hbc Total bakılan 260 hastanın ise 79'unda(%30.4) pozitiflik saptandı.

Sonuç: Onkolojik hastalarda ortaya çıkan infeksiyöz komplikasyonlar, mortalitenin en büyük nedeni haline gelmiştir. Yoğun bakım tedavileri,invaziv girişimler, immunsupresif tedavi rejimleri, yanında kan ve kan ürünlerinin sık transfüzyonu hematolojik maligniteli hastaları diğer viral ajanların yanında hepatit virusları yönünden de riskli grupların arasına almıştır. Çalışmamız sonuçlarını Anti-HCV yönünden incelediğimizde yurtdışı ve ülkemizde yapılan çalışmalara göre düşük veya uyumlu bulundu. Aynı sonuçları Hbs Ag oranlarına baktığımızda da gördük. Çalışmamız sonuçları özellikle yakın dönemlerde ilimizde yapılmış olan çalışmalarla uyumlu bulundu.

Abstract

Background: Hepatitis B and Hepatitis C virus infections are important health issues. Hepatitis B seroprevalance is 5% and hepatitis C seroprevalance is approximately 3% globally. The major route of transmission of these infections are similar. Patients with hematological malignancy undergoing bone marrow transplantation, long hospital duration and administration of immunosuppressive treatment have made these patients an important risk group for Hepatitis B and hepatitis C. The aim of this study was to evaluate Hepatitis B and hepatitis C seroprevalence among patients admitted to our hospital with hematological malignancy.

Methods: 434 patients with hematological malignancy admitted between 01.01.2013-26.11.2015 were included. The patient records were monitored. Demographic data (age, gender), diagnosis, laboratory data (Hbs Ag , Anti Hbc Total , Anti Hbs and Anti HCV),clinical data and prognosis were recorded.

Results: 434 patients aged between 18-91 had AML (26.4%), non hodgkin lymphoma (23%), multipl myelom (23.5%), other hematological malignancies (%26.9%). 426 patients had HBsAg assay evaluated and sixteen (3.80%) were seropositive. Five patients(1.20%) out of 424 had Anti-HCV positivity and 79 (30.4%) out of 260 patients had AntiHBc total seropositivity.

Conclusion: Invasive procedures, immunosuppressive therapies, blood transfusions cause risk for hematological malignancy patients. Anti HCV seroprevalance in our study was either lower or consistent with other studies. There was a similar result for hepatitis B seroprevalance. Our results were consistent with the studies held in our province. Hematological malignancy patients carry more risk for hepatitis infections due to their diagnostic and treatment procedures. These patients should be monitorized regularly for these parameters.

Introductıon

Hepatitis B(HBV) and Hepatitis C (HCV) are globally important health issues. The HBV seroprevalance is approxiamtely 5% and 3% for HCV (1).HBV infection has an incubation period of 6 weeks to 6 months and shows a clinical picture varying from asymptomatic infection to fulminant hepatitis. HCV infection has an incubation period of 2-24 (mostly 6-8 weeks) months (1). Patients with HCV infection are usually asymptomatic; but they develop more chronic disease compared to HBV (2). HBV and HCV infections are more likely to take place in similar patient groups.

Frequent blood transfusions, invasive procedures, IV drug use, multiple partners, unprotected sex are major risk factors. Besides hemodialysis patients, transplant donors, health care staff, and homosexual individuals are under risk as well. Hematological malignity patients have all these risk factors and in addition to that bone marow transplantation, long duration of hospitalization, immun suppressive treatment modalities have made these patients more important for HBV and HCV infections (3).

The aim of this study was to evaluate the HBV and HCV seroprevalence among patients with hematological malignancies.

Materıals and Methods

434 hematological malignancy patients admitted to Izmir University Hospital Hematology Department between 01.01.2013-26.11.2015 were taken into the study. Patients under the age of 18, pregnant, and health staff were not included. The demographic data and hepatitis markers of the patients (Hbs Ag, Anti Hbc Total, Anti-Hbs and Anti HCV), clinical data and prognosis were screened from the hospital information system. SPSS v22 was used as the statisitical method.

Results

434 patients aged between 18-91 had AML (26.4%), non hodgkin lymphoma (23%), multipl myelom (23.5%), other hematological malignancies (%26.9%). 426 patients had HBsAg assay evaluated and sixteen (3.80%) were seropositive. Five patients(1.20%) out of 424 had Anti-HCV positivity and 79 (30.4%) out of 260 patients had AntiHBc-total seropositivity.

434 patients aged between 18-91 consisting of 166 female (38.2%), 268 male (61.8%) were included. The distribution of diagnosis of the patients consisted of 17(3.92%) myelodisplastic syndrome, 33 (7.60%) ALL, 10 (2.30%) KLL, 115 AML (26.4%), 12 (2.76%) KML, 27 (6,22%) Hodgkin Lenfoma, 100 (%23) non hodgkin lymphoma, 102 (23,5%) multiple myelom, 18 (4,1%) other hematological malignancies. The Hematological diagnosis distribution in various age groups was shown in Table-1. HbsAg,Anti-HBs, Anti-Hbc total seroprevalence according to diagnostic groups were shown in Table-2. Anti-HCV seroprevalence according to diagnostic groups was shown in Table-3.

Discussion

Hepatitis B and C virus infections are an important issue globally (1). Hepatitis B seroprevalence varies between 0.1-20% (median 5%) and 1-5% (median 3%) for Hepatitis C. Hepatitis B seroprevalence was 4-10% and 0.3-1.8% for Hepatitis C in Turkey (4). The route of transmission for both viruses are similar and detected in similar pa-

Table 1. Hematological diagnosis distribution in various age groups.

	20-39(n;%)	(n;%)40-49	(n;%)50-59	(n;%)60-69	(n;%)70+
Myelodisplastic Syndrome	(1; 5,9%)	(3; 17,6%)	(2; 11,8%)	(4; 23,5%)	(7; 41,2%)
ALL	(19; 57,6%)	(3; 9,1%)	(7; 21,2%)	(1;3,0%)	(3; 9,1%)
KLL	(0; 0,0%)	(2; 20,0%)	(3; 30,0%)	(4; 40,0%)	(1; 10,0%)
AML	(43; 37,4%)	(13; 11,3%)	(26; 22,6%)	(28; 24,3%)	(5; 4,3%)
KML	(2; 16,7%)	(1; 8,3%)	(3; 25,0%)	(4; 33,3%)	(2; 16,7%)
Hodgkin Lymphoma	(10; 37,0%)	(7; 25,9%)	(3; 11,1%)	(5; 18,5%)	(2; 7,4%)
nonHodgkin Lymphoma	(22; 22,0%)	(9; 9,0%)	(23; 23,0%)	(38; 38,0%)	(8; 8,0%)
others	(5; 27,8%)	(3; 16,7%)	(3; 16,7%)	(4; 22,2%)	(3; 16,7%)
Multiple myelom	(5; 4,9%)	(5; 4,9%)	(35; 34,3%)	(38; 37,3%)	(19; 18,6%)
Total	(107; %24,7)	(46; 10,6%)	(105; 24,2%)	(126; 29,0%)	(49; 11,3%)

Table 2. HbsAg,Anti-HBs, Anti-Hbc total seroprevalence according to diagnostic groups.

Diagnosis	HBSAG		Total	Anti-Hbctotal		Total	Anti-Hbs		Total
	Negative	Positive		Negative	Positive		Negative	Positive	
Myelodisplastic Syndrome	(17; 100,00%)	(0; 0,00%)	(17; 100, 00%)	(5; 50,0%)	(5; 50,0%)	(10; 100, 0%)	(5; 45,5%)	(6; 54,50%)	(11; 10 0,00%)
ALL	(31; 96,90%)	(1; 3,10%)	(32; 100, 00%)	(19; 79,2%)	(5; 20,8%)	(24; 100, 0%)	(11; 42,3%)	(15; 57,70%)	(26; 100, 00%)
KLL	(8; 88,90%)	(1; 11,10%)	(9; 100, 00%)	(4; 100,0%)	(0; 0,0%)	(4; 100, 0%)	(2; 40,0%)	(3 60,00%)	(5; 100, 00%)
AML	(112; 99,10%)	(1; 0,90%)	(113; 100, 00%)	(47; 67,1%)	(23; 32,9%)	(70; 100, 0%)	(37; 43,5%)	(48 56,50%)	(85; 100, 00%)
KML	(10; 83,30%)	(2; 16,70%)	(12; 100, 00%)	(4; 66,7%)	(2; 33,3%)	(6; 100, 0%)	(3; 60,0%)	(2 40,00%)	(5; 100, 00%)
Hodgkin Lymphoma	(25; 92,60%)	(2; 7,40%)	(27; 100, 00%)	(14; 87,5%)	(2; 12,5%)	(16; 100, 0%)	(11; 68,8%)	(4 25,00%)	(16; 100, 00%)
nonHodgkin Lymphoma	(93; 94,90%)	(5; 5,10%)	(98; 100, 00%)	(45; 72,6%)	(17; 27,4%)	(62; 100, 0%)	(46; 65,7%)	(24 34,30%)	(70; 100, 00%)
others	(17; 94,40%)	(1; 5,60%)	(18; 100, 00%)	(4; 36,4%)	(7; 63,6%)	(11; 100, 0%)	(7; 58,3%)	(5 41,70%)	(12; 100, 00%)
Multiple myelom	(97; 97,00%)	(3; 3,00%)	(100; 100, 00%)	(39; 68,4%)	(18; 31,6%)	(57; 100, 0%)	(36; 62,1%)	(21 36,20%)	(58; 100, 00%)
Total	(410; 96,20%)	(16; 3,80%)	(426; 0,00%)	(181; 69,6%)	(79; 30,4%)	(260; 100, 0%)	(158; 54,9%)	(128 44,40%)	(288; 100, 00%)

Table 3. Anti-HCV seroprevalence according to diagnostic groups.

Diagnosis	Anti-HCV		Total
	Negative	Positive	
Miyelodisplastik Sendrom	16 94,10%	1 5,90%	17 100,00%
ALL	33 100,00%	0 0,00%	33 100,00%
KLL	8 88,90%	1 11,10%	9 100,00%
AML	112 100,00%	0 0,00%	112 100,00%
KML	11 100,00%	0 0,00%	11 100,00%
HODGİN LENFOMA	26 100,00%	0 0,00%	26 100,00%
non HODGİN LENFOMA	97 99,00%	1 1,00%	98 100,00%
Diğer	16 88,90%	2 11,10%	18 100,00%
Multiple myelom	100 100,00%	0 0,00%	100 100,00%
Total	419 98,80%	5 1,20%	424 100,00%

tient groups. The infectious complications have become a major cause of mortality among oncology patients. (5). Invasive procedures, intensive care unit treatments, immunosuppressive treatment modalities, frequent blood transfusions have made hematological malignancy patients risk group for hepatitis viruses as well as other viral agents (3).

Brasseur et al. evaluated the hepatitits seroprevalence of 450 patients with solid tumor that are undergoing chemotherapy. 388 patients screened for all serological markers revealed 8.5% exposure to HBV and 1.3% for HCV. One patient (0.3%) was positive for HBsAg.

Visoná et al. reported a multicenter study of 625 pediatric patients with hematological malignancy and 124 pediatric patients were evaluated as a control group. The hematological malignancy group had a 53.3% of HCV seropositivty and 29.4% infected with HBV. These seropositivity was mostly detected in leukemia patients. Cotrol group had 3.2% HBV seropositivity and no HCV seropositivity was detected (7).

Cesaro et al showed 17.8% HCV seropositivity in 658 pediatric cancer patients and they also reported that 77.8% of the HCV seropositive patients had a history of previous blood transfusion and besides 35% had positive HBV serology (8).

Okan et al reported 12.2% HBsAg and 5.1% HCV seropositivity among 98 extrahepatic malignity patients (3). In another study that evaluated 448 hemtological malignancy patients in Izmir reported 4.2% HBsAg and 0.7% HCV seropositivity. Anti-HBc total was positive in 172 patients. Thirty one patients had only Anti_HBc total positivity. One hundred and fifty five (34.6%) of them had antiHBs positivity (1).

Saç et al evaluated 220 pediatric hematological malignancy patients and reported 5.9% HBV and 1.4% HCV seropositivity and 11.6 % HBsAg positivty in acute leukemia patients and 6.1% in anaplastic anemai patients (9).

Arslan et al reported 9.1% HBsAg and 1.8% HCV seropositivity among 164 NHL patients and the authors emphasized three patients having HCV and HBV seropositivity simultaneously (10).

Demirkaya et al reported HCV seropositivity among 95 pediatric oncology patients (previously seronegative) during treatment monitorization (11).

In our study 434 hematological malignancy patients consisting of 115 AML (26.4%), 100 (23%) non hodgkin lenfoma, and 102 (23,5%) multiple myelom. 426 patients had HBsAg assay evaluated and sixteen (3.80%) were seropositive. Five patients(1.20%) out of 424 had Anti-HCV positivity and 79 (30.4%) out of 260 patients had AntiHBc total seropositivity. AntiHBs seroprevalence was 44.4%.

The HCV results of this study was lower than Visona,

Cesaro, Okan et al. and relevant with Kose, Demirkaya and Arslan et al. Our results were particularly relevant with Kose et al. HBV and HCV seroprevalence can vary in various geographic regions similar to other populations.

The previous serological markers of the patients before treatment are important. These patients are under more risk due to treatment and diagnostic procedures compared to the other normal population (1). The periodical screening of these patients at the begining of treatment for serological parameters is essential.

References

1. *Ece G,Kose S,Olmezoglu A,Gozaydın A.Seroprevalence of Hepatitis B and C among Oncology Patients in Turkey. J Health Popul Nutr. 2011; 29(6): 652–655.*
2. *Sonsuz A.Kronik Hepatit B ve C. Sempozyum Dizisi No:58 Kasım 2007; s. 79-90*
3. *Okan A,Okan I,Akar S,Ellidokuz E,Akbaylar H,Sekeroglu B,Akman F,Bacaksız F,Tankurt E,Simsek İ,Gönen Ö. Ekstrahepatik Maligniteli Hastalarda HBsAg/anti-HCV Seropozitifliği ve Risk Faktörleri ile İlişkisi. Turk J Gastroenterol 1998; 1:28-31*
4. *Demirkaya M, Sevinir B. Pediatrik onkoloji hastalarında hepatit B ve seroprevalansının değişimi. Uludağ Üniver Tıp Fakültesi Dergisi 2008; 34:103-6.*
5. *Pullukcu H,Isıkgoz Tasbakan M,Yamazhan T,Sipahi OR,Arda B,Ulusoy S. Akut Miyeloid Lösemili Bir Hastada Gelişen Akut Hepatit B İnfeksiyonu. Viral Hepatit Dergisi 2006; 11(2): 109-112*
6. *Brasseur M,Heurgué A,Barbe C,Brami C,Rey J,Vella J,Dabouz F,Deslée G,Grange F,Volet J,Bouché O. Prevalence of hepatitis B and C and sensibility of a selective screening questionnaire in patients receiving chemotherapy for solid tumors. BMC Cancer 2015 ;15:999*
7. *Visoná,K,Baez F,Taylor L , Berríos R, León B , Pacheco C, Jirón R,Luftig R,Somarriba M (2002). Impact of Hepatitis B and Hepatitis C Virus Infections in a Hematology-Oncology Unit at a Children's Hospital in Nicaragua, 1997 to 1999.Clin Diagn Lab Immunol. 9(3): 622–626.*
8. *Cesaro S, Petris MG, Rossetti F, et al. Chronic hepatitis C virus infection after treatment for pediatric malignancy. Blood 1997;90:1315-20.*
9. *Saç RÜ, Yaralı N, Güngör S, et al. The risk of hepatitis B, hepatitis C and human immunodeficiency virus in multitransfused children with hematological diseases. J Pediatr Inf 2013;7: 21-4.*
10. *Yalcıntas Arslan U,Onder FO,Uncu D,Tokluoglu S,Gok Durnalı A, Celenkoglu G,Utkan G,Alkıs N. Non-Hodgkin Lenfomalı Hastalarda Hepatit B ve C Virüs Seroprevalansı: Tek Merkez Deneyimi. Açta Oncologica Turcica 2009;42: 2 7 -2 9*
11. *Demirkaya M, Sevinir B. Pediatrik Onkoloji Hastalarında Hepatit B ve C Seroprevalansının Değişimi Uludağ Üniversitesi Tıp Fakültesi Dergisi2008; 34 (3) 103-106.*