

Evaluation of Medico-Legal Cases in the Pediatric Emergency Department

Çocuk Acil Servisine Başvuran Adli Olguların Değerlendirilmesi

Ramiz Coşkun GÜNDÜZ¹, Halit HALİL², Cemile DEMİREL AÇIKALIN¹, Cüneyt GÜRSOY¹, Funda KURT³, Şanlıay ŞAHİN¹, Atilla ÇİFCİ¹, Seher ÖZGÜN³

¹Ankara Child Health and Diseases Hematology Oncology Education and Research Hospital, Ankara, Turkey

²Zekai Tahir Burak Women's Health Education and Research Hospital, Ankara, Turkey

³Ankara Child Health and Diseases Hematology Oncology Education and Research Hospital, Children's Emergency Department, Ankara, Turkey



ABSTRACT

Objective: Pediatric medico-legal events are important public health problems in the pediatric emergency service. They are considered among the leading causes of pediatric disabilities and deaths. We performed a study to evaluate the demographic features of the medico-legal cases who presented to our pediatric emergency service.

Material and Methods: During the 2-years study period, a total of 1586 patients presented to our service and were treated as medico-legal cases. Information about the patients was obtained from hospital records and analysed by the medical staff of the pediatric emergency service.

Results: 671 male (42.3%) and 915 female (57.7%) patients were included in our study. The majority of the patients were between 11- 14 years of age (n=397; 25.0%). Drug intake was the major complaint (n= 827; 52.1%) of our patients. Winter was the most common season (n= 486; 30.6%) and January (n=182; 11.5%) was the most common month for medico-legal admissions. The majority of the patients (n=551; 34.75%) presented to our emergency between 18-24 hours. 947 cases (59.7%) had health risks at the time of presentation.

Conclusion: Developing effective preventive strategies is essential to prevent child and adolescent injuries.

Key Words: Adolescent, Child, Medico-legal, Pediatric emergency

ÖZET

Amaç: Pediatrik acil servislere adli olgular önemli bir halk sağlığı problemidir. Adli olguların pediatrik fiziksel sakatlık ve ölümün önde gelen nedenlerinden olduğu düşünülmektedir. Pediatrik acil servisimize adli olgu olarak başvuran hastaların demografik özelliklerini incelemeyi amaçladık.

Gereç ve Yöntemler: 2 yıllık bir çalışma periyodunda acil servisimize başvuran ve adli olgu olarak tedavi edilen toplam 1856 kişi çalışmaya alındı. Hasta bilgileri hastane kayıtlarından elde edilmiştir ve acil servis doktorları tarafından analiz edilmiştir.

Bulgular: Çalışmaya 671 erkek (%42.3) ve 915 kız (%57.7) dâhil edildi. Hastaların çoğunluğu 11- 14 yaş grubundaydı (n=397; %25.0). İlaç alımı en sık başvuru nedeniydi (n= 827; %52.1). Adli olgu başvurularında kış mevsimi en sık başvuru mevsimi (n= 486; %30.6), Ocak ayı en sık başvuru ayıydı (n=182; %11.5). Hastaların çoğunluğu 18-24 saatleri arasında başvurmuştu (n=551; %34.75). 947 olgunun (%59.7) başvuru anında hayati riski vardı.

Sonuç: Çocuk ve adölesan yaralanmalarını önlemede efektif önleyici stratejilerin geliştirilmesi gereklidir.

Anahtar Sözcükler: Adölesan, Çocuk, Adli olgu, Pediatrik acil

INTRODUCTION

Unintentional childhood injuries are important issues that affect public health problems all over the world. They are considered

major causes of short- and long-term disabilities. They are also considered leading causes of death in children and adolescents (1). Injury is defined as any tissue damage caused by

exposure to any physical or chemical agent (2). Any external condition that intentionally or accidentally affects the physical or mental health of a patient and leads to any health risk or death is considered a medico-legal condition (3).

There are very few population-based investigations that focus on the incidence of injuries among children and adolescents (4-6). These studies have concluded that the age, sex, socio-economic status, and geographic location are the major determinants of the incidence of injuries.

Unintentional childhood injuries, regardless of their outcome, can lead to serious and important sequelae such as limitation of activity, time in bed, and absence from the school (4). In addition to that, it can lead to serious work and financial problems, anxiety and decreased overall quality of family life (7, 8).

The aim of our present study was to evaluate the demographic aspects of pediatric medico-legal patients and to analyse the variables that affect their presentation to the pediatric emergency service.

MATERIALS and METHODS

This cross-sectional descriptive study was conducted at the emergency service of Ankara Pediatric Hematology and Oncology Research and Training Hospital between January 2012 and December 2013. Our data were collected from the medico-legal reports in our pediatric emergency service and were evaluated retrospectively by medical doctors.

The medico-legal form includes the following information: gender and age of the patient, time, date, month and season of admission, medical diagnosis and the possibility of health risks. Those who had multiple trauma, multiple organ dysfunction and those who needed further examination and treatment or hospitalisation were considered to have possible health risks.

The study was approved by the Medical Ethics Committee of Ankara Pediatric Hematology and Oncology Research and Training Hospital.

Statistical analyses were performed by using SPSS version 18.0. Categorical variables were shown as frequencies.

RESULTS

A total of 1586 children presented to our pediatric emergency service with medico-legal injuries, representing 6.75 per 1000 of the total number of children (234.656) seen within the period of this study. 671 males (42.3%) and 915 females (57.7%) were included in this study. Mean age \pm SD was 10,52 \pm 5.94 for male patients and 7.61 \pm 5.86 for the females. The major age group was 11-14 years (n= 397; 25%) followed by the 15-18 years age group (n= 365; 23%). Demographic properties of the service users are presented in Table I. Winter was the most common season (n= 486; 30.6%) and January (n=182; 11.5%) was the most common month for medico-legal presentations. The majority of patients (n=551; 34.75%) presented to our emergency service between 18-24 hours. 947 cases (59.7%) had health risks at the time of presentation. The presentation time of the medico-legal patients is depicted in Table II. Drug intake was the major complaint (n= 827; 52.1%) of our patients while other complaints are presented in Table III.

DISCUSSION

In our present study, we evaluated the incidence of medico-legal cases of children and adolescents, their demographic features and factors affecting their presentation to our emergency service.

During the study period, we estimated that 234.656 patients presented to our pediatric emergency service. Only 1586 (6.75 per 1000) were treated as medico-legal cases. In our present study, the rates of medico-legal cases were different from those reported in prior studies. Sever et al. (3) and Yücel et al. (9) reported rates of medico-legal cases as 2.3% and 7.4% respectively and the difference in rates may be a reflection of multiple factors that affect presentations to emergency services (10). There is evidence that younger parents, lower education

Table I: Demographic properties of the patients.

Age group	Males		Females		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
0-2 years	169	10.66	140	8.84	309	19.50
3-5 years	175	11.06	143	9.05	318	20.10
6-10 years	84	5.32	101	6.38	185	11.70
11-14 years	135	8.50	262	16.50	397	25.00
15-18 years	103	6.50	262	16.50	365	23.00
Missing	5	0.26	7	0.44	12	0.70
Total	671	42.30	915	57.67	1586	100.00

and lower- income of families are some factors that increase the injury risk in pediatric patients (5).

As shown in Table III, the majority of our medico-legal patients were medically treated, non traumatic cases, and drug intake was the most common complaint (n= 827; 52.1%) of our patients. Drug intake was accidental in infants and young children and was due to suicidal behaviour in adolescents. These results are not comparable with those of prior studies that reported higher rates of traumatic rather than medical inquiries presenting to the pediatric emergency service and treated as medico-legal cases (3,9). The fact that explains the lower rate of our traumatic patients than those reported by the previous studies is that our emergency service accepted only medical cases while the traumatic patients were directly referred to the trauma emergency services at other hospitals in Ankara. Traumatic cases included in our study were misdirected to our service and they were first stabilised in our pediatric emergency service then referred to trauma services at other hospitals.

52,1% of our medico-legal patients applied to pediatric emergency service as a result of drug intake. In consistent with

a previous study, Turla et al. (11) found that drug poisoning was the prominent complaint of medico-legal cases aged between 0-18 years. The American Association of Poison Control Center reported that in 2003, 65.8 % of drug poisoning cases were between 0-19 age pediatric cases (12). Sever et al. (3) and Yucel et al. (9) found that drug poisoning was the major reason of non traumatic medico-legal cases admitted to pediatric emergency service.

Evening hours between 18-24 hours was the most frequent period of our medico-legal presentation (n=551; 34,75%). This is consistent with the past population-based studies of pediatric emergency applications that deduced that the most frequent time period for pediatric emergency service applications especially for medico-legal cases and intoxications were between 16-24 hours (9,13-14).

Unlike the previous studies (3,9,11), our patients frequently presented in Winter (n= 486; 30.6%), and January (n=182; 11.5%) was the most frequent month for presentations. The previous studies concluded that summer was the most frequent period of the year for pediatric medico-legal presentations peaked during June to August. The result was due to summer holidays of schools where children had longer outdoor playing time than any other season. This in turn, increased the possibility of incidental trauma and injuries. Our data revealed that a large number of children were injured as a result of drug consumption at home during the winter season when parents preferred their children to stay at home rather than playing outside.

The incidence of pediatric medico-legal events is high and may result in transient or permanent sequelae that lead to important

Table II: Presentation time of the medico-legal patients.

Variable	Time	Frequency	Percent
Season	Winter	486	30.6
	Spring	423	26.7
	Summer	317	20.0
	Autumn	359	22.6
	Missing cases	1	0.1
	Total	1586	100.0
Month	January	182	11.5
	February	153	9.6
	March	137	8.6
	April	128	8.1
	May	159	10.0
	June	98	6.2
	July	109	6.9
	August	110	6.9
	September	131	8.3
	October	99	6.2
	November	129	8.1
	December	150	9.5
	Missing cases	1	0.1
Total	1586	100.0	
Time period (Hour)	06-12	293	18.48
	12-18	484	30.50
	18-24	551	34.75
	24-06	229	14.44
	Missing cases	29	1.83
	Total	1586	100.0

Table III: Chief complaints of the patients.

Chief complaint	Frequency	Percent
Drug intake	827	52.1
Carbon monoxide intoxication	356	22.4
Toxic substance consumption	104	6.6
Corrosive substance oral intake	79	5.0
Food poisoning	46	2.9
Alcohol consumption	54	3.4
Inhaled gas exposure	22	1.4
Trauma	21	1.3
Electric shock	20	1.3
Arrest	12	0.8
Loss of consciousness	10	0.6
Narcotics	9	0.6
Swallowing foreign substance	6	0.4
Bite	3	0.2
Abandoned infant	2	0.1
Drowning	2	0.1
Missing cases	13	0.8
Total	1586	100.0

health risk or death. The best part of our study group (59.7%) had health risks at the time of admission, 12 of them died shortly just after admission to emergency service. The consequences of the other patients who had health risks were not will known. This was due to the fact that our present study is a retrospective study and depending upon data collected from hospital records that were uncompleted. Data about patients hospitalised or send to another hospitals for further examination and treatment were not enough for any statistical analysis. The investigation of these limitations will be important directions and guides for future researches. Further studies in our population should be conducted to develop effective preventive strategies for the medico-legal issues.

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