

Medical Malpractice in Turkey: Pediatric Cases Resulting in Death

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What is already known on this topic?

- The number of lawsuits regarding malpractice accusations in pediatrics is on the increase, similar to the overall rise in medical malpractice allegations throughout the world.
- Lack of communication especially between physician and patient is one of the factors of malpractice accusations.
- The most common reasons for death in confirmed malpractice cases are reported to be the diagnosis of gastroenteritis and pneumonia among children

What this study adds on this topic?

- The most common diagnostic error made at the clinic was the wrong diagnosis of a “healthy child” in malpractice cases.
- Malpractice claimed cases were mostly seen in the infants (0–28 days).
- The ratio of malpractice in the cases resulting in death within the first 7 days was found to be statistically significant in comparison with the death cases seen in 8 or more days after the first arrival to the healthcare organizations.

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ABSTRACT

Background: Malpractice in medicine refers to the failure of a physician to meet a standard of diagnosis and treatment, damages/injuries caused by reprehensible ignorance, or negligence of a doctor.

Methods: Allegedly malpractice cases of pediatricians and the cases in which causal link between malpractice and death was confirmed by the decision of the First Board of Specialization of the Council of Forensic Medicine between the dates of January 1, 2012 and December 31, 2014 were analyzed retrospectively.

Results: The study revealed that in the majority of 286 cases, the infants were 0–28 days old (n = 115; 40.2%) and were hospitalized due to respiratory problems (n = 111; 38.8%). The allegations of malpractice cases were most frequently seen in private hospitals (n = 120; 42%). Malpractice was found in 17.5% of the cases (n = 50), in which the majority of cases were proved to be diagnostic errors (n = 24; 48%). The most common diagnostic error was the misdiagnosis of “healthy child” in medical malpractice cases (n = 11, 22%).

Conclusions: In conclusion, it is considered to be important for the pediatricians to maintain proper communication with the relatives of the patients while monitoring their health condition, and pediatricians are expected to be more careful—especially in the diagnostic phase—in the cases involving 0–1 age group as children are most likely to be diagnosed as healthy in this age group.

Keywords: Pediatrician, medical malpractice, forensic medicine

INTRODUCTION

World Health Organization defines health as a state of complete physical, mental, and social well-being and not merely the absence of disease or disability.¹ Everyone is aspired to lead a happy and healthy life; however, one may undergo physical and psychological downturns in some stages of life. Malpractice allegations are based on the rapport between patients and physicians in the stages of medical record taking, diagnosis, treatment, and follow-up that start from impairment of health and the first visit to a physician.^{2,3}

Malpractice in medicine refers to the failure of a physician to meet a standard of diagnosis and treatment, damages/injuries caused by reprehensible ignorance, or negligence of a doctor.^{4–6} However, all medical practices carry some risks no matter how low they are. Medical intervention starts with consent taken from a patient when all possible and anticipated risks are pondered taking into account benefits and benefit–damage equilibrium. This inevitable situation is known as “permissible risk” in legal terminology whereas such risks are named as “complications” in medicine. A physician cannot be held liable if he/she has

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informed the patient of complications and has obtained his/her consent prior to medical intervention.⁷⁻⁹ However, doctors can be held liable only if the complications are not managed efficiently and measures against anticipated complications are not taken.⁸ Medical malpractice litigations are an important problem not only in developed countries but also in developing countries.¹⁰ In the United States, the rate of malpractice claims against pediatricians is lower than the other specialties. However, the average amount of compensation paid by pediatricians is among the highest.¹¹ Unfortunately, there are not enough studies in our country to raise the awareness of pediatricians about medical malpractice.¹² The objective of this study is to evaluate the pediatric cases that resulted in death claiming medical malpractice, and thus to increase the awareness of pediatricians about cases with alleged medical malpractice.

METHODS

Sampling

Allegedly malpractice cases of pediatricians and the cases in which causal link between malpractice and death was confirmed by the decision of the First Board of Specialization of the Council of Forensic Medicine between the dates of January 1, 2012 and December 31, 2014 were analyzed retrospectively.

DIAGNOSTIC METHODS

The First Forensic Medicine Specialization Board of the Forensic Medicine Institute acts as an expert on files with medical malpractice claims that resulted in death and were sent by judicial authorities. The board consists of a chairman and 10 members (2 forensic medicine specialists, a pathologist, an internist, a cardiologist, a general surgeon, a neurosurgeon, an anesthesiologist, a gynecologist, and a pediatrician). After the file comes to the board from the judicial authorities, it is examined by the rapporteur and if there are deficiencies in the file, a letter is written to the judicial authority to complete it. If the file is complete, statements of victims, accused doctors, and witnesses, all medical documents, surgery notes, epicrisis reports, observation documents, radiological examination documents and images, autopsy reports, and photographs are evaluated. Afterward, the prepared report is presented to the chairman and members of the board, and as a result, a final report is prepared and sent to the court regarding whether the physician is at fault.

Data Collection and Implementation

While data were being recorded, the following parameters were scrutinized: the age of the child on the date of incident and sex of child, the reason for the visit to the hospital, reference of diagnosis, healthcare organization visited, the academic title of physician allegedly involved in the case, reference concerning whether an error was committed or not in medical interventions, the effect of time on malpractice correlations from the first visit to the healthcare organization until the death occurs, and the phase in which confirmed malpractice was committed. Besides, although it is designed as a retrospective study with no identification data or human/animal subjects, and thus it is out of the scope of the informed consent doctrine; all procedures in the study were performed after obtaining scientific approval of The Ministry of Justice Council of Forensic Medicine dated

February 17, 2015, no. 21589509/90 and in accordance with the 1964 Helsinki declaration including its later amendments.

Statistical Analysis

Statistical Package for the Social Sciences (SPSS) version 21.0 (IBM SPSS Corp.; Armonk, NY, USA) was used for data analysis of the study. The chi-square test or Fisher's exact test, where appropriate, was used for the comparison of qualitative data, as well as descriptive statistical methods were used. The significance level was accepted as $P < .05$.

RESULTS

Profiles of Patients

Two hundred eighty-six cases between the dates of January 1, 2012 and December 31, 2014 were identified in which the pediatricians were accused of malpractice. Malpractice was found in 50 cases (17.5%) and no malpractice indications were encountered in the 234 cases (81.8%); furthermore, no opinion was delivered in the 2 remaining cases as there was lack of medical records and/or documents that would prove malpractice incidents. It was found out that boys were involved in 168 cases (58.7%), girls were involved in 118 cases (41.3%) (Table 1). The study also showed that malpractice claimed cases were mostly seen in the infants (0-28 days) ($n = 115$, 41.3%) (Table 1).

Medical Institutions

As far as the distribution of hospitals is concerned, it has been found that treatments were handled mainly in private hospitals ($n = 120$, 42%) (Table 1). When the cases first arrived at the hospitals, the most common health problems were reported to be respiratory problems ($n = 111$; 38.8%) and high fever ($n = 42$; 14.7%) (Table 1). Pediatricians often gave the first intervention to patients in the emergency room ($n = 88$, 30.8%) (Table 1). Specialist physicians ($n = 226$, 79%) frequently were accused of medical malpractice (Table 1).

Medical Liability

When the reasons of 50 cases reported as medical malpractice were analyzed, it was found out that the most common malpractice was related to diagnostic errors ($n = 24$, 48%). Furthermore, failure to diagnose on time was stated to be the most common diagnostic error in the study ($n = 8$, 16%) (Table 2).

Medical Conditions Involved in Claims

Upon the analysis of diagnoses made at the healthcare organizations, it was found out that there was no data obtained from only one case. Concerning the cases in which data were acquired, the diagnosis of infant diseases was indicated to be the most common ($n = 92$; 32.2%), followed by a diagnosis of respiratory diseases ($n = 67$; 23.4%). The study revealed that in the 28 cases (9.8%), children were considered "healthy" (healthy child) without being exposed to any medical intervention apart from physical examinations. Also, diagnosis of "healthy" children is the most common misdiagnosis ($n = 14$, 28%) (Table 3). This indicates that 11 cases out of 14 (22%) were considered to be a diagnostic error. The high rate of malpractice incidents in the cases where children were incorrectly diagnosed "healthy" was found statistically significant than other diagnoses ($P < .001$) (Table 4).

Table 1. Characteristics of Medical Malpractice Situation

	n	%
Gender		
Male	168	58,7
Female	118	41,3
Age group		
0-28 days	115	40,2
29 days to 1 year	67	23,4
2-5 years	57	19,9
6-12 years	39	13,6
13-17 years	8	2,9
Hospital visited		
Private	120	42
State	115	40,2
University	24	8,4
Education and research	27	9,4
Health problem at the first arrival to the health organization		
Respiratory problems	111	38,8
High fever	42	14,7
Others	32	11,2
Stomach ache, diarrhea	27	9,4
Nausea, vomiting	21	7,3
Birth control	17	5,9
Coughing	15	5,2
Dysphagia	6	2,1
Convulsion	6	2,1
Jaundice	5	1,7
Trauma	4	1,4
First place of medical intervention of the physician		
Emergency room	88	30,8
Surgery room	82	28,7
Polyclinic	70	24,5
Delivery room	27	9,5
Pediatrics department	7	2,4
Intensive care	7	2,4
Other	5	1,7
Emergency-Elective		
Emergent intervention	197	68,9
Elective intervention	89	31,1
Academic degree		
Professor	2	0,7
Associate Professor	3	1
Assistant Professor	1	0,4
Specialist in sub-branch	1	0,4
Fellow	1	0,4
Specialist	226	79
Assistant	5	1,7
More than one physician	47	16,4

Time Between the First Admission at the Hospital to Death

When the time between the first admission at the hospital to death was scrutinized, it was indicated that individuals lost their lives within 24 hours after the first arrival to the hospital

in 91 cases (31.8%), on the other hand, 58 cases (20.3%) passed away between 8 days and 1 month after their first contact with the healthcare organizations. When the correlation of medical malpractice and time spent between the first arrival at the healthcare organization until time of death was analyzed, the ratio of malpractice in the cases resulting in death within the first 7 days was found to be statistically significant in comparison with the death cases seen in 8 or more days after the first arrival to the healthcare organizations ($P < .05$) (Table 4).

DISCUSSION

Medical malpractice can be defined as deviation from standards and all kinds of failure in the process management in case of such deviation.³ Depending on the influence of media on the nations and the increase in the education level of the societies, there has been a rise in the applications to the judicial authority concerning the search for legal remedies and allegedly medical malpractice cases.^{13,14} Among all the medical malpractice allegations, pediatrics in China ranks ninth (4%), the same specialty in Taiwan takes up the third position (11.2%). Pediatrics in Germany is the tenth in rankings (2%) among all the malpractice allegations that resulted in death. Pediatrics in Italy ranks the third with regard to the medical malpractice cases that resulted in death (15.7%).^{10,15-17} From the perspective of pediatricians in our country, the number of allegations of malpractice cases that resulted in death between the years of 2004 and 2006 was 63 whereas the results of our study carried out in the years of 2012-2014 showed that the number of malpractice allegations was 286, which indicate that there has been a significant increase in the malpractice allegations in time.¹⁸

There is a significant difference in the ratio of malpractice cases among medical specialties.^{14,19} As mentioned before, 3.1% of the pediatricians in the USA can be subject to malpractice accusations annually, and annually 0.5% of the pediatricians are found to be culpable¹¹; in the research works carried out in Turkey, malpractice cases are reported to be seen in 31.7% of the cases in neurology,¹⁴ 22% in general surgery,²⁰ 39-66% in anesthesia,^{21,22} 21.5% in ophthalmology,²³ 30.4% in obstetrics and gynecology,²⁴ 25% in orthopedics,²⁵ and 21.6-30% in pediatrics.^{12,18} In this study, the ratio of malpractice cases in pediatrics was found to be 17.5%, lower than the other specialties. This may be due to the fact that the study only included cases that resulted in death.

Malpractice allegations and liability to compensation concerning children are generally seen in cases involving boys aged between 0 and 2.²⁶⁻²⁸ In this study, male children were seen to outweigh in number and children are mostly at the age of <1 (n = 182; 63.6%).

With regard to the research conducted in Turkey, although there are some publications,^{12,14,18,20-22} indicating that malpractice cases were mostly encountered at the State hospitals (39.7-83%), there are other publications^{23,29,30} stating that such incidents were primarily seen in private hospitals (47-50%). In regard to the malpractice allegations that involve 0-18 age group, it was revealed that 39.7-63.4% of such cases took

Table 2. Distribution of Error Types in Malpractice Cases

Classification of Medical Errors	n _{total} (%)	n (%)
Diagnostic error		
Inattentive and incomplete examination	24 (48%)	7 (14%)
Not being able to diagnose on time		8 (16%)
Wrong diagnosis		3 (6%)
Not requesting necessary medical workup and graphics		4 (8%)
Not requesting consultations		2 (4%)
Treatment error		
Incomplete treatment	5 (10%)	4 (8%)
Starting treatment late		1 (2%)
Follow-up error		
Not transferring patients/transferring patients carelessly	17 (34%)	6 (12%)
Lack of follow-up in treatment process		1 (2%)
Not admitting the patients that need to receive inpatient treatment		6 (12%)
Early release of the patient		4 (8%)
Breach of duty		
Causing negligence/breach of duty by not being present at the hospital	4 (8%)	2 (4%)
Causing negligence/breach of duty by not participating in consultation		1 (2%)
Not keeping medical record/insufficient medical record		1 (2%)

Table 3. Distribution of Diagnosis of Primary Diseases at the Health Organizations

Diagnosis	Medical Malpractice			n _{total} n (%)
	Yes (n)	No (n)	Not Analyzed (n)	
Infant diseases	11	81	-	92 (32.1%)
Respiratory system diseases	7	59	2	68 (23.7%)
Digestive system diseases	7	22	-	29 (10.1%)
Healthy child	14	14	-	28 (9.8%)
Other	4	15	-	19 (6.7%)
Central nervous system diseases	3	13	-	16 (5.7%)
Circulatory system diseases	1	12	-	13 (4.6%)
Metabolic diseases and metabolic disorders	1	7	-	8 (2.8%)
Urinary system diseases	1	4	-	5 (1.7%)
Sepsis and its complications	1	4	-	5 (1.7%)
Hematologic diseases	0	3	-	3 (1.1%)
Total	50	234	2	286 (100)

Table 4. Relationship Between Emergency-Elective Intervention, Diagnosis Made at the Health Organization, Time Period From Diagnosis to Death and Malpractice

	Medical Malpractice		P ⁱ
	Yes (n)	No (n)	
Intervention			
Emergency	38	158	.239
Elective	12	76	
Diagnosis at health organization			
"Healthy" child	14	14	<.001*
Others	36	220	
Time period from the first arrival to death			
0-7 days	42	144	.002
>8 days	8	90	

The bold values are statistically significant. (P<0.05).
ⁱThe chi-square test; *Fisher's exact test

place at State hospitals.^{18,31} However, as a result of this study, it was found out that medical interventions as a cause of allegedly malpractice cases were performed at private hospitals (n = 120, 42) (Table 1). This finding indicates the importance

of the rapport between physicians-patients as well as the cost and/or the image of the hospital as it raises the level of expectation. That is why these could be the just causes of such complaints or allegations.

A number of 53–85% of the physicians faced with malpractice allegations were reported to be specialists in our country.^{12,14,18,20,23,29} In this study, in line with the literature, most of the suspected physicians were specialists ($n = 226$, 79%) (Table 1).

Algan³² stated that genitourinary system related health problems (24.2%) appeared to be the primary health problem of the patients when they first arrived at the health organizations in cases autopsied with the claim of medical malpractice; in the study carried out by Sarica et al.¹² the most common diagnoses made at the health organizations was lower respiratory infection based on 105 child cases ($n = 28$; 30.4%), followed by sepsis ($n = 12$; 13.1%). In this study, the main health concern was revealed to be respiratory problems on the first arrival of the patients ($n = 111$, 38.8%), followed by high temperature ($n = 42$, 14.7%) (Table 1). This could be explained by the symptoms of infection—especially for the age group below 1—which are high temperature and respiratory problems. When diagnoses at the time of the first arrival at the health organizations were scrutinized in this study, the most common diagnoses were revealed to be neonatal diseases, followed by respiratory problems. When taken into account the facts that “no further medical intervention was performed in 28 cases except for the physical examination on the grounds that they were healthy” and “the correlation between the diagnosis of “healthy child” and medical malpractices are statistically significant,” it is thought to be convenient to highlight that specialists should be careful when they diagnose the patients as “healthy” as the clinical symptoms can be vague and may go unnoticed.

The research carried out by Wu et al.,³³ revealed that the most common malpractice was diagnostic errors regardless of any distinction among the specialties in medicine. According to the studies conducted in Turkey, maltreatment most frequently stems from treatment errors in general surgery, and urology whereas diagnostic errors appear to be the leading factor of malpractice cases in obstetrics and gynecology, and neurology.^{14,20,24,29} Diagnostic errors (31.9–53.2%) are mostly seen in pediatrics.¹² In addition, the most common malpractice factors are stated to be that no consultation is requested and despite the indications of hospitalization, patients are not hospitalized.^{12,18,34} Furthermore, Thomas et al.³⁵ indicated that diagnostic errors resolved through legal actions occupy only a small percentage of diagnostic errors in pediatric practice. In a survey conducted by Singh et al.³⁶ in the years of 2008–2009 where 797 pediatricians participated, more than half of the participants (54%) declared that they made diagnostic errors that could harm the patients at least once or twice a month whereas almost half of the physicians (45%) who attended the survey indicated that once or twice a year they committed medical errors on the aforementioned level of importance. In this study, we found out that the most common reason for reporting malpractice by the Board of Specialization was a diagnostic error ($n = 24$; 48%) (Table 2).

The diseases of which verified malpractice cases are mostly seen are the diagnosis of meningitis, appendicitis, nonteratogenic anomalies, pneumonia, and infant brain damage.³⁷ The most common reasons for death in confirmed malpractice cases are reported to be the diagnosis of gastroenteritis and

pneumonia among children.³⁸ In the confirmed malpractice cases resulting in death, the most common diagnosis is reported to be lower respiratory infection (40%) in Turkey.¹² This study revealed that infant diseases were the most diagnosed diseases and children who were incorrectly diagnosed “healthy” were found to be the most encountered and confirmed malpractice cases ($n = 14$, 28%) (Table 3). It was found that medical malpractice decision was made in 11 cases (78.5%) due to diagnostic errors. The aforementioned 14 cases were considered mostly to be infant pneumonia by the First Board of Specialization of Council of Forensic Medicine. When the relationship between the “healthy” child diagnosis and the rate of medical malpractice was examined, the results were found to be statistically significant ($P < .001$) (Table 4). When 12 cases out of 14 (85.7%) are in the neonatal age group, it is extrapolated that the pediatricians who are expected to examine newborns right after delivery and during discharge from hospital, conceive this duty as an extra burden out of their polyclinic and departmental obligations, so they do not pay sufficient attention and accordingly, so that the number of malpractice cases in neonatal is encountered more than the other age groups.

The majority of malpractice allegations concerning children were claimed to occur at the emergency room, followed by departments of specialty, surgery room, and delivery room.^{18,27,31} In line with the literature, this study revealed that pediatricians accused of malpractice intervened in the cases mostly at the emergency room ($n = 88$, 30.8%) (Table 1). This finding sheds light on the fact that due to poor working conditions of the physicians working at the emergency room, irregularities in their sleeping pattern, the necessity to take rapid action in case of acute cases despite lack of information about the patient, a limited amount of time allocated to each patient and non-sustainable communication between physician and patient, specialists are more likely to be subject to malpractice incidents.^{33,39} However, no significance was found between confirmed medical malpractice and emergent & elective intervention of pediatricians in this study ($P > .05$) (Table 4), meaning that pediatricians are able to make sound decisions even under challenging circumstances.

When the duration of the inpatient treatment was analyzed in the alleged malpractice cases that resulted in death, the results of the researches indicated that the ratio of such cases was found out to be 46–52% among the patients whose hospitalization period (inpatient treatment) was between 0 and 1 day; the same ratio was between 24% and 33% in the hospitalization period of 2–7 days; if there was longer hospitalization period of 7 days or more, the ratio of allegedly malpractice cases was stated to be 20–23%.^{32,40} In this study, the ratio of such cases was found out to be 31.8% for the hospitalization (inpatient treatment) of 0–1 day; 33.9% for the hospitalization (inpatient treatment) of 2–7 days; the ratio of malpractice cases was 34.3% for 8 days of hospitalization or more (Table 1). The correlation of malpractice incidents seen in the cases that resulted in death within 0–7 days was found statistically significant ($P < .05$) when compared to the cases resulting in death within 8 days or more (Table 4). In consequence, it is considered to be important that pediatricians do not ignore the pace of clinical prognosis in children as they develop rapidly.

This study has strengths as well as weaknesses. First of all, the decisions given are only the decision of an expert institution and not the final decision of the court. The inability to reach the final decisions of the court is an important limitation. As a result, since the Forensic Medicine Institute is not the only authority, the expert report given by the board can be appealed and the judge is not obliged to comply with the expert's decision. Another limitation is the lack of compensation amounts given to the physicians as a result of the lawsuit. In addition, since our study included only cases that resulted in death, it cannot be said to represent the entire sample correctly. However, it is very important that the population of the study includes cases from all over the country. It gives important clues to pediatricians about cases claiming medical malpractice.

CONCLUSION

The number of lawsuits regarding malpractice accusations in pediatrics is on the increase, similar to the overall rise in medical malpractice allegations throughout the world. That is why, making risk analysis on the verified malpractice incidents in pediatrics is one of the risk management techniques for the protection of not only the children but also the pediatricians. Conducting such reviews and analyses is the joint responsibility of pediatrics and forensic medicine. Among all the findings, the most remarkable one to underline is that pediatricians are expected to be more careful especially when they diagnose children aged between 0 and 1 as "healthy" and maintain better relationships with the patient relatives in the following up of their cases.

Ethical Committee Approval: Ethics committee approval was received from The Ministry of Justice Council of Forensic Medicine dated February 17, 2015., no. 21589509/90.

Informed Consent: The research is designed as a retrospective study with no identification data or human/animal subjects, and thus the informed consent was not obtained.

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