Araştırma Makalesi *Research Article*

Pamukkale Tıp Dergisi
Pamukkale Medical Journal

doi:https://dx.doi.org/10.31362/patd.1003998

What is the course of secondary pancreatitis in pediatric intensive care unit?

Pediatrik yoğun bakım ünitelerinde gözlenen sekonder pankreatitlerin seyri nasıldır?

İshak Abdurrahman Işık, Hasan Serdar Kıhtır, Ulaş Emre Akbulut, Atike Atalay, Ebru Atike Ongun

Gönderilme tarihi:03.10.2021 Kabul tarihi:20.10.2021

Abstract

Purpose: Acute pancreatitis is diagnosed frequently in the pediatric population. Course of acute pancreatitis in children is usually mild. However, severe pancreatitis may develop in some patients with the local or systemic complications. Course of secondary acute pancreatitis in children in the pediatric intensive care unit is unknown. Aim of this study is to evaluate the clinical characteristics and outcome of children who developed secondary acute pancreatitis in a tertiary pediatric intensive care unit.

Material and methods: Children hospitalized in pediatric intensive care unit for different causes and developed secondary acute pancreatitis were included into this retrospective study. Demographic features of the patients, duration of hospitalization in intensive care unit, primary disease causing hospitalization, other underlying diseases, duration of mechanical ventilation, pediatric mortality risk score III and nutritional status were conducted from hospital records.

Results: Seventy-seven children (58.4%male and mean age: 6.7 years) were included in the study. The most common underlying disease was neurological diseases (19.5%). Majority (46.7%) of the secondary pancreatitis was severe. 68.8% of the children with secondary pancreatitis were on mechanical ventilation. Duration of hospitalization and time on mechanical ventilator was significantly longer in patients with severe pancreatitis. The mean pediatric mortality risk III score was also significantly higher in this group.

Conclusion: Although acute pancreatitis in children has a mild course, secondary acute pancreatitis is often severe and has a high mortality rate in children in the pediatric intensive care unit.

Key words: Children, secondary pancreatitis, pediatric intensive care unit.

Isik IA, Kihtir HS, Akbulut UE, Atalay A, Ongun EA. What is the course of secondary pancreatitis in pediatric intensive care unit? Pam Med J 2022;15:101-106.

Öz

Amaç: Akut pankreatit pediatrik popülasyonda sıklıkla teşhis edilir. Çocuklarda akut pankreatitin seyri genellikle hafiftir. Ancak bazı hastalarda lokal veya sistemik komplikasyonları olan ciddi pankreatit gelişebilir. Pediatrik yoğun bakım ünitesindeki çocuklarda sekonder akut pankreatitin seyri bilinmemektedir. Bu çalışmanın amacı, üçüncü basamak bir pediatrik yoğun bakım ünitesinde sekonder akut pankreatit gelişen çocukların klinik özelliklerini ve sonuçlarını değerlendirmektir.

Gereç ve yöntem: Bu retrospektif çalışmaya çocuk yoğun bakım ünitesine farklı nedenlerle yatırılan ve sekonder akut pankreatit gelişen çocuklar dahil edildi. Hastaların demografik özellikleri, yoğun bakım ünitesinde yatış süreleri, yatışa neden olan birincil hastalıkları, altta yatan diğer hastalıklar, mekanik ventilasyon süresi, pediatrik mortalite risk skoru III ve beslenme durumları hastane kayıtlarından alındı.

Bulgular: Yetmiş yedi çocuk (%58,4 erkek ve ortalama yaş: 6,7 yıl) çalışmaya dahil edildi. En sık altta yatan hastalık nörolojik hastalıklardı (%19,5). Sekonder pankreatitin çoğunluğu (%46,7) şiddetli idi. Sekonder pankreatitli çocukların %68,8'i mekanik ventilatördeydi. Ağır pankreatitli hastalarda hastanede kalış süresi ve mekanik ventilatörde geçirilen süre anlamlı olarak daha uzundu. Ortalama pediatrik mortalite risk skoru III de bu grupta anlamlı olarak daha yüksekti.

Sonuç: Çocuklarda akut pankreatit hafif seyirli olmasına rağmen, sekonder akut pankreatit, çocuk yoğun bakım ünitesindeki çocuklarda sıklıkla şiddetlidir ve mortalite oranı yüksektir.

Anahtar kelimeler: Çocuk, sekonder pankreatit, pediatrik yoğun bakım ünitesi.

Işık IA, Kıhtır HS, Akbulut UE, Atalay A, Ongun EA. Pediatrik yoğun bakım ünitelerinde gözlenen sekonder pankreatitlerin seyri nasıldır? Pam Tıp Derg 2022;15:101-106.

İshak Abdurrahman Işık, M.D. University of Health Sciences Antalya Education and Research Hospital, department of Pediatric Gastroenterology Hepatology and Nutrition, Antalya, Turkey, e-mail: ishakisik02@yahoo.com.tr (https://orcid.org/0000-0001-8745-8353) (Corresponding Author)

Hasan Serdar Kıhtır, M.D. University of Health Sciences Antalya Education and Research Hospital, Pediatric Intensive Care Unit, Antalya, Turkey, e-mail: serdar.kihtir@gmail.com (https://orcid.org/0000-0003-0120-8711)

Ulaş Emre Akbulut, Assoc. Prof. M.D. University of Health Sciences Antalya Education and Research Hospital, Department of Pediatric Gastroenterology Hepatology and Nutrition, Antalya, Turkey, e-mail: ulasemre@hotmail.com (https://orcid.org/0000-0002-5098-4787)

Atike Atalay, M.D. University of Health Sciences Antalya Education and Research Hospital, Department of Pediatric Gastroenterology Hepatology and Nutrition, Antalya, Turkey, e-mail: atike_akaslan@yahoo.com (https://orcid.org/0000-0001-8909-2746)

Ebru Atike Ongun, Assoc. Prof. University of Health Sciences Antalya Education and Research Hospital, Pediatric Intensive Care Unit, Antalya, Turkey, e-mail: ebru_temel@yahoo.com (https://orcid.org/0000-0002-1248-8635)

Introduction

Acute pancreatitis (AP) is defined as reversible inflammation of the pancreatic parenchyma, and occurs with interstitial edema, acute inflammatory cell infiltration, varying degrees of cellular apoptosis and necrosis [1]. It is characterized by an increase in pancreatic enzymes in serum and/or urine and sudden onset abdominal pain with radiological changes in the pancreas [2]. The incidence has increased in the last 30 years [3-5]. More frequent multisystemic disorders that can cause pancreatitis may be the reason for the increased frequency of the disease [3, 6, 7]. However, the main reason for this increase is thought to be related to the increase in clinical awareness.

AP is classified as mild, moderate and severe in the guideline published by the North American Society of Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN) [8]. Mild AP typically resolves within a week without regional or systemic involvement. Moderate AP is associated with organ dysfunction lasting less than 48 hours. Severe AP is defined as multiple organ failure that lasts longer than 48 hours [8]. Acute pancreatitis is usually mild in children [9, 10]. However, severe AP may develop in some patients with the development of regional or systemic complications. As the severity of the disease increases, the course worsens and the morbidity rate increases. In a multicenter study, children in the pediatric intensive care unit (PICU) with AP were evaluated and the majority of these children (84%) found to have developed secondary pancreatitis associated with another underlying disease [11]. In these children with secondary pancreatitis, the course of the disease was worse and the mortality rate was higher than children with primary AP [11]. In another recent study, children with AP in the PICU were evaluated; severe AP had been demonstrated in a significant proportion of children with secondary AP [5].

In a study from Turkey conducted by Sag and colleagues [12], children hospitalized due to AP were evaluated and severe pancreatitis has been shown in 17.4% of the patients with the mortality rate of 4.8%. But in this study, there was no data about the children followed up in PICU due to AP.

Aim of this study is to examine the clinical characteristics and outcome of children who developed secondary AP in a tertiary PICU in Turkey and to determine the factors affecting the course of the disease.

Material and methods

Children between one month and 18 years old hospitalized in PICU of Health Sciences University Antalya Training and Research Hospital, between September 2017 and May 2020 were examined retrospectively. Our unit provides tertiary intensive care with 12 beds, 10 mechanical ventilators (MV) and two pediatric intensive care specialists.

The study is approved by Antalya University Training and Research Hospital Clinical Investigations Ethical Committee.

AP is diagnosed in children with the presence of two of these three criteria; (i) AP related symptoms such as abdominal pain, nausea and vomiting, (ii) elevation of serum levels of lipase and/or amylase 3 times or more than the upper normal limit, (iii) presence of imaging findings consistent with acute pancreatitis [13]. Diseases causing amylase and/or lipase elevation like peptic ulcer perforation, peritonitis, intestinal obstruction, and burns were excluded. Patients who were hospitalized with the diagnosis of primary AP in the intensive care unit were also excluded.

Demographic features of the patients, duration of hospitalization in intensive care unit, primary disease causing hospitalization, other underlying diseases, duration of mechanical ventilation and nutritional status were recorded from hospital records. Also, pediatric mortality risk (PRISM) III scores were recorded within the first 24 hours of hospitalization [14]. The PRISM score shows estimated mortality rate due to disruption of normal physiology by the diseases is calculated based on different measurements including vital signs, mental status, pupil reflex, measurement of blood gases and biochemical values. Severity of acute pancreatitis is classified as mild, moderate and severe according to the guideline of NASPGHAN pancreatitis committee [8].

The data were evaluated in the SPSS 21.0 (SPSS Inc, Chicago, IL) statistical package program. As descriptive statistics, continuous

variables were presented as mean and standard deviation (SD). For comparison of two groups, Independent Two Sample t test was used for variables with normal distribution, and Mann-Whitney U test was used for variables without normal distribution. In case of more than two groups, ANOVA test was used for variables with normal distribution and Kruskal-Wallis test was used for those without normal distribution. Chi-square test was used to compare categorical variables. Spearman correlation analysis was used for correlation. A p value <0.05 was considered as statistically significant.

Results

The mean age of 77 children with secondary pancreatitis in the pediatric intensive care unit was 6.7 years and 58.4% (n=45) of them were male. 30 children (38.9%) had at least one chronic disease related or unrelated to AP. The most common underlying primary diagnosis was neurological diseases (19.5%) (Table 1).

Patients diagnosed with secondary AP had 46.7% severe, 40.2% moderate and 12.9% mild pancreatitis. The average hospital stay of the patients were 18.6±14.7 days, the duration of their stay in the PICU was 15.4±11.3 days. Duration of stay in hospital and PICU were significantly longer in children with severe pancreatitis (Table 2). Of the children who developed secondary pancreatitis in the pediatric intensive care unit, 53 (68.8%) needed MV (mean time 10.6±4.5 days). Duration of patients on MV with severe pancreatitis was longer than that of mild and moderate pancreatitis. Although initiation of enteral nutrition in children with moderate and severe pancreatitis was later than the mild pancreatitis, the difference was not statistically significant. Children with severe pancreatitis received more intravenous nutrition (Table 2).

The mean PRISM III score of the children with acute pancreatitis in the intensive care unit was 17.3±8.9. The PRISM III score of patients with severe pancreatitis was higher than with moderate and mild pancreatitis (Table 2). There was a positive relationship between the severity of acute pancreatitis and the PRISM III score (r=0.54, p<0.01).

Fifteen patients (19.4%) died in this period. The primary diagnosis of these children was respiratory failure in five (34.7%), shock in three (20%), motor vehicle accident in three (20%), sepsis in two (13.3%), heart failure in one (6.7%) and epilepsy in one (6.7%). Children who died had a higher PRISM III score than children who survived (20.8±9.3 and 12.4±5.7, p=0.01, respectively).

Table 1. Primary diseases of patients developed secondary pancreatitis

Secondary acute pancreatitis (n=77)		
Primary diagnosis, n (%)	**Individual diagnosis, n (%)**	**Associated chronic diseases, n (%)**
Infectious diseases, 7 (9.1)	Bacteremia and sepsis, 7 (9.1)	Cerebral palsy, 11 (14.3)
Respiratory disorders, 14 (18.2)	Respiratory failure, 7 (9.1)	Developmental disorders, 4 (5.2)
	Pneumonia, 7 (9.1)	Seizure, 5 (6.5)
Cardiovascular diseases, 11 (14.3)	Shock, 8 (10.3)	Metabolic diseases, 3 (3.9)
	Cardiac failure, 3 (3.9)	Muscular dystrophy, 4 (5.2)
Neurological diseases, 15 (19.4)	Epilepsy, 15 (9.4)	Congenital cardiac diseases, 3 (3.9)
Endocrinological diseases, 2 (2.5)	Diabetic ketoacidosis, 2 (2.5)	
Gastrointestinal diseases, 1 (1.3)	Gastrointestinal bleeding, 1 (1.3)	
Renal diseases, 13 (16.9)	Hemolytic uremic syndrome, 5 (6.5)	
	Acute renal failure, 6 (7.8)	
	Acute tubular necrosis, 2 (2.5)	
Trauma/intoxication, 14 (18.2)	Traffic accident, 8 (10.3)	
	Traumatic brain damage, 3 (3.9)	
	Toxic substance ingestion, 3 (3.9)	

Table 2. Distribution of the patients according to the severity of the pancreatitis

	Mild pancreatitis (n=10)	Moderate pancreatitis (n=31)	Severe pancreatitis (n=36)	*p* value
Total days of hospitalization, mean±SD	9.8±4.3	12.9±8.4	21.5±13.6	**<0.01**
Hospitalization day in the PICU, mean±SD	5.2±3.6	9.7±6.1	18.7±12.4	**<0.01**
Number of patients on mechanical ventilation, n (%)	3 (20.0)	21 (67.7)	29 (80.5)	**<0.01**
Duration of mechanical ventilation, mean±SD	1.8±0.9	6.5±3.2	14.6±8.7	**<0.01**
The day enteral feeding started, mean±SD	1.1±0.7	2.8±1.4	3.9±3.1	0.09
Number of patients started enteral feeding before the third day, n (%)	10 (100.0)	26 (83.8)	27 (75.0)	0.42
Number of patients started enteral feeding in the first week, n (%)	10 (100.0)	31 (100.0)	33 (91.6)	0.62
Number of patients given parenteral nutrition, n (%)	1 (10.0)	12 (38.7)	21 (58.3)	**0.02**
PRISM III score, mean±SD	10.5±4.2	13.2±5.3	21.5±8.9	**<0.01**

PICU: pediatric intensive care unit; PRISM: pediatric mortality risk
[a] In comparison of the groups, for continuous variables, ANOVA test was used for variables with normal distribution, Kruskal-Wallis test for those not showing normal distribution, and chi-square test for categorical variables

Discussion

In our study, children who developed secondary pancreatitis in PICU were evaluated retrospectively. According to our results, (i) severe pancreatitis developed in the majority of these children, (ii) severity of secondary pancreatitis positively correlated with the PRISM III score, (iii) children with severe pancreatitis have longer duration of intensive care and hospitalization, (iiii) patients with severe pancreatitis spent more time on mechanical ventilation.

It has been shown previously that AP had a mild course in the majority of the cases in children [9, 10, 12]. The course of the disease is better in children than in adults, and mortality due to AP is less than 10% in children [1, 9, 10]. However, Goday et al. [11] have shown children with secondary pancreatitis had more severe disease than with primary pancreatitis in PICU. On the other hand, in the study of Cole et al. [5], severe pancreatitis had been observed in 50% and 81% of the children with primary and secondary pancreatitis respectively. In our study, we have found out that severe pancreatitis was more common in patients with secondary AP. In addition, children with severe AP had higher PRISM III scores.

Severe pancreatitis is defined as the presence of regional complications such as pseudocyst formation or systemic complications such as organ failure. However, it is difficult to determine if the organ deficiencies in children developed as a result of AP in both our study and previous studies. Circulatory or renal deficiencies in our patients may also be developed due to multisystemic diseases.

In the study of Goday et al. [11] the mortality rate in children with primary and secondary pancreatitis had been shown to be 0.3% vs 6.8% respectively. Cole et al. [5] also had demonstrated a total mortality rate of 18.5% in children with AP in PICU while this rate was 23.8% in secondary pancreatitis. Similarly, in our study, the mortality rate in children with secondary AP was 19.4%. However, it is difficult to assess the deaths associated only with secondary AP. Because, a significant portion of our mortality were children with respiratory failure and shock. These children also had higher PRISM III scores compared to surviving children. For this reason, the cause of death in these children may be due to the underlying medical condition rather than AP.

Another result of our study was that the severe AP was more common in patients with MV. Mechanical ventilation, especially high positive end-expiratory pressure (PEEP), may increase intrathoracic pressure and cause a decrease in venous return [15]. This decrease in venous return may cause hypotension by decreasing cardiac output and decreased

internal organ blood flow. Mechanical ventilation also causes sympathetic activation, because of which renin-angiotensin-aldosterone activation occurs and catecholamine levels increase [16]. Pro-inflammatory cytokines can affect many organs and trigger some biochemical events. This uncontrolled process can cause excessive activation of the inflammatory cascade and overproduction of proinflammatory mediators and end organ damage [17, 18]. As a result of all these mechanisms, ischemic damage occurs in the pancreas and this may explain the more severe course of pancreatitis in patients with MV.

Another important point affecting the frequency of severe pancreatitis in patients with MV might be that intubated patients frequently receive sedation, as a result of which they are unable to specify the presence and the location of the abdominal pain. Therefore, mild pancreatitis may be underdiagnosed by healthcare professionals. We think that the actual secondary AP frequency in the PICU may be higher than diagnosed.

Intravenous fluid therapy is the basis of AP therapy to prevent hypovolemia. Hypovolemia causes the impairment of the microcirculation of the pancreas, and increment of capillary permeability and formation of microthtombuses. Fluid therapy while correcting hypovolemia also provides adequate perfusion, prevents possible microthrombus formation and thereby prevents complications and helps to maintain pancreatic microcirculation. The introduction of enteral nutrition maintains the integrity of the mucosa, protects the microbiota and prevents bacterial translocation. For this reason, it is recommended to start enteral feeding early in adults to decrease AP complications and increase survival [19, 20]. For children with pancreatitis, early enteral feeding is recommended in mild cases [21], while there is no sufficient data in severe cases. In the study of Abu El Haija et al. [22] early enteral feeding has been shown not to increase abdominal pain and affect the length of hospital stay and to be feasible in children with AP. However, they did not include the children with severe AP. Carreazo et al. [23] reported that two children with severe AP in the PICU were successfully treated with nasojejunal nutrition. However, it is uncertain whether early enteral feeding in children with severe AP can prevent complications. In our study early enteral feeding was initiated in children with mild and moderate AP but not with severe AP.

Although this is the first study in Turkey evaluating the children with secondary AP in PICU, there are some limitations. First this is a retrospective study. Second, the study is single-center with a relatively small sample size. In addition, AP may be underdiagnosed especially in children with MV because they cannot define pain to alert the health care professionals for the laboratory studies and / or radiographic imaging.

In conclusion, although AP is mild in children, secondary AP is often severe and has a high mortality rate in children in the PICU. Mortality rate might be often related to the underlying condition. Secondary AP might be underdiagnosed especially in patients with poor general condition on MV, since they cannot explain the abdominal pain. For this reason, these children should have a careful physical examination. In the case of abdominal pain, AP diagnosis can be made easily by laboratory tests.

Conflict of interest: No conflict of interest was declared by the authors.

References

1. Pant C, Deshpande A, Olyaee M, et al. Epidemiology of acute pancreatitis in hospitalized children in the United States From 2000-2009. PLoS One 2014;9:e95552. https://doi.org/10.1371/journal.pone.0095552
2. Suzuki M, Sai JK, Shimizu T. Acute pancreatitis in children and adolescents. World J Gastrointest Pathophysiol 2014;5:416-426. https://doi.org/10.4291/wjgp.v5.i4.416
3. 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;39:5-8. https://doi.org/10.1097/MPA.0b013e3181baac47
4. Lopez MJ. The changing incidence of acute pancreatitis in children: a single-institution perspective. J Pediatr 2002;140:622-624. https://doi.org/10.1067/mpd.2002.123880
5. Cole S, Wakeham M, Werlin S, Goday SP. Classification and nutrition management of acute pancreatitis in the pediatric intensive care unit. J Pediatr Gastroenterol Nutr 2018;67:755-759. https://doi.org/10.1097/MPG.0000000000002147
6. Park A, Latif SU, Shah AU, et al. Changing referral trends of acute pancreatitis in children: a 12-year single-center analysis. J Pediatr Gastroenterol Nutr 2009;49:316-322. https://doi.org/10.1097/MPG.0b013e31818d7db3

7. Srinath AI, Lowe ME. Pediatric pancreatitis. Pediatr Rev 2013;34:79-90. https://doi.org/10.1542/pir.34-2-79
8. Abu El Haija M, Kumar S, Szabo F, et al. Classification of acute pancreatitis in the pediatric population: clinical report from the NASPGHAN pancreas committee. J Pediatr Gastroenterol Nutr 2017;64:984-990. https://doi.org/10.1097/MPG.0000000000001583
9. Kandula L, Lowe ME. Etiology and outcome of acute pancreatitis in infants and toddlers. J Pediatr 2008;152:106-110. https://doi.org/10.1016/j.jpeds.2007.05.050
10. Werlin SL, Kugathasan S, Frautschy BC. Pancreatitis in children. J Pediatr Gastroenterol Nutr 2003;37:591-595. https://doi.org/10.1097/00005176-200311000-00017
11. Goday PS, Wakeham M, Kuhn EM, Collins MM, Werlin SL. Acute pancreatitis in the pediatric intensive care unit. J Pediatr Gastroenterol Nutr 2015;61:108-112. https://doi.org/10.1097/MPG.0000000000000780
12. Sag E, Kaya G, Bahat Ozdogan E, et al. Acute pancreatitis in children: a single center experience over ten years. Turk J Pediatr 2018;60:153-158. https://doi.org/10.24953/turkjped.2018.02.006
13. Morinville VD, Husain SZ, Bai H, et al. Definitions of pediatric pancreatitis and survey of present clinical practices. J Pediatr Gastroenterol Nutr 2012;55:261-265. https://doi.org/10.1097/MPG.0b013e31824f1516
14. Pollack MM, Patel KM, Ruttimann UE. PRISM III: an updated pediatric risk of mortality score. Crit Care Med 1996;24:743-752. https://doi.org/10.1097/00003246-199605000-00004
15. Steingrub JS, Tidswell M, Higgins TL. Hemodynamic consequences of heart-lung interactions. J Intensive Care Med 2003;18:92-99. https://doi.org/10.1177/0885066602250369
16. Tanaka S, Sagawa S, Miki K, Claybaugh JR, Shiraki K. Changes in muscle sympathetic nerve activity and renal function during positive-pressure breathing in humans. Am J Physiol 1994;266:1220-1228. https://doi.org/10.1152/ajpregu.1994.266.4.R1220
17. Manjuck J, Zein J, Carpati C, Astiz M. Clinical significance of increased lipase levels on admission to the ICU. Chest 2005;127:246-250. https://doi.org/10.1378/chest.127.1.246
18. Serrano N. Increased lipase plasma levels in ICU patients: when are they critical? Chest 2005;127:7-10. https://doi.org/10.1378/chest.127.1.7
19. Mirtallo JM, Forbes A, McClave SA, et al. International consensus guidelines for nutrition therapy in pancreatitis. JPEN J Parenter Enteral Nutr 2012;36:284-291. https://doi.org/10.1177/0148607112440823
20. Lodewijkx PJ, Besselink MG, Witteman BJ, et al. Nutrition in acute pancreatitis: a critical review. Expert Rev Gastroenterol Hepatol 2016;10:571-580. https://doi.org/10.1586/17474124.2016.1141048
21. Abu El Haija M, Kumar S, Quiros JA, et al. Management of acute pancreatitis in the pediatric population: a clinical report from the north american society for pediatric gastroenterology, hepatology and nutrition pancreas committee. J Pediatr Gastroenterol Nutr 2018;66:159-176. https://doi.org/10.1097/MPG.0000000000001715
22. Abu El Haija M, Wilhelm R, Heinzman C, et al. Early enteral nutrition in children with acute pancreatitis. J Pediatr Gastroenterol Nutr 2016;62:453-456. https://doi.org/10.1097/MPG.0000000000001013
23. Carreazo NY, Ugarte K, Bada C. When should we start oral intake in children with severe acute pancreatitis? Evid Based Med 2008;13:4-5. https://doi.org/10.1136/ebm.13.1.4

Ethics committee approval: The study is approved by University of Health Sciences Antalya Training and Research Hospital Clinical Investigations Ethical Committee (date: 13.08.2020; no: 12/16).

Contributions of the authors to the article

U.A., İ.A.I. and A.A. have constructed the main idea and hypothesis of the study. U.A., İ.A.I., H.S.K. and E.A.O. have developed the theory and edited the material and method section. U.E.A. and İ.A.I have made the evaluation of the data in the results section. Discussion section of the article is written, reviewed, corrected and approved by İ.A.I., U.E.A., A.A., H.S.K. and E.A.O. In addition, all authors discussed the entire study and approved the final version.

Araştırma Makalesi *Research Article*

Pamukkale Tıp Dergisi
Pamukkale Medical Journal

doi:https://dx.doi.org/10.31362/patd.952835

Denizli 112'de çalışan sağlık personelinin afete hazırlık durumlarının değerlendirilmesi

Evaluation of disaster preparedness status of health personnel working in Denizli 112

Yasevil Fulya Tan, Nurhan Meydan Acımış

Gönderilme tarihi:15.06.2021 Kabul tarihi:27.10.2021

Öz

Amaç: Denizli 112'de çalışan sağlık personelinin afete hazırlık durumlarını, bazı ilişkili etmenlerle ortaya koymaktır.

Gereç ve yöntem: Kesitsel nitelikte analitik bir araştırmadır. Araştırmanın evreni Denizli 112'de 410 kişilik sağlık personelinden oluşmaktadır. Evrenin %87'sine (358) ulaşılmıştır. Bağımlı değişken olan genel afete hazırlık ölçeği ile afete hazırlık düzeyleri 45 sorudan oluşan anket ile değerlendirilmiştir. SPSS 11.0 ile yapılan analizlerde kikare testi, korelasyon analizi, lineer regresyon analizi kullanılmıştır. Doktorlar ve afet broşürlerini okuyanlar daha yüksek afet hazırlığı seviyelerine sahipti.

Bulgular: Denizli 112'de sağlık çalışanlarına uygulanan anketi yanıtlayanların sayısı 358 kişidir. Sağlık personellerinin yaş ortalaması 32,30±8,14; ortancası 30,00, minimum 20, maksimum 61'dir. Genel afete hazırlık ölçeği toplam puanı etkileyen etmenleri incelediğimizde; mesleği doktor olanların (p=0,032), afet konulu herhangi bir kitap veya broşür okuyanların (p=0,001), mezun UMKE temel eğitimini alanların (p=0,015) afetlere hazır olma durumları daha yüksek saptanmıştır. Çalışmamızda genel afet hazırlık düzeyine etki eden etmenleri incelediğimiz regresyon analizinde (R^2=0,04) değeri %4 olarak saptanmıştır.

Sonuç: Çalışmaya katılan Denizli 112'de sağlık çalışanlarının afete hazırlık durumları değerlendirilmiş, afet hazırlık düzeyleri orta düzeyin üzerinde bulunmuştur. Afet durumlarında aktif çalışan sağlık personelleri için orta düzeyin üstü yeterli olmayıp arttırılması gerektiği düşünülmektedir.

Anahtar kelimeler: Afet, afete hazır olma, 112, acil sağlık hizmetleri.

Tan YF, Meydan Acımış N. Denizli 112'de çalışan sağlık personelinin afete hazırlık durumlarının değerlendirilmesi. Pam Tıp Derg 2022;15:107-115.

Abstract

Purpose: To reveal the disaster preparedness of the health personnel working in 112 with some related factors.

Materials and methods: This is a cross-sectional analytical study. The population of the study consists of 410 health personnel in Denizli 112. 87% (358) of the universe has been reached. General disaster preparedness scale, which is the dependent variable, and disaster preparedness levels were evaluated with a questionnaire consisting of 45 questions. In the analyses performed with SPSS 11.0, chi-square test, correlation analysis, linear regression analysis were used. Doctors and those who read disaster leaflets had higher levels of disaster preparedness.

Results: The number of respondents to the questionnaire applied to Denizli 112 healthcare workers was 358. 46.6% of the healthcare personnel are male and the average age is 32.30±8.14, the median is 30.00, minimum 20, maximum 61. When we examine the factors affecting the total score of the general disaster preparedness scale; Those who were physicians by profession (p=0.032), read any book or brochure about disaster (p=0.001), graduated from UMKE basic education (p=0.015) were found to have higher levels of disaster preparedness compared to the disaster preparedness scale. In the regression analysis (R^2=0.04) in which we examined the factors affecting the level of general disaster preparedness in our study, its value was found to be 4%.

Conclusion: The disaster preparedness status of the healthcare workers in Denizli 112 participating in the study was evaluated, the disaster preparedness levels were found to be above the medium level, it is thought that above medium level is not sufficient for healthcare professionals working actively in disaster situations and should be increased

.

Key words: Disaster, disaster preparedness, 112, emergency health services.

Tan YF, Meydan Acimis N. Evaluation of disaster preparedness status of health personnel working in Denizli 112. Pam Med J 2022;15:107-115.

Yasevil Fulya Tan, Bilim Uzm. Denizli İl Ambulans Servisi Başhekimliği, Denizli, Türkiye, e-posta: yasevilturkkan@hotmail.com (https://orcid.org/0000-0001-6641-9339) (Sorumlu Yazar)

Nurhan Meydan Acımış, Doç. Dr. Pamukkale Üniversitesi Tıp Fakültesi Halk Sağlığı Anabilim Dalı, Denizli, Türkiye, e-posta: nmeydanacimis@pau.edu.tr (https://orcid.org/0000-0001-9616-1033)

Giriş

Afet ‘‘Toplumun tamamı veya belli kesimleri için fiziksel, ekonomik ve sosyal kayıplar doğuran, normal hayatı ve insan faaliyetlerini durduran veya kesintiye uğratan, etkilenen toplumun baş etme kapasitesinin yeterli olmadığı doğa, teknolojik veya insan kaynaklı olay’’ olarak tanımlanmaktadır [1]. Küresel çağ ile birlikte afete bağlı can ve mal kayıpları çoğunlukla yaşanılan olaylardır. Hızlı nüfus artışı ve kentleşme, doğası bozulan çevre, iklimdeki farklılıklar, kaos, çatışmalar, terör ve savaş gibi nedenlerle ilerleyen çağlarda da giderek büyümesi beklenen sorun olacaktır [2]. Afet, etkileme alanında yaşam bulunması sebebiyle sosyolojik sorun olarak değerlendirilir. Afet savunma kapasitesi bulunmayan kişilere ilişkin tehlike oluştur ve toplumun afet karşısında tepkisine göre zararın düzeyi değişir [3].

Afetlerin meydana gelmesi ile buna maruz kalan toplumun tüm bireyleri farklı derecelerde zarar yaşamaktadır. Afet zararlarının düzeyini etkileyen birçok etmen bulunmaktadır. Afet konusunda yapılmış olan birçok araştırmanın bakışı bu paydada birleşmektedir [4]. Afetin zarar verici hallerini en alt seviyede tutmak için toplumun afetler konusunda bilinçlendirilmesi gerekmektedir. Toplumun her basamağının, bilinçlendirilmesi çalışmalarının ne kadar zor olduğu bilinmektedir [5]. Afetlerde ilk saniyelerinde bireyler kendisiyle baş başadır; kişinin afet konusuyla ilgili bilgisi afeti içselleştirmesi ve bireysel farkındalığı kişiyi afetin zararlı etkilerinden kişiyi koruyacaktır çünkü dünyanın en gelişmiş ülkesinde dahi afet ve sağlık ekiplerinin tüm bireylere anında müdahale etme şansı yoktur [6]. Afet hazırlık ve uygulama çalışmalarına sokaktaki tüm bireylerin etkin katılımıyla zararın en aza indiği görülmektedir. Afet eğitimi toplumda yaşayan her bireyin afete hazırlıklı bireyler olması adına önemlidir. Doğal afetlerde son durum konuya olan ilgiyi arttırdığı görülmektedir [4]. Ancak afetle ilgili çalışmalar tüm dünyada halen yetersiz kalmakta ve tüm ülkeyi kapsayan ‘‘acil durumlara/afetlere bireysel hazırlık yapma’’ üzerinde çalışma bulunmamaktadır. Ülkemizde genel olarak hastane ve kamu kurumlarında “Hastane Afet Planı” (HAP) bazlı çalışmalar veya sıcak alanlarda çalışan gruplara yapılan araştırmalar dışındaki araştırmalar yetersiz kalmaktadır. Bu çalışmaların uygulamaları ise masa başında doküman şeklinde ve uzun dönemlerdeki veriler halindedir [7]. Afet halinde insanların etkilenme dereceleri en aza indirgemek toplum bilincinin arttırılması ile sağlanır. Bunun için en yarar sağlayıcı yöntem eğitimdir [5]. Ayrıca zararların (finans, nüfus, yerleşim, tabiat vb.) azaltılması ve kabul edilebilir düzeyde olması için eğitim gerekmektedir [8]. Afetler doğal ve beşeri olarak iki boyutta incelenir, Türkiye’de en fazla yaşanan doğal afet %45 heyelan, %18’ini deprem, %14’ünü su baskını, %10’unu kaya düşmesi oluşturmaktadır. Heyelan en sık görülen afet türü olmasına rağmen, en çok zarara uğratma oranı %55 depremdir [9]. Bu oranlar eğitim konuları için önemlidir [9]. Toplum bireylerinin yaşadıkları coğrafyada doğal sebepli vakalardan haberdar olması, oluşan bu vakaları nedenleri ile tanımlayabilmeleri ve yaşanan afetlerin tekrar yaşanması durumunda etkilenmeyi azaltmasına ya da çok az oranda etki oluşturulmasına imkan sağlayan programlı çalışmalar olması gereklidir; bu proğramlara da “Afet Yönetimi” tanımı kullanılmaktadır [10]. Bu çalışmadaki amaç; Denizli 112’de çalışan sağlık personelinin afete hazırlık düzeylerini, bazı ilişkili etmenlerle saptamaktır.

Gereç ve yöntem

Bu araştırma analitik kesitsel araştırmadır. Araştırmanın evrenin Denizli 112’de bulunan 410 kişilik çalışan sağlık personelleri oluşturmaktadır. Evreni oluşturan 410 kişinin tümüne ulaşılması amaçlanmış, 385 kişiye çalışma anketi uygulamaya koyulmuş, evrenin %87’sine (358) ulaşılmıştır. Araştırmaya dahil edilme kriterleri, araştırma süresince Denizli il Ambulans servisinde araştırma süresince aktif çalışan (doktor, ATT, AABT, sağlık memuru, hemşire, ebe, şöför) ve araştırmayı kabul eden sağlık personelleridir. Araştırmadan dışlanma kriterleri: gebelik izni, askerlik durumu, sağlık raporu nedeniyle araştırmaya katılamayan ve katılmayı kabul etmeyen sağlık personelleri idi. Araştırma çalışması 02 Eylül-07 Ekim 2019 tarihleri arasında gerçekleştirilmiştir. Veri toplama hedeflenerek; Sosyo Demografik özellikleri içeren anket Formu ve ‘‘Sağlık İnanç Modeli’’ ne dayalı Acil Durumlara/ Afetlere Bireysel Hazırlığa İlişkin Ölçek Taslağı kullanılmıştır.

Araştırmanın bağımlı değişkeni: Afetlere hazırlık durumu, Denizli 112’de çalışan personellerin afete hazırlık düzeyleri 45 sorudan oluşan anket ile değerlendirilmiştir.