Sudden Suspected Death in Emergency Department: Autopsy Results

Acil Servisteki Ani, Şüpheli Ölümler: Otopsi Sonuçları

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SUMMARY

Objectives

Sudden deaths occur within 24 hours after symptoms' onset and are caused by cardiac, neurological and pulmonary diseases. Autopsy is the gold standard in determining cause of death. In this study, death's etiology was evaluated in cases applied to our department that underwent autopsy with sudden death indication.

Methods

This study included cases aged 18 or older with sudden, suspected, non-traumatic death applying to our department between 2008 and 2012. Patients' age, sex, death time, co-morbid diseases, initial signs, cardiac rhythm, and autopsy findings were recorded after reviewing patient charts.

Results

The study included 46 patients. Mean age was 45.73±19.6. Of the cases, 84.78% applied to emergency with cardiopulmonary arrest. Thirty-two cases (69.6%) were male. The most frequent cause of death was cardiovascular diseases (52.2%), followed by central nervous system disorders (21.7%), intoxications (15.2%), and respiratory diseases (10.9%). The most common diseases were myocardial infarction (45.7%), subarachnoid hemorrhage (8.7%), and chronic obstructive pulmonary disease. There were three drug ingestions, three carbon monoxide intoxications, and one corrosive material ingestion among the intoxication cases.

Conclusions

Sudden deaths are rarely encountered. Emergency clinicians should consider cause in differential diagnosis and provide appropriate approaches at first evaluation.

Key words: Autopsy; emergency service; sudden death.

ÖZET

Amaç

Ani ölümler semptomlar başladıktan sonra 24 saat içerisinde oluşur. En yaygın nedenleri kardiyak, nörolojik ve pulmoner hastalıkları içerir. Otopsi bu ölümlerin nedenini tespit etmede altın standarttır. Bu çalışmada acil servisimize başvuran ani ölüm olgularının otopsi bulgularına göre ölüm nedenlerini değerlendirdik.

Gereç ve Yöntem

Bu retrospektif çalışmaya 2008-2012 yılları arasında acil servisimize başvuran, yaşları 18 ve üzeri olan, nontravmatik, ani, şüpheli ölüm vakaları alındı. Hastaların dosyaları incelenerek yaşları, cinsiyetleri, ölüm zamanı, bilinen hastalıkları, semptomlar başladıktan sonra geçen zaman, başvuru anındaki şikayeti, vital bulguları ve otopsi sonucu kaydedildi.

Bulgular

Çalışmaya 46 hasta alındı. Ortalama yaş 45.73±19.6 idi. Vakaların % 84.78' i acil servise geldiğinde kardiyopulmoner arestti. 32 vaka (%69.6) erkekti. Ölümün en yaygın nedeni kardiyovasküler hastalıklardı (%52.2). Bunu nörolojik hastalıklar (%21.7), intoksikasyonlar (%15.2) ve solunum sistemi ile ilgili hastalıklar (%10.9) izledi. En sık gözlenen hastalıklar miyokard infarktüsü (%45.7), subaraknoid kanama (%8.7) ve kronik obstrüktif akciğer hastalığı (%6.6) idi. İntoksikasyon vakalarının üçü ilaç alımı, üçü karbonmonoksit zehirlenmesi, biri koraziv madde içimiydi.

Sonuç

Bu kritik hastaları ilk değerlendiren hekim olan acil servis doktorları, ölümlerin altında yatan nedenlerin ayırıcı tanısını yapmalı ve uygun tedavi yaklaşımını uygulamalıdır. Ani ölümlerin en sık nedeni kardiyovasküler hastalıklar olmakla birlikte acil serviste diğer nedenler de göz önünde tutulmalıdır.

Anahtar sözcükler: Otopsi; acil servis; ani ölümler.

Introduction

The World Health Organization (WHO) definition of sudden death, a significant health problem is "death, occurring less than 24 hours from the onset of sudden changes in previous clinical condition".[1,2] Sudden deaths are non-traumatic deaths.[1] Autopsy should be performed in order to understand the cause of death in patients who die suspiciously and unexpectedly.[2-4] Emergency rooms (ER), a significant entry to hospitals for the critically ill patients, play a crucial role in the treatment and health care of these patients. Management of these patients, who are brought to hospital with a life-threatening condition or with cardiopulmonary arrest, is difficult, and finding the underlying cause and treatment for that cause is challenging. Previous medical history of the patient could be unknown by the health team and family members of the patient who brought him/her to emergency room, or patient may not have a relative with him/her and this could be his/her first admittance to a hospital. In this circumstance, preexisting diseases of the patient are not disclosed. Most of these patients suffer cardiopulmonary arrest when they are brought to emergency room and a detailed medical history cannot be obtained because the event occurs suddenly and because of absence of eyewitness or family members witnessing the event.[5] We therefore believe that determining the cause of sudden, unexpected deaths in emergency rooms is important in management of the critically ill patients admitted to emergency department.

The purpose of this study was to determine cause of death according to autopsy findings in patients who were brought to our emergency department and who died suddenly, unexpectedly, and non-traumatically.

Materials and Methods

Patients who died within 24 hours, were brought to our emergency department with cardiopulmonary arrest, did not have trauma marks in the body, and whose cause of death cannot be determined during the intervention in ER, as well as non-traumatic cases who died a short time after being admitted to the ER before a diagnoses could be made, were determined to have suffered from sudden, suspicious death. All patients in the study were 18 and over at the time of death. Medical records of the cases who were diagnosed as sudden suspicious death between 2008 and 2012 were analyzed retrospectively. Cause of death in these cases were recorded according to autopsy results. Prior to study, approval was obtained from Fırat University ethical committee. Traumatic deaths and cases who were diagnosed during emergency intervention were excluded.

Statistical Analysis

Data obtained were transferred to SPSS 17.0 (Statistical Package for Social Science) program. Chi Square Test was used for statistical analysis of the data and they were evaluated in 95% confidence interval. A p value < 0.05 was considered statistically significant, and the average of data complying with normal distribution was given as arithmetic mean ± standard deviation.

Results

During the five-year-period, 231 patients died in the ER. Among these cases, 46 (19.91%) were considered as sudden and suspicious death. The average age of the cases was 45.73±19.68 (min:18-max:92) and 69.6% were male. Thirty-nine cases (84.78%) were brought to emergency department as cardiopulmonary arrest. The average time of stay in the emergency department was 41.95±23.65 minutes (min:10-max:120 min.). According to autopsy reports, most common cause of death was cardiovascular disease (52.2%), followed by central nervous system diseases (21.7%), intoxications (15.2%), and respiratory diseases (10.9%) (Figure 1).

The most common disease was acute myocardial infarction (AMI) (n=20) among the cardiovascular diseases (n=24). This was followed by valve diseases (n=2), aortic dissection (n=1) and pulmonary emboli (n=1). One of the cases with valve disease was pregnant and had aortic stenosis, the other had mitral valve insufficiency.

Among central nervous system diseases (n=10), most common was subarachnoid hemorrhage (SAH) (n=4), followed by intracranial bleeding (n=2), asphyxia due to epileptic seizure (n=2), ischemic stroke (n=1), and meningitis (n=1).

Seven of the cases were intoxication patients. One of these cases took tricyclic antidepressant drug, one case took narcotic substance, one case took benzodiazepine, beta block-
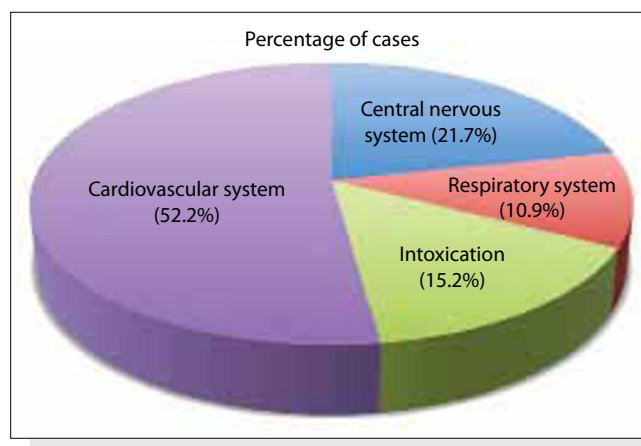
Figure 1. Distribution of cases according to causes of death.