Mantar Zehirlenmesi ile Acil Servise Başvuran Vakaların Retrospektif İncelemesi

[Retrospective Investigation of Case Attending Emergency Department with Mushroom Poisoning]

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Özet

Mantar zehirlenmeleri, acil servislerde başvurulara neden olan önemli bir halk sağlığı sorunudur. Yetişkinlerde görülen tüm akut zehirlenme olgularının yaklaşık olarak %7'sini mantar zehirlenmeleri oluşturmaktadır. Mantarın cinsine göre, klinik tablo, bulantı kusma gibi gastrointestinal sistem şikayetlerinden karaciğer yetmezliğine hatta ölüme kadar değişiklik göstermektedir. Çalışmada, Ocak-Aralık 2021 tarihleri arasında bir üniversite hastanesi erişkin ve çocuk acil servislerine mantar zehirlenmesi nedeni ile başvuran 42 vaka retrospektif olarak değerlendirildi. Vakaların %38.2'sinin yetişkin erkek hastalardan, %33.3'ünün 18 yaş altı çocuklardan oluştuğu ve acil servis başvurularının %52.4'ünün yaz aylarında olduğu saptandı. Çalışmada, 22 olguda (%52.3) bulantı ve kusma, 8 olguda (%19) ishal en sık görülen geliş şikayetleri idi. Vakaların büyük çoğunluğunda (%90.4) semptomatik tedavi sonucu sekelsiz iyileşme görüldü. Sonuç olarak, çalışmanın yapıldığı il ve çevresindeki mantar zehirlenmelerinin genellikle 18 yaş altı çocuklar ile erişkin erkeklerde ve yaz aylarında gerçekleştiği ve çoğunlukla iyileşme sağlandığı saptandı. Mantar zehirlenmesinde halkın bilinçlendirilmesi en iyi tedavidir. Bu nedenle halkın zehirli mantarlar konusunda uyarılması ve zehirlenme bulguları ve bulgular görüldüğünde vakit kaybetmeden hastaneye başvurmaları konusunda bilinçlendirilmesi mortalitenin azaltılmasında önemlidir.

Abstract

Efforts Mushroom poisoning is a significant public health that causes applications in emergency departments. Mushroom poisonings constitute approximately 7% of all acute poisoning cases in adults. Depending on the type of fungus, the clinical picture varies from gastrointestinal system complaints such as nausea and vomiting to liver failure and even death. In the study, 42 cases who applied to a university hospital's adult and pediatric emergency services due to mushroom poisoning between January and December 2021 were evaluated retrospectively. It was determined that 38.2% of the cases were adult male patients, 33.3% were children under 18, and 52.4% of the emergency service admissions were during the summer months. In the study, the most common presenting complaints were nausea and vomiting in 22 cases (52.3%) and diarrhea in 8 cases (19%). In most cases (90.4%), recovery was observed without sequelae due to symptomatic treatment. As a result, it was determined that the mushroom poisonings in and around the province where the study was conducted generally occur in children under 18 years of age and adult men in the summer months, and mostly recovery is achieved. Public awareness is the best treatment for mushroom poisoning. For this reason, it is essential to warn the public about poisonous mushrooms, raise awareness about poisoning signs, and apply to the hospital without delay when they are seen.

Mushrooms are a prevalent food source in nature, frequently consumed and commercially important today. Many types of wild or field mushrooms are considered palatable in some cultures/countries. However, many mushrooms can be poisonous when consumed, and distinguishing between "edible" and poisonous species is often difficult. Additionally, some “edible” species can be toxic to some people in unforeseen circumstances. In our country,

mushroom-related poisoning is seen as a result of unconsciously collecting and consuming mushrooms that grow in rural areas and gardens with rains in spring months. More than 5,000 species of mushrooms are known worldwide, of which only 200-300 have been determined to be safely edible, while 50-100 are known to be poisonous, and most other species are known to be toxic. The profile has not been investigated.[1] Although it varies according to geographical regions, it is reported that Amanita-type mushrooms containing amatoxin are responsible for 90% of all mushroom poisoning and contain toxins that cause cellular destruction.[2]

Poisonous mushrooms contain different toxins. The main categories of fungal toxins include protoplasmic poisons that cause cell destruction and subsequent organ failure, neurotoxins that cause neurological symptoms such as coma, convulsions, and hallucinations, and gastrointestinal irritants that cause nausea, vomiting, abdominal cramps, and diarrhea.[3,4] Depending on the type, poisonous mushroom consumption can cause a variety of clinical signs and symptoms, from mild gastrointestinal disturbances to organ failure and even death.[5] Mushroom poisoning is divided into two, depending on the time (delay) from ingesting mushrooms to the onset of the first poisoning symptoms.[2] Patients with symptoms presenting in the early period between 30 minutes and 6 hours generally result in positive results, while more severe complications are seen in patients with symptoms occurring after six hours.[6,7] Gastrointestinal tract related to mushroom consumption Complaints may be caused not only by poisonous mushrooms but also by eating spoiled, raw, or undercooked mushrooms or by excessive or frequent consumption of mushrooms.[2]

The symptoms of mushroom poisoning usually go away within 2 to 3 days . Although short-latent mushroom poisoning is not usually life-threatening, it should not be taken lightly. Because most of the time, attention is paid only to the rapidly emerging poisoning symptoms. A short latency period does not always rule out amatoxin poisoning (think mixed mushroom dishes). For this reason, patients who have symptoms or eat mushrooms that are likely to be poisonous usually need to be observed in the hospital for at least 36 hours. When multiple cases of mushroom poisoning occur in more than one person sharing the same mushroom dish, other people should be hospitalized and monitored, even if they are not showing any symptoms.[2]

In our country, especially in spring and summer, there are frequent applications to emergency services due to mushroom poisoning. In our study, a one-year retrospective analysis of mushroom poisoning applications made to a tertiary hospital's emergency services, the patients' clinical characteristics, and their management were discussed.

MATERIAL AND METHODS

The aim of the study was to investigate the cases admitted to the emergency department with mushroom poisoning. The study was planned as a retrospective study and the cases admitted to Sivas Cumhuriyet University Emergency Department were analyzed. Retrospective file scanning from the archive was used as a data collection method. Age groups of the cases, season of poisoning, complaints, clinical findings and results were analyzed. SPSS 23.0 package program was used for statistical evaluation of the data. Number, percentage and mean ± standard deviation for continuous variables were used to analyze the descriptive characteristics of the cases.

RESULTS

It was determined that 38.2% of the cases who applied to adult and pediatric emergency services were adult males, and 33.3% were children under 18. When the age distributions are examined, it is seen that 33.3% of the patients are under the age of 18, 26.1% are in the 18-30 age group, and 21.5% are in the 31-40 age group (Table 1).

When the season they applied was examined, it was seen that 26.2% of the cases applied in the spring, 52.4% in the summer, and 21.4% in the autumn. No patient was admitted to the emergency services due to mushroom poisoning during winter. No patient knew for certain the type of fungus he was poisoned with. It was determined that 71.3% of the patients had symptoms six hours after ingesting the fungus (Table 1).

Table1. Some sociodemographic and descriptive characteristics of the patients

Introductory Features	N	%
Gender		
Female	12	28.5
Male	16	38.2
Child (under 18)	14	33.3
Age		
Under 18 years old	14	33.3
18-30	11	26.1
31-40	9	21.5
41 and above	8	19.1
Season of poisoning		
Spring	11	26.2
Summer	22	52.4
Autumn	9	21.4
Mushroom species		
Known	0	0.0
Unknown	42	100.0
Time of onset of symptoms		
<6 hours	30	71.3
>6 hours	12	28.7
Complaints about applying to the emergency department		
Nausea-vomiting	22	52.3
Diarrhea	8	19.0
Cholinergic findings	7	16.7
Neurological findings	5	12.0
Clinical course in the emergency department		
Treatment by hospitalization in the Emergency department	38	90.4
Treatment in the intensive care unit	4	9.6

The patients' epicrisis were analyzed, 52.3% of them had nausea and vomiting, 19.0% had diarrhea, 16.7% had cholinergic

findings (hypotension, tachycardia, dizziness, sweating, impaired consciousness, hallucinations), and 12.0% had neurological findings (Table 1).

When the clinical course of the patients in the emergency room was examined; 90.4% were hospitalized in the emergency observation unit for adults and in the pediatric service for children; It was determined that 9.6% of them were hospitalized in the intensive care unit, and treated and followed up (Table 1).

DISCUSSION

Although the exact incidence is unknown in Turkey, it is estimated that mushroom poisoning is common. It has been reported that mushroom poisoning is most common between the ages of 35 and 45, and most women are affected.[8,9] However, in our study, it was determined that most of the cases were men. Mushroom poisoning is an important problem for all people, women, men, or children, and it is vital to hospitalize and follow up on those who have a history of mushroom eating and findings that may be related to poisoning.

The habit of picking and eating mushrooms from forests or meadows is widespread among people with low socioeconomic status in Turkey. Especially in the spring months when the rains are heavy, mushroom poisoning resulting in death is very high due to the proliferation of mushrooms, the growth of poisonous and edible mushrooms together, and the difficulty of distinguishing them.10 Although the seasonal distribution of mushroom poisoning varies according to the region and mushroom variety, some studies report that the incidence of mushroom poisoning increases in spring and some in autumn.[10,11,12] In our study, it was determined that most of our hospital's applications to the emergency department due to mushroom poisoning were in the summer months. This shows that mushrooms grow more in autumn in our region.

The picture may be more severe in mushroom poisoning patients with late symptoms (after 6 hours) Therefore, early identification of risky cases in emergency services is critical. However, formal identification of the fungal species is complex, with accurate identification rates ranging from 10% to 27%.[7,13] In our study, detecting any fungal species was impossible. This situation can be explained by the difficulty of obtaining a mycologist's opinion.

In our study, it was determined that the majority of the patients applied to the emergency department with gastrointestinal system complaints such as nausea, vomiting, and diarrhea. Symptoms and signs that occur after mushroom ingestion vary. Each group of fungi produces their toxic effects in different ways. However, gastrointestinal Dysfunction is a common finding, regardless of the type of fungus.[14,15] In their 11-year retrospective study of cases who presented to the emergency department with mushroom poisoning, they determined that the most common symptoms were nausea, vomiting, and diarrhea, similar to our study.[7] This study determined that patients who applied to the emergency department had cholinergic and neurological symptoms after mushroom consumption. The clinical features of mushroom poisoning can mimic different pathologies. For this reason, the diagnosis may be missed if the patient does not remember that he or she has consumed mushrooms recently or does not notify the emergency room workers.[16]

In the data of the American Poison Control Center for mushroom poisoning, the death rate is reported as 0.03%, and Amanita is one of these deaths. Fungi of the genus Amanita Phalloides are held responsible.[17,18] In our study, most cases who applied to the emergency department with the complaint of mushroom poisoning were discharged after routine follow-up and treatment in the emergency department. In contrast, the others (9.6%) were treated in the intensive care unit due to liver and kidney failure and were discharged without further complications. The onset of symptoms can explain these positive results before six hours in most of the cases in our study, and fungi causing acute toxicity are rarely fatal.

Limitations

The difficulties experienced in keeping records of poisoning cases and the accompaniment of different diagnoses cause the diagnosis of poisoning to be ignored and this constitutes the limitation of the study.

CONCLUSION AND RECOMMENDATIONS

Compared to other types of poisoning in our country. Although cases of mushroom poisoning are relatively rare, they are still an important reason for admission to the emergency department. Most cases of mushroom poisoning are mild gastrointestinal. While discharged with symptomatic treatment only, serious fatal complications exist, although less frequently. Collaboration with the poison control centre and a mycologist, especially in high-risk situations, is essential in identifying the fungus and making decisions regarding patients' treatment protocols.

In addition, in solving this situation, which is a significant public health problem, informing the public about mushroom poisoning (through websites or media) and developing strategies to prevent mushroom ingestion other than cultured mushrooms; It is crucial to inform families about the signs of poisoning, to ensure that they apply to the hospital in a short time, to prevent deaths and organ failures that may arise from delayed admission.

In addition to all these, it is essential to be more meticulous in terms of retrospective analyzes of hospital records in our country and to plan in-service training so that healthcare professionals are more careful about registration. The fact that most of the poisoning cases were entered in hospitals with the diagnosis of nausea and vomiting prevents healthy data flow. However, similar problems are experienced in many diagnoses.

Ethics

Ethics Committee Approval: Approval was obtained from Cumhuriyet University Non-invasive Clinical Research Ethics Committee (Approval No: 2022-11/11; Date:16.11.2022)

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Peer-review

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Authorship Contributions

Study concept (FH), literature search (PÇ), study design (FH), data collection (PÇ), data analysis (PÇ), data interpretation (FH), writing and critical revision works (FH, PÇ)

Conflict of Interest

The authors have no conflict of interest with any person or organization regarding the data presented in the article and/or article's subject.

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