

## Analysis of Patients Consulted to the Dermatology Unit from the Emergency Department

## Acil Servisten Dermatoloji Birimine Konsulte Edilen Hastaların Analizi

## Abstract

**Objective:** Nowadays, individuals seeking medical help for dermatologic problems frequently visit emergency departments due to many factors. According to clinical studies, dermatologic problems account for 3-8% of all emergency department visits. Dermatologic diseases are not only caused by the skin itself; they can also be a symptom of different systemic diseases. Therefore, it is important for emergency physicians to have a comprehensive understanding of dermatologic emergencies. In most cases, skin diseases do not pose a serious risk to life, but patients present to the emergency department when they experience sudden onset with severe symptoms.

**Materials and Methods:** This study included patients aged 18 years and older who presented with dermatologic complaints to the emergency department of a university hospital in a city with a population of 4 million between 01.08.2021 and 01.07.2023. A total of 205 patients were analyzed. Sociodemographic data, clinical characteristics, and outcomes of patients with dermatologic complaints were recorded. Data were analyzed using the IBM SPSS Statistics program for statistical analysis.

**Results:** The ages of the patients in the study ranged from 13 to 98 years, with a median age of 49 years. The patients' female/male ratio was 57.1% to 42.9%. The most common reason for the presentation was a rash with 45.4%. 97.1% of patients presented as outpatients and 88.3% were discharged. Dermatitis was the most common diagnosis (22.9%). Length of hospitalization ranged from 0 to 77 days.

**Conclusion:** This study reveals the profile and diagnoses of patients presenting to the emergency department with dermatologic complaints. The findings may contribute to the development of more effective strategies for emergency departments to deal with dermatologic emergencies. However, the limitations of the study should also be considered and further research is needed.

**Keywords:** Dermatology, Consultation, Emergency

## Özet

**Amaç:** Günümüzde, dermatolojik sorunlar için tıbbi yardım arayan bireylerin, pek çok faktör nedeniyle acil servisleri sıklıkla ziyaret ettiği bilinmektedir. Klinik araştırmalara göre, dermatolojik sorunlar acil servise yapılan tüm ziyaretlerin %3-8'ini oluşturmaktadır. Dermatolojik hastalıklar sadece derinin kendisinden kaynaklanmaz; aynı zamanda farklı sistemik hastalıkların da belirtisi olabilir. Bu nedenle, acil servis hekimlerinin dermatolojik acil durumlar hakkında kapsamlı bir anlayışa sahip olmaları önemlidir. Çoğu durumda, deri hastalıkları yaşam için ciddi bir risk oluşturmaz, ancak hastalar şiddetli belirtilerle ani semptomlar yaşadığında acil servise başvururlar.

**Gereç ve Yöntemler:** Bu çalışma, 01.08.2021 ile 01.07.2023 tarihleri arasında 4 milyon nüfuslu bir şehirde bulunan bir üniversite hastanesinin acil servisine dermatolojik şikayetlerle başvuran 18 yaş ve üzeri hastaları içermektedir. Toplam 205 hasta incelenmiştir. Dermatolojik şikayetle başvuran hastaların sosyodemografik verileri, klinik özellikleri ve sonuçlarını kayıt altına alınmıştır. Veriler, istatistiksel analiz için IBM SPSS Statistics programında değerlendirilmiştir.

**Bulgular:** Çalışmadaki hastaların yaşları 13 ila 98 arasında değişmekte olup, ortanca yaş 49'dur. Kadın hastaların oranı %57,1 iken, erkek hastaların oranı %42,9'dur. En sık başvuru sebebi %45,4 ile döküntüdür. Hastaların %97,1'i ayaktan başvuru yapmıştır ve %88,3'ü taburcu edilmiştir. Dermatit en yaygın tanı (%22,9) olarak saptanmıştır. Hastanede yatış süreleri 0 ila 77 gün arasında değişmektedir.

**Sonuç:** Bu çalışma, acil servise dermatolojik şikayetlerle başvuran hastaların profilini ve tanılarını ortaya koymaktadır. Bulgular, acil servislerin dermatolojik acil durumlarla ilgilenmesine yönelik daha etkili stratejilerin geliştirilmesine katkı sağlayabilir. Ancak, çalışmanın sınırlamaları da göz önünde bulundurulmalı ve daha fazla araştırmaya ihtiyaç duyulmaktadır.

**Anahtar Kelimeler:** Dermatoloji, Konsültasyon, Acil

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Nowadays, individuals seeking medical help for dermatologic problems frequently visit emergency departments due to multiple factors. Based on clinical studies, it has been observed that dermatologic problems account for approximately 3-8% of all visits to the emergency department (1).

Skin diseases are potentially not only caused by the skin itself, but can also indicate different systemic diseases. Thus, a seemingly uncomplicated dermatologic problem may indeed be indicative of an underlying and potentially serious medical condition. Therefore, it is important for emergency physicians to have a comprehensive understanding of "true dermatologic emergencies". In most cases, skin conditions typically do not pose a significant risk to life, prompting patients to present to the emergency department only when they experience a sudden onset of symptoms accompanied by severe clinical signs.

It has been reported that life-threatening diseases occur in approximately 1-2% of individuals presenting to the emergency department due to dermatologic problems (2). Toxic epidermal necrolysis, autoimmune bullous dermatoses, disseminated herpes zoster infection, necrotizing cellulitis, erysipelas, toxic shock syndrome, erythroderma, angioedema, anaphylaxis, and severe drug eruptions are examples of conditions requiring emergency medical care.

When evaluating patients presenting with dermatologic complaints, it is very important to question the time of onset of the complaint, triggering factors, presence of systemic diseases, history of previous surgical operations, medications used, history of allergies, occupation, morphology of the lesion, stage of development, rate of progression, extent of spread, contact with animals and plants, and risky sexual relations. It is very important to perform a comprehensive evaluation procedure to fully understand the patient's condition and to provide the most appropriate treatment (3).

In this study, we aimed to determine the demographic characteristics, presenting complaints, time of onset of symptoms, triggering factors, identification of lesions, consultation rates, and life-threatening clinical pictures of patients who presented to the emergency department with dermatologic complaints and requested dermatology consultation.

## MATERIAL AND METHODS

Patients over the age of 18 years who presented with dermatologic complaints to the emergency department of a tertiary university hospital in a city with a population of 4 million between 01.08.2021 and 01.07.2023 were included in the study. Sociodemographic data, clinical characteristics, and outcomes of patients presenting to the emergency department with dermatologic complaints were recorded. The data obtained were recorded on a registration form and subjected to statistical analysis. Patients whose complete data could not be reached were excluded from the study. Ethics committee approval for the study was obtained by the ethics committee of the university to which the hospital was affiliated, with the date of

## Statistical method

Data were evaluated using the statistical package program IBM SPSS Statistics Standard Concurrent User V 26 (IBM Corp., Armonk, New York, USA). Descriptive statistics were presented as number of units (n), percentage (%), mean  $\pm$  standard deviation ( $\bar{x} \pm sd$ ), median (M), minimum (min) and maximum (max) values. The normal distribution of numerical variables was evaluated by Shapiro Wilk normality test and homogeneity of variances was evaluated by Levene's test. Age and length of hospitalization values were compared with Mann-Whitney U test since the data did not meet the normal distribution conditions. Pearson and Fisher exact tests were used to compare categorical variables with each other.  $p < 0.05$  was considered statistically significant.

## RESULTS

According to Table 1, patients were between 13-98 years of age. 117 (57.1%) of the patients were female. The number of patients presenting with rash was 93 (45.4%). 119 (97.1%) patients presented as outpatients. The number of patients diagnosed with dermatitis was 47 (22.9%). 181 (88.3%) of the patients were discharged. The duration of hospitalization varied between 0-77 days. All 205 (100%) patients had a survivor outcome.

According to Table 2, the patient ages were similar in outpatients and patients admitted via 112 and this value was statistically significant ( $p=0.474$ ).

The number of female patients admitted to the hospital as outpatients was 114 (97.4%) and the number of female patients admitted via 112 was 3 (2.6%). The number of male patients admitted to the hospital as outpatients was 85 (96.6%) and the number of male and female patients admitted via 112 was 3 (3.4%). There was no statistically significant difference between the mode of presentation of male and female patients ( $p > 0.999$ ).

The number of outpatients admitted to the hospital with a complaint of bleeding was 2 (66.7%) and the number of patients admitted by 112 was 1 (33.3%). Bleeding and other reasons for admission were statistically different from the other reasons for admission ( $p=0.036$ ).

The number of outpatients admitted to the hospital for unspecified soft tissue infection was 45 (95.7%) and the number of patients admitted via 112 was 2 (4.3%). Patient diagnoses were statistically similar in outpatient and 112 admissions ( $p=0.266$ ).

The number of patients whose emergency outcome was a discharge was 176 (97.2%) in outpatients and 5 (2.8%) in patients admitted via 112. The emergency outcome was statistically similar in outpatients and 112 patients ( $p=0.524$ ).

The duration of hospitalization was similar in outpatients and patients admitted via 112 and this value was statistically significant ( $p=0.812$ ).

## DISCUSSION

This study aimed to examine the demographic characteristics, mode of presentation, length of hospital stay, and emergency outcome of patients admitted to the emergency department with dermatologic complaints and consulted to dermatology. The findings show that a wide age range (13-98%) of patients were included in the study group and a significant proportion of the gender distribution of this group was female (57.1%). This result is supported in the literature where dermatologic diseases are more common in women than in men (4).

In our study, we found that 45.4% of the patients presented with the complaint of rash. Rash is one of the most common symptoms presenting to the emergency department and constitutes an important part of dermatologic diseases (5). Therefore, healthcare professionals in emergency departments should receive more training and awareness raising on the diagnosis and management of dermatologic diseases.

In our study, 97.1% of the patients presented as outpatients. This result shows that most of the patients presenting to the emergency department with dermatologic complaints do not require emergency intervention. Outpatient treatment may shorten the duration of hospitalization and provide more efficient use of emergency departments. However, some dermatologic diseases may require emergency treatment and it is important to provide rapid intervention and appropriate treatment to these patients.

In our study, the rate of patients diagnosed with dermatitis was 22.9%. Dermatitis is a common skin disease in dermatologic practice and may occur due to different causes (6). This result points to the high frequency of dermatitis among dermatologic diseases and may require the development of treatment strategies for patients diagnosed with dermatitis.

In our study, 88.3% of the patients were discharged. This result shows that dermatologic diseases can generally be managed successfully and most of the patients can be discharged. In a study by Kilic D. et al, the discharge rate of patients was 93.6%, which is similar to our results (7). The application of appropriate treatments and follow-up by dermatologists will help patients to improve their health status and be discharged from the hospital.

In addition, the duration of hospitalization was found to be similar among patients admitted to the emergency department. This result shows that the length of hospital stay of patients presenting to the emergency department with dermatologic complaints does not differ from outpatients. However, it is important to prevent unnecessary hospitalization of the patient and to evaluate patients appropriately and refer them to the emergency department or outpatient treatment methods.

## CONCLUSION

This study is important in terms of showing the profile and diagnoses of patients presenting to the emergency department with dermatologic complaints. The results obtained may help to develop more effective strategies

for emergency departments to deal with dermatologic emergencies. However, it should be evaluated together with other studies in the literature and limitations should be considered.

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**Table 1: Descriptive Characteristics of Patients (n=205)**

<b>Variables</b>	<b>Statistics</b>
<b>Age</b>	
$\bar{x}\pm ss$	49,10±19,60
<i>M</i> (min-max)	49 (13-98)
<b>Gender, n (%)</b>	
Female	117 (57,1)
Male	88 (42,9)
<b>Reason for Application, n (%)</b>	
Pain	15 (7,3)
Swelling	26 (12,7)
Redness	28 (13,7)
Itching	36 (17,6)
Rash	93 (45,4)
Bleeding	3 (1,5)
Other	4 (2,0)
<b>Application form, n (%)</b>	
Outpatient	199 (97,1)
Ambulance	6 (2,9)
<b>Diagnosis, n (%)</b>	
Dermatitis	47 (22,9)
Zoster	21 (10,2)
Urticaria	22 (10,7)
Skabiyez	15 (7,3)
Pemphigus	2 (1,0)
Unspecified soft tissue infection	47 (22,9)
Vasculitis	3 (1,5)
Other	48 (23,4)
<b>Outcome, n (%)</b>	
Discharged	181 (88,3)
Service	22 (10,7)
Intensive care	2 (1,0)
<b>Hospitalization Duration</b>	
$\bar{x}\pm ss$	1,83±7,47
<i>M</i> (min-max)	0 (0-77)
<b>Mortality, n (%)</b>	
Survivor	205 (100,0)

$\bar{x}$  : Mean,ss: Standard deviation,M: Median

**Table 2: Comparison of Other Variables According to Parameters**

	Application Procedure		Test Statistics	
	Outpatients	Ambulance	Test Value	<i>p</i> value
<b>Age</b>				
$\bar{x}\pm ss$	48,93±19,54	54,83±22,54	$z=0,716$	0,474
<i>M</i> (min-max)	49 (13-98)	56 (22-84)		
<b>Gender, <i>n</i> (%)</b>				
Female	114 (97,4)	3 (2,6)	$\chi^2=0,126$	>0,999*
Male	85 (96,6)	3 (3,4)		
<b>Admission, <i>n</i> (%)</b>				
Pain	15 (100,0)	0 (0,0) <sup>a</sup>	$\chi^2=18,475$	<b>0,036<sup>+</sup></b>
Swelling	25 (96,2)	1 (3,8) <sup>a</sup>		
Redness	27 (96,4)	1 (3,6) <sup>a</sup>		
Itching	36 (100,0)	0 (0,0) <sup>a</sup>		
Rash	91 (97,8)	2 (2,2) <sup>a</sup>		
Bleeding	2 (66,7)	1 (33,3) <sup>b</sup>		
Other	3 (75,0)	1 (25,0) <sup>b</sup>		
<b>Diagnosis, <i>n</i> (%)</b>				
Dermatitis	46 (97,9)	1 (2,1)	$\chi^2=7,954$	0,266*
Zoster	21 (100,0)	0 (0,0)		
Urticaria	21 (95,5)	1 (4,5)		
Skabiyez	15 (100,0)	0 (0,0)		
Pemphigus	2 (100,0)	0 (0,0)		
Unspecified soft tissue infection	45 (95,7)	2 (4,3)		
Vasculitis	2 (66,7)	1 (33,3)		
Other	47 (97,9)	1 (2,1)		
<b>Outcome, <i>n</i> (%)</b>				
Discharged	176 (97,2)	5 (2,8)	$\chi^2=1,876$	0,524*
Service	21 (95,5)	1 (4,5)		
Intensive care	2 (100,0)	0 (0,0)		
<b>Hospitalization Duration</b>				
$\bar{x}\pm ss$	1,88±7,58	0,16±0,40	$z=0,238$	0,812
<i>M</i> (min-max)	0 (0-77)	0 (0-1)		
<b>Outcome, <i>n</i> (%)</b>				
Survivor	199 (97,1)	6 (2,9)	-	-

%, Percent of rows, M: Median,  $\chi^2$ : Chi-square test statistic, z: Mann-Whitney U test,

\*Significance value obtained by Exact method