

Dermatological Applications to the Emergency Department of an University Hospital in Northern Cyprus

Kuzey Kıbrıs'ta Üniversite Hastanesi Acil Servisine Dermatoloji Başvuruları

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Abstract

Objective: Reasons for application to emergency departments may vary, in dermatology as well as in other branches, according to the geographic regions, climatic and socio-cultural structures. The aim of this study is to gain epidemiological knowledge about the identification, clinical features, treatment and follow-up procedures of patients who attended with dermatologic problems to the emergency department of an university hospital in an island with a subtropical climate in Mediterranean area.

Materials and Methods: In this retrospective descriptive study, patients who were admitted to the emergency department with a dermatological complaint during an 18-month period between July 2010 and December 2011 in the Emergency Department of Near East University Hospital, Nicosia, TRNC were evaluated. Descriptive statistics were evaluated as mean and percentage.

Results: 1.8% (206 of total 11441) of applications to the emergency department were dermatological diseases. Urticaria/angioedema was the most common cause of applications, and was followed by drug reactions, insect bites and cellulitis respectively.

Conclusion: Results of our study indicate that the most common reason for application to the emergency department in North Cyprus is urticaria, and this finding is consistent with other studies in the world. However, insect stings are more common and have specific features. (*JAEM 2012; 11: 137-40*)

Key words: Emergency, dermatology, Cyprus, pruritus, epidemiology

Özet

Amaç: Acil servislere başvuru nedenleri, pek çok branşta olduğu gibi dermatolojik nedenler için de, o bölgelerin coğrafi, iklimsel ve sosyo-kültürel yapılarına göre farklılıklar gösterebilir. Bu çalışmada amacımız, Akdeniz'in ortasında subtropikal iklime sahip bir adada üniversite hastanesi acil servisine başvuran dermatolojik hastaların tanımlanması, klinik özellikleri, tedavileri ve ileri takipleri hakkında epidemiyolojik bilgi sahibi olmaktır.

Gereç ve Yöntemler: Retrospektif olarak Temmuz 2010 ve Aralık 2011 tarihleri arasındaki 18 aylık sürede Lefkoşa, KKTC'de Yakın Doğu Üniversitesi Tıp Fakültesi Hastanesi acil servisine dermatolojik bir yakınma ile başvuran veya dermatolojik bir hastalık tanısı alan hastalar incelenmiştir.

Bulgular: Toplam 11441 acil servis başvurusunun 206'sı (%1.8) dermatolojik hastalıklar idi. Urtiker-anjioödem en çok başvuru nedeni olup, bunu sırası ile böcek sokmaları ve ilaç erupsiyonları izlemiştir.

Sonuç: Bulgularımız Kuzey Kıbrıs'ta da acile en sık başvuru nedeni olarak ilk sırada urtiker olması ile dünyadaki çalışmalar ile uyumlu olmakla beraber, böcek sokmalarının özellik gösterdiğini ortaya koymuştur. (*JAEM 2012; 11: 137-40*)

Anahtar kelimeler: Acil, dermatoloji, Kıbrıs, kaşıntı, döküntü, epidemioloji

Introduction

Dermatological problems are seen very often in the emergency departments (1, 2). It has been reported that skin complaints make up 5-8% of all emergency department admissions (3). Although diseases such as Stevens Johnson Syndrome, Toxic epidermal necrolysis, exfoliating erythrodermas, necrotizing fasciitis and angioedema are mostly regarded as dermatologic emergencies, as delay in admission or medical intervention may result in death, other diseases such as urticaria, pruritus, infectious diseases and

insect bites are reported to be more common problems in emergency departments (2, 4, 5). The "Dermatological emergency" concept may vary both among physicians, patients and societies. The concept is not only based on medical criteria but is also, related to the geographic, socio-economic, current health system and cultural factors (6). These factors may be the determining features in admissions to the emergency departments. However, there is a lack of regional studies of large series which attempt to define these features. Also, to the best of our knowledge, there is no data describing the status in Cyprus.

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The aim of this study is to gain epidemiological knowledge about the identification and clinical features of patients who attended with dermatological problems to the emergency department of an university hospital in the island of Cyprus, with a subtropical climate in Mediterranean area.

Materials and Methods

Data were collected retrospectively on patients who were admitted to the Emergency Department of Near East University Hospital, Nicosia, TRNC with a dermatological complaint between July 2010 and December 2011 during a 18-month period. The hospital is the only university hospital as a third level reference hospital in the island and is also open to private admissions. It has a 500 bed capacity and serves a population of 500-1.000.000 persons, depending on the tourism season. Emergency care is provided by general practitioners and dermatology services on-call for 24 hours.

Demographic properties such as age, sex, were recorded in addition to complaint on admission, diagnosis, treatment and follow-up. All patients were consulted and diagnosed by a dermatology consultant and in pediatric cases in consensus with a pediatrician. Statistical analysis were done by SPSS for Windows 2.0 version. Descriptive statistics were evaluated as mean and percentage.

Results

1.8% (206 of total 11441) of applications to the emergency department were dermatological diseases.

The ages of the patients varied from 1 months to 92 years old, with a mean age of 29.25 years. Women made up 116 of patients (56.3%), and men were 90 (44.7%) showing a slight predominance in women.

The monthly distribution of dermatologic patients was not homogenous. Increases were seen mainly in spring and autumn (Figure 1).

The most common complaint on admission was urticaria-angioedema, followed by drug reaction, insect bite, non-specific pruritus, bee sting, and viral exanthema respectively (Table 1).

Pediatric cases constituted 33 (16%) of total patients. The average age of pediatric cases was 9.2 years (9 months-16 years old). The common reasons for application in the pediatric group were urticaria (n=12), viral exanthema (n=7), insect bite (n=7), bee sting (n=3), drug eruption (n=3), and Pitriasis Rosea (n=1) consecutively.

Features of insect bites and bee stings were evaluated in detail for seasonal variance, as well. An increase in September and October was detected for insect bites and bee stings (Figure 2).

Discussion

The "Dermatological emergency" concept may vary both among physicians, patients and societies. The concept is not only based on medical criteria but is also related to the social, economic, the current health system and cultural factors (6). Although dermatologic emergency is defined as "a health condition in which a delay in admission or medical intervention may result in death", it was shown that common dermatological referrals to emergency departments do not include these disorders (1, 4). A great number of patients with acute dermatological symptoms seek "immediate attention" despite

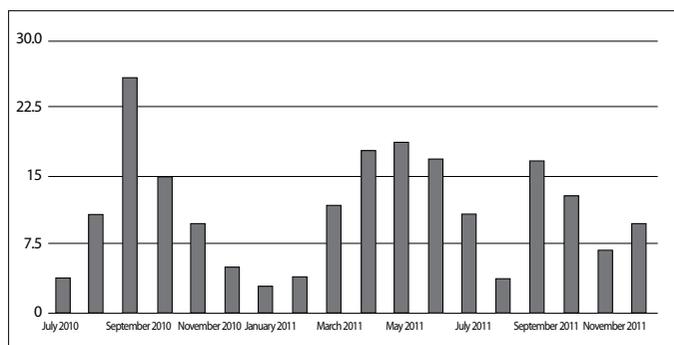


Figure 1. Monthly distribution of dermatological applications to the emergency department

Table 1. Dermatologic conditions applying to the ED

Diagnosis	Number	%
Urticaria-angioedema	82	39.8%
Drug eruption	34	16.5%
Insect Bite	32	15.5%
Non-specific pruritus	17	8.25%
Bee sting	10	4.85%
Viral exanthema	8	3.88%
Pitriasis Rosea	4	1.9%
Contact Dermatitis	4	1.9%
Cellulitis/Furuncle	4	1.9%
Tick Bite	3	1.45%
Zoster	2	0.97%
Sun Burn	1	0.48%
Erythema multiforme	1	0.48%
Milia Rubra	1	0.48%
Dyshidrosis	1	0.48%

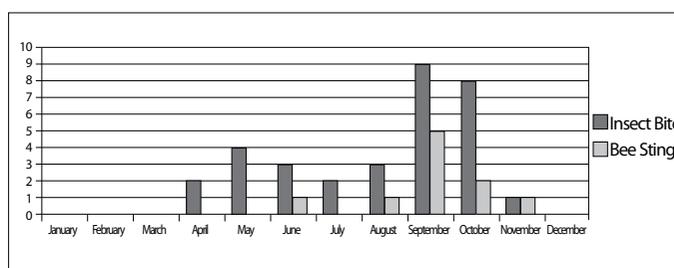


Figure 2. Seasonal distribution of insect bite and bee stings

the condition not being serious (1,7). Our study revealed similar results to these studies (7). There were only 2 severe angioedema cases who needed emergency medical care whereas no Stevens Johnson Syndrome, toxic epidermal necrolysis, exfoliating erythrodermas or necrotizing fasciitis were seen during 18 months period.

In our study, the mean age of patients was 29.25 years, similar to the report of Martinez-Martinez, but different from the studies of Jack and Erdogan who reported these ages as 43 and 34 years respectively (1, 6, 7). The younger age admissions might be related with the proportion of young university students and tourist population in the island. The pediatric cases were 33 (16%) of all dermatological applications, which shows a low frequency compared to

other studies (1). This low percentage could be related with the easy access to pediatricians by families in the island.

Male/female ratio was 90/116, indicating that more than half of the patients were women. In most studies a male dominance were reported in contrast to our study, whereas Martinez et al. (1) reported a slight female predominance as in our study (7, 8).

Interestingly, there was a remarkable decrease in dermatological admissions during summer, in correlation with the decreased rate of total admissions to the hospital. However, in a report from Crete, which is a Mediterranean island having similar geographic properties to Cyprus, an increase in dermatological applications were reported (9). In our study, we evaluated only emergency service applications. This decrease may be correlated with a decrease in the population due to its being the holiday period for universities and non-preferred season by tourists because of the heat. Also, an increase in autumn was observed related with the increase in touristic population who are more vulnerable to insect bites, as well as tendency to outdoor living of local inhabitants. However, our results were similar to the study of Symvoulakis et al. (9), where the most common diagnosis was allergic reactions.

In our study the common reasons of application were urticaria angioedema, drug reactions, insect bites, non specific pruritus and bee stings. The most common diagnosis was urticaria, which was similar to other studies. There were only 2 cases of urticaria and angioedema requiring hospitalization. Drug reactions were the second most common diagnosis. The drugs responsible for these were NSAIDs, antibiotics, antiepileptics and chemotherapeutics in the first line. All patients responded well to systemic and topical steroids, in addition to antihistamines. None of the patients required hospitalization.

The third common diagnosis were insect bites. All of the cases that had been diagnosed as "insect bite" were due to sand flies. These lesions were multiple, more itchy than mosquito bites, erythematovesicular and also last longer. Although clinical appearance is quite distinguishable for the islanders, it may be alarming for tourists who had no experience of this kind of insect bite and explain the admissions to the emergency department. Sand flies are important members of Cyprus fauna. They are small (with a body size of about 3 mm in length), making them hard to detect. Their bite is sometimes not felt and leaves a small round, reddish picur area that starts itching hours or days later. Sandfly bites may be small erythemaous papules which evolves even to a itching vesicular plaque (10, 11). All of our cases were bitten by the sand fly for the first time, were new university students, tourists who visit the island for the first time or children. There were no cases of insect sting /venom allergy showing systemic symptoms.

The fourth common (n=17) diagnosis was non-specific pruritus with no lesions. These patients were directed to the dermatology outpatient department for further tests. Nine of these did not attend their out-patient appointments whereas 8 came to the control. In the further evaluation of these 8 cases, one of them was found to have anxiety about school exams, 2 had urinary infections and the other five cases had xeroderma. These patients with xeroderma were from the Lefkosa region where tap water is hard and salty, as well as leaving shower gel residues on skin. All of them were relieved by regulating body care products and moisturizers.

Tick bites were relatively uncommon (n=3). As there had been reports of deaths due to Crimean Congo hemorrhagic fever in Turkey

and the media emphasized the importance of tick bites in etiology, tick bites became an alerting situation, which may result in death (12). North Cyprus, having a Turkish Cypriot population in addition to many university students from Turkey, has close relations with Turkey and follows the Turkish media also. However, Cyprus is not an endemic area of Crimean Congo hemorrhagic fever and there have been no case report of Crimean Congo hemorrhagic fever, ever. Although acute Q- fever has been reported in Cyprus related with tick bites, we did not see any patient showing the symptomatology (13). In our patients, tick was carefully removed, with complete mouthparts and the body, from the skin by physicians and patients showed no clinical symptoms during the 2 months follow-up.

Infectious diseases were referred less often compared to other studies (6, 8). There were 3 cases of cellulitis and 1 case of frunculosis. This might be related to empiric antibiotic treatments by the general practitioners in the first step health centers or good adherence to regular application to the dermatology outpatient clinic.

In our study, zoster was seen only in 2 patients (0.97%). Wang et al. (8) reported zoster to be the "commonest dermatological condition presenting, up to 20.8% at the ED" in Singapore, where as Martinez et al. (1) reported 0.05% in Spain, as in our study. These reports with different ratios support the importance of regional studies for physicians delivering health care in these areas.

In the pediatric group, the most common reason for application was urticaria, as in the adult group. However, viral exanthemas were the second most common reason instead of drug reactions, compared to the adult group. Other reasons such as insect bites were similar to the adult group.

Results of our study revealed that a great majority of ED applications for dermatologic conditions were non-emergency situations. There may be many universal or local factors contributing to these applications. First, patients might be considering any wide spread skin rash as a condition which requires immediate medical care. Erdogan et al. (6) evaluated the dermatological emergency patients prospectively and found that almost all of the patients seeking emergency care for a dermatologic condition were alarmed due to experiencing such a skin complaint for the "first time". Also, Goldwag et al. (14) showed that most of the patients were satisfied with their applications to the emergency department as regards to waiting time, doctor/nurse competence and attitudes, as well as resolving the problem, informing the patient and arranging the further plan. So, from the patient's point of view, emergency departments may be considered as good and comfortable triage centers where the patient satisfaction is also high. Second, being the only university hospital in the island, patients might be considering our hospital as a center where they can get the most advanced medical care. Third, Cyprus is a touristic island and tourists seek immediate health care. Fourth, the citizens may prefer to pay rather than wait in queues for a dermatology appointment in the government hospital. All our dermatology patients were self-paying or private insurance patients. This finding is similar to the study of Fong where he reported that private insurance or self-paying patients are more likely to refer to the emergency departments for non-urgent conditions (15).

Although our study has some limitations such as being a tertiary referral center and not representing all skin diseases in the island, it supplies a general perspective of patients seeking urgent medical care for cutaneous complaints. Results of our study showed that physicians in emergency departments in Cyprus are more likely to

face urticaria/angioedema, as in elsewhere in the world. But in addition, atypical lesions related with local insects may present as emergency skin rashes as well. Although serious life threatening dermatologic disorders are very rare, paying specific attention to dermatologic conditions will help towards a better consideration and differentiation of dermatologic emergencies for emergency department physicians.

Conclusion

Both universal and regional determination of common dermatologic applications to the ED may be beneficial for physician in terms of increasing education and experience, and thus the approach to emergency patients.

Conflict of Interest

No conflict of interest was declared by the authors.

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