Actas Dermosifiliogr. 2011;**102(1)**:39–47

ACTAS
Dermo-Sifiliográficas

Full English text available at
www.elsevier.es/ad

ORIGINAL ARTICLE

# Dermatology Consultations in an Emergency Department Prior to Establishment of Emergency Dermatology Cover

**M.L. Martínez-Martínez,* E. Escario-Travesedo, M. Rodríguez-Vázquez, J.M. Azaña-Defez, M.C. Martín de Hijas-Santos, L. Juan-Pérez-García**

*Servicio de Dermatología, Complejo Hospitalario Universitario de Albacete, Spain*

Manuscript received February 27, 2010; accepted for publication April 27, 2010

**KEYWORDS**
Dermatologic emergencies;
Hospital emergency services;
On-call dermatologist;
Dermatology training;
Epidemiology

**Abstract**
*Background and objective:* An increasing number of patients seek emergency treatment for dermatologic complaints. The aim of this study was to assess the characteristics of skin complaints seen in an emergency department prior to establishment of specialist dermatology cover.
*Materials and methods:* A retrospective, descriptive study was undertaken using data on urgent dermatology cases seen by nonspecialist physicians in the emergency department of Hospital General Universitario de Albacete, Spain, in 2008.
*Results:* A total of 3662 patients with skin diseases were seen (2.59% of all emergency cases; approximately 10 patients per day). The mean age was 27.73 years and there was a slight predominance of female patients. Children and adolescents accounted for 5.85% of cases. A total of 96 different conditions were diagnosed and 84% of cases corresponded to one of 21 different diagnostic entities, urticaria being the most frequent (19.27%). The 96 diagnoses were grouped into 16 categories to facilitate analysis. According to this classification, most patients had infectious diseases (47.49%), followed by urticaria and angioedema (20.13%), "nonspecific diagnosis" (11.93%), and "descriptive diagnosis" (6.49%). In 4.8% of cases, the patient was admitted, most frequently for cellulitis.
*Conclusions:* In nonspecialist emergency services, the number of different diagnoses is small in relation to the number of patients seen and the proportion of nonspecific and descriptive diagnoses is relatively large. In our opinion, an on-call dermatologist should be made available within emergency departments in order to offer a higher quality of care to patients with skin conditions.


*Corresponding author.
*E-mail address:* mlmartinezm@sescam.jccm.es (M.L. Martínez-Martínez).

**PALABRAS CLAVE**
Urgencias Dermatológicas;
Urgencias hospitalarias;
Guardias de dermatología;
Formación en dermatología;
Epidemiología

## Consultas dermatológicas en el Servicio de Urgencias: situación previa a la instauración de guardias de la especialidad

### Resumen

*Introducción:* Los pacientes que solicitan atención urgente por problemas dermatológicos suponen una demanda asistencial creciente y numerosa. El objetivo de nuestro trabajo fue evaluar las características de la patología dermatológica en el Servicio de Urgencias antes de la implantación de las guardias de la especialidad.

*Material y métodos:* Estudio descriptivo y retrospectivo que recoge los datos referidos a la patología dermatológica urgente atendida, por médicos no especialistas, en el Servicio de Urgencias del Hospital General Universitario de Albacete durante el año 2008.

*Resultados:* Se atendió a un total de 3.662 pacientes con enfermedades dermatológicas (2,59% de urgencias dermatológicas, 10 pacientes/día). La edad media fue de 27,73 años, con un ligero predominio femenino. La población pediátrica supuso el 44,12%. Fueron diagnosticados 96 procesos diferentes, correspondiendo un 84% de toda la patología atendida a 21 entidades diagnósticas, siendo el diagnóstico más frecuente el de urticaria (19,27%). Los 96 procesos diagnósticos se agruparon en 15 patologías para su análisis, destacando en primer lugar la patología infecciosa (47,49%), seguida de urticaria y angioedema (20,13%), "diagnóstico inespecífico" (11,93%) y "diagnóstico descriptivo" (6,49%). Se realizaron 4,8% de ingresos, siendo la celulitis la causa más frecuente.

*Conclusiones:* El número de diagnósticos diferentes se reduce en las consultas de urgencias generales, aumentando los diagnósticos inespecíficos y descriptivos. Consideramos necesaria la presencia de un dermatólogo de guardia para intentar ofrecer mayor calidad asistencial al paciente dermatológico.



## Introduction

An increasing number of patients visit emergency departments for skin complaints. Although most of the conditions are not life threatening, they nevertheless create anxiety in the patient and often result in work absences and social limitations. A number of studies describing these situations have indicated the importance of establishing specialist cover.[1-7] Few studies, however, have been undertaken in hospitals where urgent dermatological complaints are seen by physicians who are not specialists in dermatology.[2]

The aim of this study was to determine the characteristics of skin complaints seen in the emergency department of our hospital prior to the establishment of specialist dermatology cover.

## Material and Methods

Data were collected retrospectively on patients seen for dermatological complaints in the emergency department of Hospital General Universitario de Albacete, Spain between January 1, 2008 and December 31, 2008. The hospital is a tertiary level hospital with 671 beds and serves a population of 265 090 patients. Emergency care is provided by specialists in family and community medicine, medical and surgical specialist residents, and specialist pediatricians.

In order to analyze the demand for emergency dermatological care, a list of the most common dermatological diagnoses in the emergency department was prepared and the documentation service was asked to identify these diagnoses in the database of patients treated in the emergency department during 2008. In total, 3738 patients were identified and 3662 were included in the study after removing those cases that were not exclusively dermatological and were seen by other specialties.

The following variables were analyzed: date of consultation, identification number, age, sex, diagnosis, and hospital admission.

Ninety-six different conditions were diagnosed. In order to handle the data more effectively, they were organized into 15 groups of related conditions: infections; urticaria and angioedema; eczema; bites and prurigo; diseases of the hair follicles, nails, and sweat glands; erythematous and scaling diseases; drug-induced skin reactions; cutaneous vascular disease; oral disease; tumors; skin conditions caused by mechanical or physical agents; skin reactions; miscellaneous skin conditions; nonspecific diagnoses; and descriptive diagnoses. The diagnostic groups were divided into subgroups of more specific diagnoses.

The data obtained were processed using Microsoft Excel for Windows.

## Results

In 2008, 141 601 patients were seen in the emergency department; of these, 3662 were diagnosed with skin conditions. Dermatological conditions thus accounted

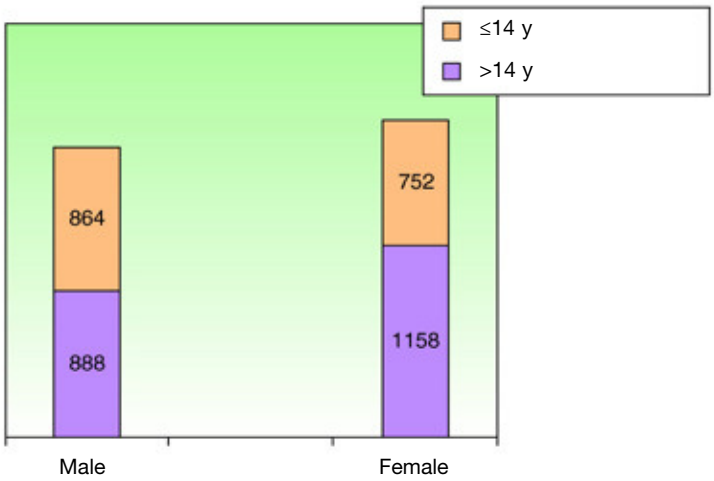


**Figure 1** Dermatological emergencies by sex and age group.

for 2.59% of cases seen in the emergency department, corresponding to an average of 10 patients per day.

The age of the patients ranged from 1 month to 96 years, with a mean age of 27.7 years (30.4 years in women and 24.7 years in men). There was a slight predominance of women, who accounted for 52.2% of the group (Figure 1).

Patients under 14 years of age (n=27 619) represented 19.5% of all cases seen in the emergency department and were treated by pediatricians. In 1616 children (44.12%), the reason for emergency consultation was dermatological (39.42% in girls and 49.31% in boys).

Similar numbers of patients were seen each month (mean, 305.25 patients) but there was a slight increase in the number of consultations during the summer (Figure 2).

A total of 96 conditions were diagnosed (Table 1). Twenty-one diagnostic entities accounted for 84% of cases (Figure 3); the most common complaint was urticaria (19.27%), followed by infectious cellulitis (16.73%) and nonspecific rash (8.06%).

The 96 diagnoses were organized into 15 groups (Figure 4) for analysis. The most common group was infections (47.49%), followed by urticaria-angioedema (20.13%), nonspecific diagnosis (11.93%), description of the lesions (6.49%), miscellaneous disease (4.32%), bites and prurigo (2.26%), eczema (1.93%), and diseases of the hair follicles (1.33%); the remaining groups accounted for less than 1% of cases. Together, infections and urticaria-angioedema (67.61%) and nonspecific or descriptive diagnoses (18.43%) accounted for 86% of the conditions seen. In the pediatric age group (Figure 5), the most frequent diagnosis was infection (46.53%), followed by urticaria-angioedema (19.98%). There was also a higher percentage of nonspecific and descriptive diagnoses (24.07%) in this group.

The most common infectious condition was infectious cellulitis (Table 1), which accounted for 16.76% of all diagnoses. Infectious cellulitis was also the most common diagnosis in adults, followed by vulvovaginitis and infectious mononucleosis. The most common infectious disease in

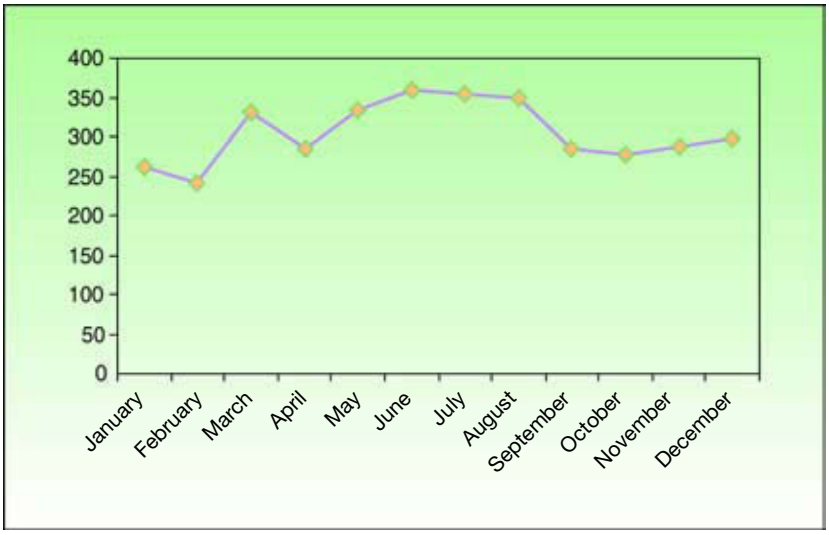


**Figure 2** Frequency of dermatological emergencies by month.

**Table 1** Dermatological Diagnoses Provided in the Emergency Department

| Diagnosis | No. of Cases | % |
|---|---|---|
| *Infections* | | |
| Cellulitis | 613 | 16.74 |
| Scarlet fever | 141 | 3.85 |
| Viral rash | 136 | 3.71 |
| Chickenpox | 130 | 3.55 |
| Vulvovaginitis | 124 | 3.39 |
| Balanitis | 86 | 2.35 |
| Infectious mononucleosis | 73 | 1.99 |
| Dermatophytosis | 62 | 1.69 |
| Urethritis | 61 | 1.67 |
| Exanthema subitum | 49 | 1.34 |
| Impetigo | 41 | 1.12 |
| Boils | 37 | 1.01 |
| Common warts | 35 | 0.96 |
| Folliculitis | 29 | 0.79 |
| Candidiasis | 24 | 0.66 |
| Unspecified | 20 | 0.55 |
| Herpes simplex | 16 | 0.44 |
| Abscesses | 16 | 0.44 |
| Scabies | 11 | 0.30 |
| Genital warts | 6 | 0.16 |
| Sepsis of cutaneous origin | 5 | 0.14 |
| Intertrigo | 5 | 0.14 |
| Erysipelas | 5 | 0.14 |
| Furunculosis | 3 | 0.08 |
| Herpes zoster | 2 | 0.05 |
| Pyoderma | 2 | 0.05 |
| Fasciitis | 2 | 0.05 |
| STD | 2 | 0.05 |
| Lice infestation | 1 | 0.03 |
| Fifth disease | 1 | 0.03 |
| Syphilis | 1 | 0.03 |
| Total | 1739 | 47.49 |
| *Eczema* | | |
| Nonspecific | 65 | 1.77 |
| Contact | 5 | 0.14 |
| Atopic | 1 | 0.03 |
| Total | 71 | 1.94 |
| *Urticaria-angioedema* | | |
| Urticaria | 706 | 19.28 |
| Angioedema | 31 | 0.85 |
| Total | 737 | 20.13 |
| *Erythematous flaking diseases* | | |
| Pityriasis rosea | 12 | 0.33 |
| Psoriasis | 11 | 0.30 |
| Erythroderma | 1 | 0.03 |
| Total | 24 | 0.66 |
| *Bites and prurigo* | | |
| Bites | 30 | 0.82 |
| Prurigo | 53 | 1.45 |
| Total | 83 | 2.27 |
| *Tumors* | | |
| Lipoma | 7 | 0.19 |
| Angioma | 6 | 0.16 |
| Cyst | 4 | 0.11 |
| Melanocytic nevus | 2 | 0.05 |
| Hemangioma | 2 | 0.05 |
| Unspecified | 1 | 0.03 |
| Cutaneous horn | 1 | 0.03 |
| Total | 23 | 0.63 |
| *Diseases of the hair follicles, nails, and sweat glands* | | |
| Whitlow | 27 | 0.74 |
| Hidradenitis | 7 | 0.19 |
| Alopecia | 6 | 0.16 |
| Acne | 4 | 0.11 |
| Paronychia | 4 | 0.11 |
| Rosacea | 1 | 0.03 |
| Total | 49 | 1.34 |
| *Drug-induced skin reactions* | | |
| Dermatitis medicamentosa | 11 | 0.30 |
| Anaphylaxis | 6 | 0.16 |
| Toxicoderma | 4 | 0.11 |
| Total | 21 | 0.57 |
| *Skin reactions* | | |
| Exudative erythema multiforme | 1 | 0.03 |
| *Total* | 1 | 0.03 |
| *Vascular disease* | | |
| Lymphangitis | 11 | 0.30 |
| Purpura | 10 | 0.27 |
| Ulcers | 9 | 0.25 |
| Vasculitis | 4 | 0.11 |
| Total | 34 | 0.93 |
| *Skin conditions due to physical or mechanical factors* | | |
| Open wound | 9 | 0.25 |
| Burns | 9 | 0.25 |
| Animal bites | 1 | 0.03 |
| Total | 19 | 0.52 |
| *Oral pathology* | | |
| Stomatitis | 13 | 0.35 |
| Mouth ulcers | 7 | 0.19 |
| Mucositis | 4 | 0.11 |
| Glossitis | 3 | 0.08 |
| Total | 27 | 0.74 |
| *Miscellaneous diagnoses* | | |
| Pruritus | 113 | 3.09 |
| Surgical complications | 22 | 0.60 |
| Callus | 8 | 0.22 |
| Hematoma | 6 | 0.16 |
| Granuloma | 5 | 0.14 |
| Panniculitis | 4 | 0.11 |
| Striae | 1 | 0.03 |
| Total | 159 | 4.34 |
| *Description of the lesions* | | |
| Eruption | 115 | 3.14 |
| Skin lesion | 44 | 1.20 |
| Urticarial rash | 29 | 0.79 |
| Erythema | 16 | 0.44 |
| Blisters | 14 | 0.38 |

**Table 1** *(Continued)*

| Diagnosis | No. of Cases | % |
|---|---|---|
| Necrosis | 5 | 0.14 |
| Rash | 3 | 0.08 |
| Nodules | 3 | 0.08 |
| Erosion | 3 | 0.08 |
| Patches | 2 | 0.05 |
| Vesicles | 1 | 0.03 |
| Keratosis | 1 | 0.03 |
| Swelling | 1 | 0.03 |
| Mass | 1 | 0.03 |
| Total | 238 | 6.50 |
| *Nonspecific diagnosis* | | |
| Nonspecific rash | 295 | 8.06 |
| Dermatitis | 74 | 2.02 |
| Skin reaction | 52 | 1.42 |
| Dermatosis | 9 | 0.25 |
| Allergic rash | 6 | 0.16 |
| Skin | 1 | 0.03 |
| *Total* | 437 | 11.93 |
| *Miscellaneous diagnoses* | | |
| Pruritus | 113 | 3.09 |
| Surgical complications | 22 | 0.60 |
| Callus | 8 | 0.22 |
| Hematoma | 6 | 0.16 |
| Granuloma | 5 | 0.14 |
| Panniculitis | 4 | 0.11 |
| Striae | 1 | 0.03 |
| Total | 159 | 4.34 |
| *Description of the lesions* | | |
| Eruption | 115 | 3.14 |
| Skin lesion | 44 | 1.20 |
| Urticarial rash | 29 | 0.79 |
| Erythema | 16 | 0.44 |
| Blisters | 14 | 0.38 |
| Necrosis | 5 | 0.14 |
| Rash | 3 | 0.08 |
| Nodules | 3 | 0.08 |
| Erosion | 3 | 0.08 |
| Patches | 2 | 0.05 |
| Vesicles | 1 | 0.03 |
| Keratosis | 1 | 0.03 |
| Swelling | 1 | 0.03 |
| Mass | 1 | 0.03 |
| Total | 238 | 6.50 |
| *Nonspecific diagnosis* | | |
| Nonspecific rash | 295 | 8.06 |
| Dermatitis | 74 | 2.02 |
| Skin reaction | 52 | 1.42 |
| Dermatosis | 9 | 0.25 |
| Allergic rash | 6 | 0.16 |
| Skin | 1 | 0.03 |
| Total | 437 | 11.93 |

Abbreviation: STD, sexually transmitted disease.

children was scarlet fever, followed by viral rash, and chickenpox.

There were 71 cases of eczema, and in 65 of those the type was not specified in the diagnosis. In the descriptive and nonspecific diagnoses groups, skin eruptions (115/238) and nonspecific rash (295/437) were the most common diagnoses provided. The most common diagnosis in the miscellaneous group was pruritus (113/159).

Of all patients examined for skin complaints, 125 (3.41%) returned to the emergency department with the same complaint within a week of discharge.

One hundred seventy-six patients (4.8%) were admitted to hospital for skin diseases (Table 2). The mean age of the patients admitted to hospital was 51.63 years. The most common reason for admission (Figure 6) was infection (84%), principally infectious cellulitis (70.85%) and sepsis of cutaneous origin (2.86%). Thirty-eight children under 14 years of age were admitted to hospital (21.71% of all admissions); the children had a mean age of 2 years. The most common diagnosis in this group was infectious cellulitis (60.52%), followed by chickenpox (10.52%) and rashes that required a period of observation (5.26%).

## Discussion

The results of this study clearly show that patients with dermatological diseases seek immediate attention despite the condition not being serious in the majority of cases. Similar tendencies have been observed in many other specialties.

In our study, we observed a frequency of 10 consultations per day by patients with skin conditions. This is higher than the rates observed by Herrera et al[3] (8.7 patients per day) and Gonzalez Ruiz et al[1] (5.1 patients per day).

The mean age of patients in our study was around 30 years. This is similar to the mean age observed by Gonzalez Ruiz et al[1] but around 20 years lower than that observed by Gil et al.[4] The high frequency of consultation by younger patients could be because they are more concerned about their appearance and more easily alarmed by the presence of visible marks.

In our study, the pediatric population accounted for 44.12% of all patients consulting for skin complaints. This is higher than the percentages observed by Gonzalez Ruiz et al[1] (23.3%) and Herrera et al[3] (5%), probably due to differences in the health care organization and characteristics of the population served by our hospital.

As observed in other studies,[1,3] there was a slightly larger proportion of women who attended the emergency department for skin complaints.

There was an increase in the number of patients seen during the summer, as has been observed in other studies.[3,4] This is probably due to the longer waiting lists and higher frequency of skin conditions such as bites and photodermatosis during this period of the year.

Ninety-six different diagnoses were made, of which 21 accounted for 84% of all the conditions seen. Thus, a large number of urgent dermatology consultations are due to a small number of conditions. González Ruiz et al[1] observed that 27 conditions accounted for 70% of diagnoses, and

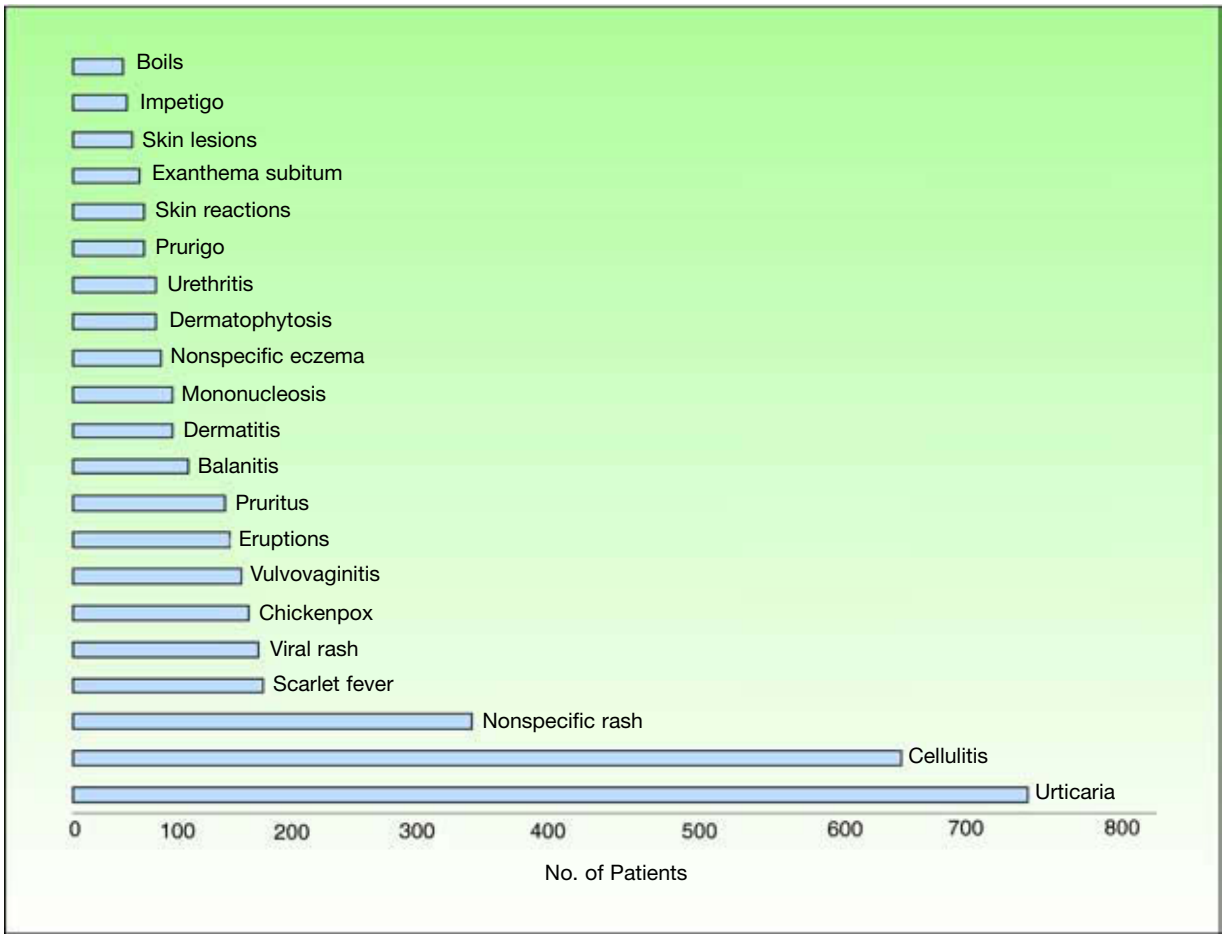


**Figure 3** Most common dermatological diagnoses given in the emergency department. In 2008, 84% of cases were due to 21 diagnostic entities.

similar results were obtained by Herrera et al.[3] Likewise, in a study of urgent pediatric consultations, Roca Saurina et al[6] reported that 72% of skin complaints were accounted for by 20 diseases. Those studies reported that, in addition to a group of highly prevalent skin diseases, there is a group of uncommon conditions that are very difficult to diagnose by physicians who are not dermatology specialists, representing up to 65% of cases in some studies.[3] In our study, a smaller number of diagnoses was obtained in a larger percentage of the population. We believe that the

**Table 2** Most Common Diagnoses Leading to Hospital Admission According to Age Group

| Adults | | | Children | | |
|---|---|---|---|---|---|
| **Diagnosis** | **No. of Cases** | **%** | **Diagnosis** | **No. of Cases** | **%** |
| Cellulitis | 536 | 26.2 | Scarlet fever | 142 | 8.79 |
| Vulvovaginitis | 91 | 4.45 | Viral rash | 129 | 7.98 |
| Infectious mononucleosis | 72 | 3.52 | Chickenpox | 117 | 7.24 |
| Urethritis | 59 | 2.88 | Balanitis | 78 | 4.83 |
| Exanthema subitum | 49 | 2.39 | Cellulitis | 77 | 4.76 |
| Dermatophytosis | 46 | 2.25 | Exanthema subitum | 49 | 3.03 |
| Boils | 37 | 1.81 | Impetigo | 41 | 2.54 |
| Common warts | 32 | 1.56 | Vulvovaginitis | 33 | 2.04 |
| Folliculitis | 26 | 1.27 | Dermatophytosis | 16 | 0.99 |
| Candidiasis | 23 | 1.12 | Not specified | 9 | 0.56 |
| Abscesses | 15 | 0.73 | Scabies | 6 | 0.37 |
| Chickenpox | 13 | 0.64 | Herpes simplex | 6 | 0.37 |
| Not specified | 11 | 0.54 | Folliculitis | 3 | 0.19 |

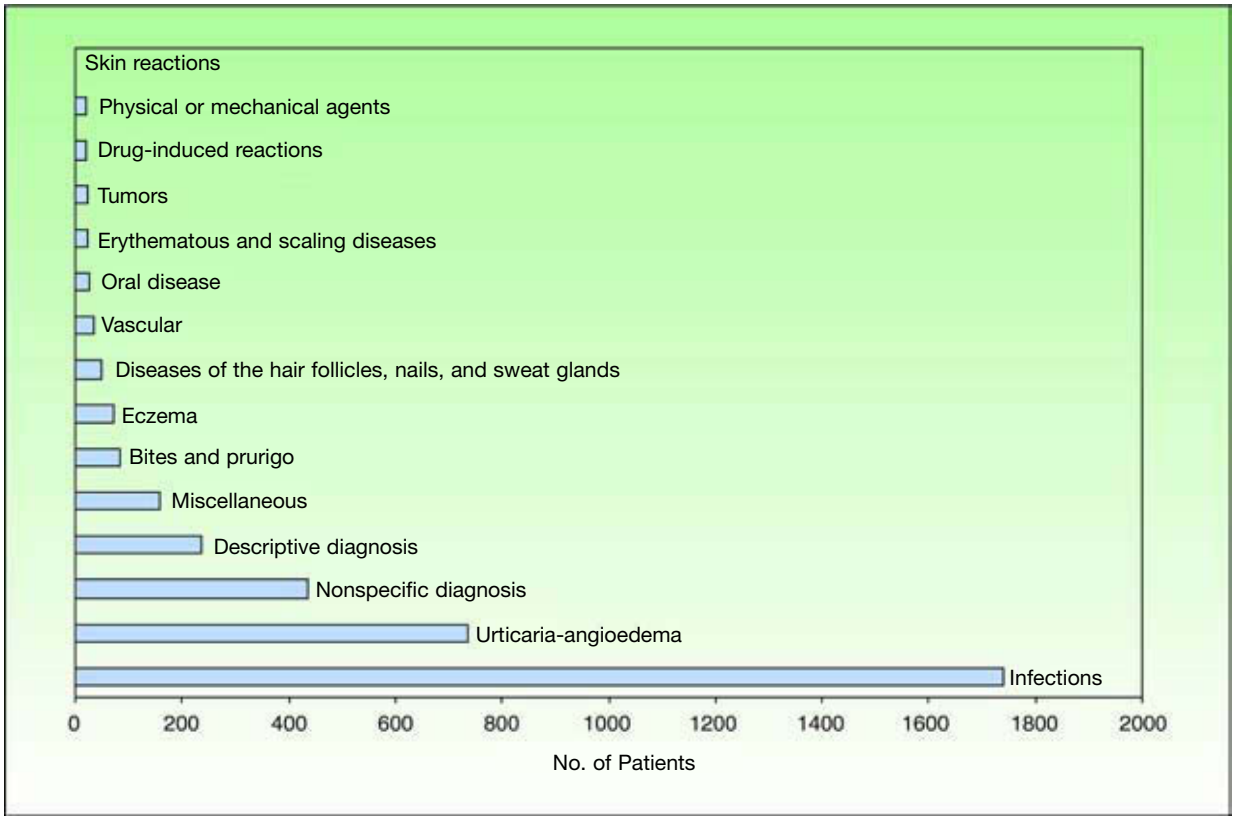


**Figure 4** Dermatological emergencies by diagnostic group in order of frequency.

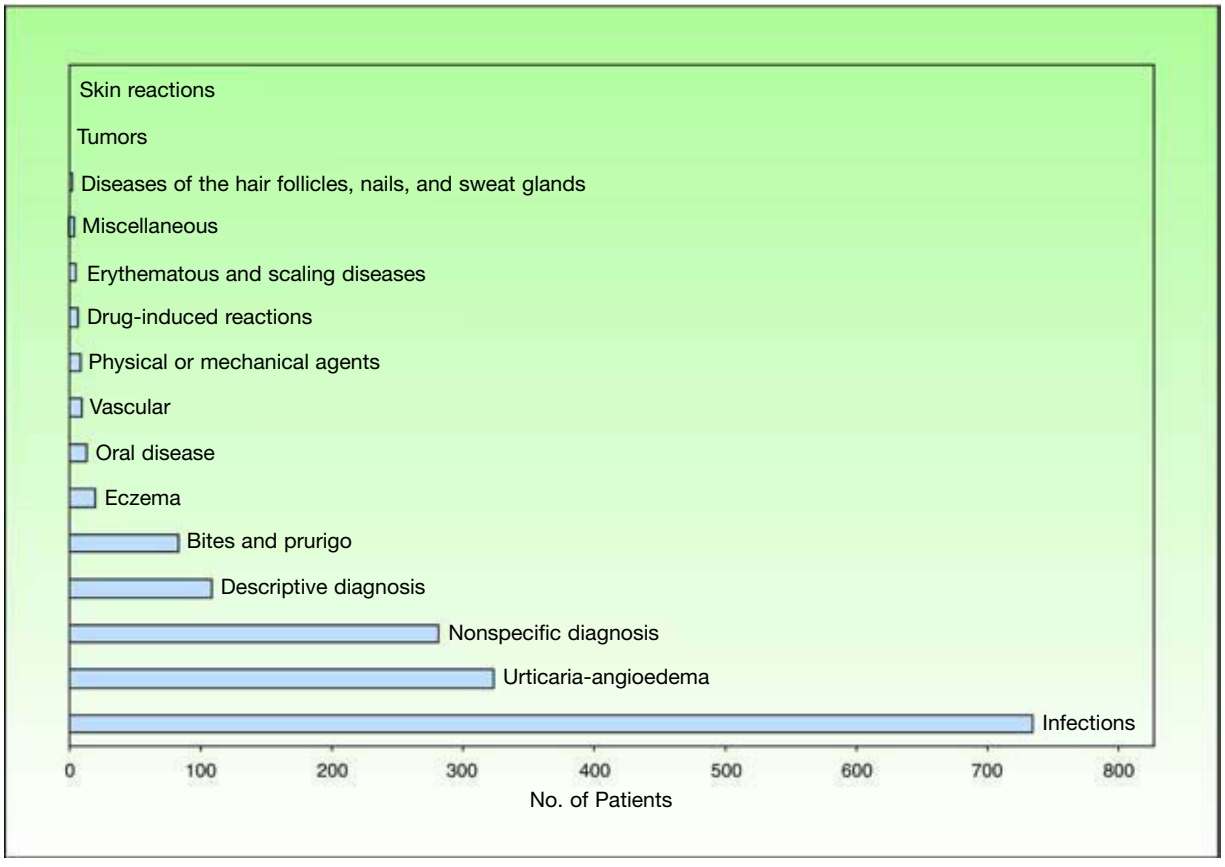


**Figure 5** Dermatological emergencies in children by diagnostic group.

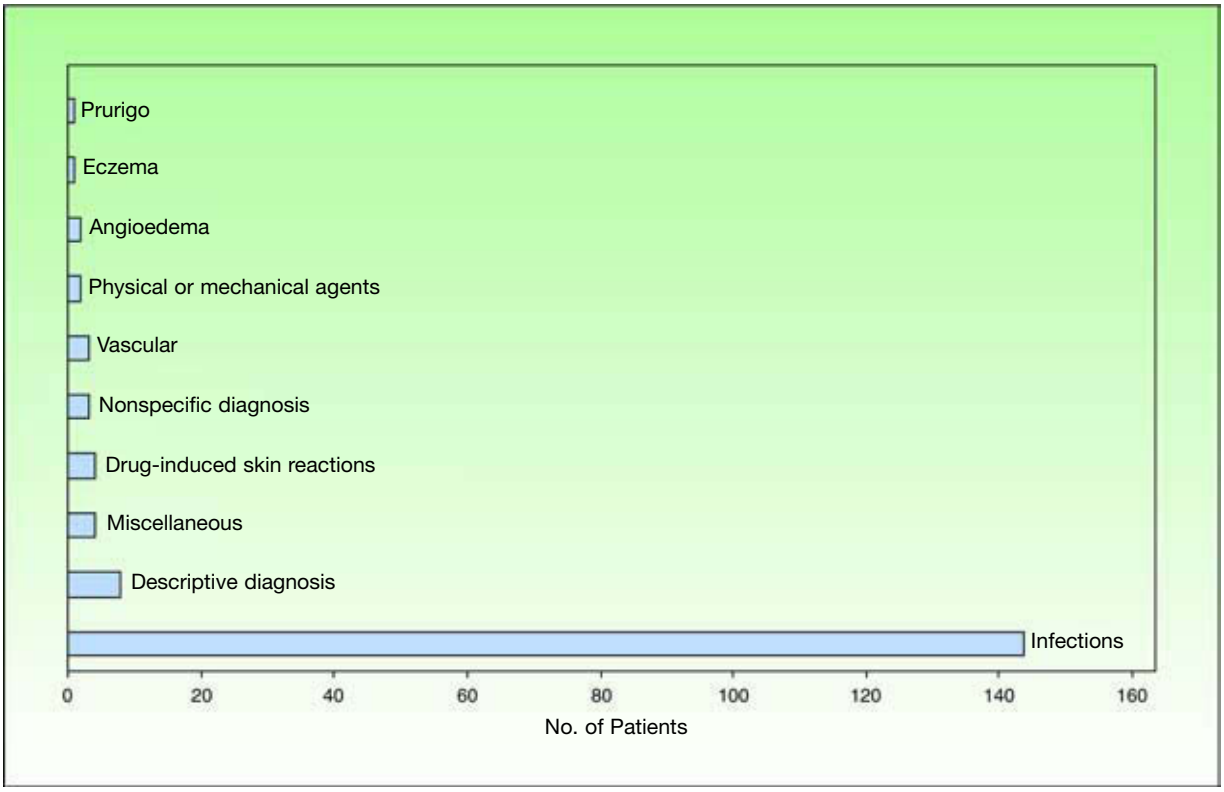


**Figure 6** Most common causes of hospital admission in order of frequency.

main explanation for this difference is the absence of a dermatology specialist in the emergency department. This would result in fewer, less-specific diagnoses, which would ultimately reduce the quality of care offered to the patient, who in many cases would be offered inappropriate or symptomatic treatments.

The most common individual diagnosis was urticaria, an observation that coincides with the results of other studies.[1-3] Whereas the percentage observed in our study was higher than that found in studies where dermatology specialists were available for consultation, it was similar to that reported by Valcuende et al[2] (19.2%) in a study in which patients were seen by nonspecialists. The reason for this increased percentage of cases diagnosed as urticaria is most likely a reduction in the sensitivity of the diagnosis of conditions that may appear similar to nonspecialists and are incorrectly identified as a more common complaint.

Our finding that infections were the most common diagnosis overall coincides with the results of other studies.[1-5] There was a notably low frequency of herpes zoster infection, with only 2 cases diagnosed. In contrast, González Ruiz et al[1] and Valcuende et al[2] observed percentages of 3.5% and 5.1%, respectively. On the other hand, the most frequent diagnosis in this group was infectious cellulitis (16.73%), whereas in the studies of González Ruiz et al[1] and Herrera et al[3] it only accounted for 0.6% and 1.9%, respectively. This substantial difference is likely to be explained by the same factors as those mentioned above to explain the high frequency of urticaria, in which a lack of familiarity with more specific diagnoses increases the likelihood of incorrect diagnosis of a more common condition.

Roca Saurina et al[6] and Herrera et al[3] found that atopic eczema was the most common individual diagnosis in children, whereas in our study only 1 case was observed in the whole group. This is probably related to the failure to identify the type of eczema, since 65 of the 71 cases of eczema were classified as nonspecific.

Nonspecific and descriptive diagnoses were the third and fourth most common diagnostic groups, respectively, and together they accounted for 18.43% of diagnoses. In reality, this is an underestimation since nonspecific eczema, nonspecific infections, and unclassified tumors could also be added to the group. González Ruiz et al[1] reported 2.1% of cases with unknown diagnoses, while Valcuende et al[2] reported 3.8%. Our study and the study by Valcuende et al coincided in the absence of specialist dermatology cover, leading to an increase in the proportion of nonspecific and descriptive diagnoses (18.43% in our study).

A similar proportion of patients were admitted to hospital in our study and in that of Valcuende et al[2] (4.7%). In contrast, the proportion was lower in other studies in which specialist dermatology cover was available in the emergency department.[1,3,4] The main reason for hospital admission was infectious cellulitis, as in the study by Gil et al,[4] but with a much higher percentage in our study (70.85% versus 17%) at the expense of the more specific dermatological causes that were observed in the other studies.

These data show that there is a higher quality of care provided to patients who attend the emergency department for skin conditions when specialist dermatology cover is available. This conclusion is supported by the study of Fleicher et al.[8] Those authors describe a higher quality of diagnoses and treatments offered by dermatologists, whose experience in skin diseases is more extensive, compared with family doctors, internal medicine specialists, and pediatricians, whose experience is very limited.

Skin diseases, except on rare occasions, do not require the use of additional tests and therefore costs and mean time spent in the emergency department are reduced. This capacity of dermatologists helps to avoid inappropriate management in terms of unnecessary tests and treatments recommended by specialists who are not experienced in the management of skin diseases.[9] This lack of experience would result in increased consultation and waiting times for patients. Nonetheless, our study was not designed to respond to these hypotheses, since data were not obtained on the management of patients within the emergency department. Consequently, the above assertions are based entirely on results reported in the literature.

Our results are limited by the retrospective nature of the study, which was based on handwritten diagnoses that were later entered into a database. It is possible that the overall incidence of dermatological emergencies in our hospital is actually slightly higher than that reported here. Our results are comparable to those of previous studies, but are most similar to those of a study performed in a setting without specialist cover.[2] To explain the similarities observed with other studies, we refer to what Valcuende et al[2] described as a "phenomenon in which the possible diagnostic inaccuracies of primary care physicians compared to dermatology residents are diluted" based on the large number of emergency cases with the most frequent diagnoses. This would explain the absence of large differences in the percentage of diagnoses. In future years, following the establishment of specialist dermatology cover in emergency departments, our results will serve as a starting point for an analysis of trends in emergency dermatology service usage, the management of emergency dermatological cases, and the implications for future training.

We would like to highlight the importance of dermatology duty assignments as part of the training of specialist dermatology residents.[10] Such an initiative would allow a wide range of skin diseases to be studied in their most initial stages while also improving the quality and efficiency of the care offered to patients.

## Conflict of Interest

The authors declare that they have no conflict of interest.

## References

1. González Ruiz A, Bernal Ruiz AI, García Muñoz M, Miranda Romero A, Castrodeza Sanz J. Urgencias dermatológicas en un hospital de referencia. Actas Dermosifiliogr. 2001;92:342–8.
2. Valcuende F, Ferraz C, Tomás G, Pitarch A, Almela T, Bertoméu F. Análisis de las urgencias dermatológicas en el servicio de urgencias de un hospital comarcal. Actas Dermosifiliogr. 1996; 87:305–9.
3. Herrera M, Calvente MJ, Del Cerro M, Rueda M, Fernández C, Robledo A. Urgencias en dermatología. Estudio descriptivo. Actas Dermosifiliogr. 1996;76:675–80.
4. Gil Mateo MP, Velasco Pastor M, Miquel Miquel JB, Quecedo Estébanez E, Martínez Escribano JA, Nagore Enguidanos E, et al. Análisis de las urgencias dermatológicas de un hospital terciario. Actas Dermosifiliogr. 1996;87:681–6.
5. Gupta S, Sandhu K, Kumar B. Evaluation of emergency dermatological consultations in a tertiary care centre in North India. JEADV. 2003;17:303–5.
6. Roca Saurina C, Lázaro Tremul AC, Vicente Molinero A, Larumbe Irurzun A, Grasa Jordán MP, Carapeto FJ. Urgencias dermatológicas pediátricas en un hospital terciario. Piel. 2004; 19:124–30.
7. Ribera M. Urgencias en dermatología. Actas Dermosifiliogr. 1997;88:353–7.
8. Fleicher A, Herbert CR, Feldman S. Diagnosis of skin disease by nondermatologist. Am J Manag Care. 2000;6:1149–56.
9. Maza A, Berbis J, Gaudy C, Morand JJ, Berbis P, Grob JJ, et al. Evaluation of dermatology consultations in a prospective multicenter study involving a French teaching hospital. Ann Dermatol Venereol. 2009;136:241–8.
10. Suárez Fernández R. Urgencias en dermatología. Piel. 2009;24: 463–4.