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Urgent Consultations at the Dermatology Department of Basel University Hospital, Switzerland: Characterisation of Patients and Setting – A 12-Month Study with 2,222 Patients Data and Review of the Literature

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Key Words
Dermatologic consultation · Acute · Emergency · Urgent · Skin disease · Outpatient

Abstract
Background: Urgent consultations for skin disorders are commonly done in different settings. Scarce data exist about the characteristics of these patients. ***Objective:*** The aim of this study was to analyse specific characteristics of patients receiving an urgent consultation at a dermatology department in a university hospital. ***Methods:*** We prospectively recorded the data of all patients having had an urgent consultation during a period of 12 months. ***Results:*** We registered 2,222 urgent consultations. The most frequent diagnoses were eczemas (24.8%), dermatomycoses (5.1%) and dermatitis not otherwise specified (4.8%). The most frequent treatments were topical steroids, emollients, topical antibiotics, systemic antihistamines, antibiotics and virostatics. 2.2% of patients were hospitalized, 78.8% asked for a consultation for a disease lasting less than 4 weeks, and 6.9% presented the same day as the skin disease appeared. ***Conclusions:*** This study shows the characteristics of patients receiving an urgent dermatologic consultation. It underlines the need for collaboration between dermatologists, other physicians, general practitioners and nurses. © 2014 S. Karger AG, Basel

Introduction

Urgent consultations for skin disorders are commonly conducted by general practitioners (GPs), dermatologists, outpatient services in hospitals and in emergency departments (EDs). The exact frequency of dermatologic diseases and characteristics of patients have been studied in limited settings; moreover most published data are heterogeneous [1–9]. Reasons for heterogeneity are dissimilarities in studied parameters, such as short-/long-time studies, different referral pattern, in-hospital setting [10], ambulant setting [5, 11], urgent setting [1, 2, 4–8, 12, 13], non-urgent setting, mixed situations, or children only [14–17]. In addition, most studies were retrospective. The aim of our study was to analyse the characteristics of this

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particular setting and the characteristics of patients receiving an urgent dermatologic consultation at the Department of Dermatology, University Hospital of Basel (DDUHB) during one whole year.

Patients and Methods

The DDUHB has an outpatient service on regular working time (8:00–18:00) and an inpatient service with 12 beds. Most patients are first examined by dermatology residents with supervision of qualified consultant dermatologists. Patients showing up between 18:00 and 8:00 (off-duty hours where a dermatologist from the Department of Dermatology (DD) is on call outside of the hospital), on weekends and on official holidays have to go to the ED. Therefore these patients were not included in the study. Patients with a skin disease showing up at the ED Monday to Friday between 8:00 and 18:00 are theoretically directed to the DD. In Switzerland there are DD in the five University Hospitals (Basel, Berne, Geneva, Lausanne and Zurich) and in four additional regional hospitals (Aarau, Bellinzona, Lucerne and St. Gallen). The population of Basel in the year 2007 was 185,200 in the city and 269,100 inhabitants in the region [http://www.bfs.admin.ch/bfs/portal/de/index/themen/01/02/blank/key/bevoelkerungsstand.Document.20561.xls].

All patients sent by any other physician as an emergency and all patients receiving an urgent consultation at the DDUHB on normal working week days (Monday to Friday) from January to December 2007 were prospectively included into the study. We defined any skin problem as an emergency when the patient felt it was urgent and intolerable to deal with without dermatologic advice. This led to a consultation at the day of presentation when any other appointment could not be arranged within a few days.

After every consultation a standardized questionnaire was completed. The parameters recorded were demographic data (three age categories: children 0–16 years, adults 17–64 years, seniors >64 years), referral pattern (self-referral, referral from another department of the hospital, referral from outside the hospital), weekday (Monday to Friday), time and duration of consultation. We also registered language, language problems and necessity of an interpreter. Diagnoses were split into main (leading to urgent consultation) and secondary (additional dermatologic conditions). The localisation of skin problems was standardized. The following diagnostic procedures were studied: blood laboratory analysis, skin biopsy, skin smear tests and direct microscopy analysis. Treatments were also standardized (topical: antibiotic, antiseptic and antimycotic, steroids, emollients; systemic: antihistamines, antiviral agents, antibiotics, antimycotics, steroids, analgesics, retinoids; other treatments: phototherapy, laser, small surgical interventions, other). The extent of the consultation was subdivided into three categories (0–15 min, 16–30 min, >30 min). The necessity of a control consultation or hospitalisation was recorded.

All analyses were performed with Microsoft Excel. Means and percentages were calculated as appropriate. The study was conducted in accordance with the ethical standards of our institution and university.

Table 1. General characteristics of the 2,222 patients having an urgent consultation at the DDUHB

Patients characteristics	
Gender	
Male	1,099 (49.5%)
Female	1,120 (50.4%)
Not evaluable	3 (0.1%)
Mean age of patients, years	46.2
Number of patients by groups	
Children (0–16 years)	126 (5.6%)
Adults (17–65 years)	1,615 (72.7%)
Seniors (>65 years)	480 (21.6%)
Not evaluable	3 (0.1%)
Manner of referral	
Self	1,584 (71.3%)
By physician	554 (24.9%)
From hospital	235 (10.5%)
From outside hospital	319 (14.4%)
Not evaluable	84 (3.8%)
Diagnostic procedure[1]	
Skin biopsy	197 (8.9%)
Skin smear	214 (9.6%)
Direct microscopy analysis	200 (9.0%)
Laboratory blood analysis	163 (7.3%)
No test	1,552 (69.8%)
Not evaluable	7 (0.3%)
Treatment[1]	
Topical	1,758 (79.1%)
Systemic	573 (25.8%)
Both	158 (7.1%)
No topical treatment	416 (18.7%)
No systemic treatment	1,649 (74.2%)
Hospitalisation	49 (2.2%)
Follow-up appointment	1,169 (52.6%)

[1] Numbers exceed 100% since some patients had multiple diagnostic procedures/treatments.

Results

General Data

In 2007 the DDUHB registered 10,998 outpatients, 2,222 of them (20.2%) were urgent consultations. There was an average of 185.2 patients per month, 42.7 per week and 8.5 per day. The youngest patient was 0.5 and the oldest 95 years old (table 1).

Duration of Skin Disease before Urgent Consultation

Summing waiting time before showing up date, patients came to the DDUHB with a disease lasting <4 weeks (n = 1,752; 78.8%), <2 weeks (n = 1,113; 50.1%) and <1 week (n = 886; 39.9%); 154 patients (6.9%) came the same

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Table 2. Top 10 primary diagnoses: total and divided by age groups (children, adults, seniors; n = 2,222)

Primary diagnoses	n	%	Children	n	%	Adults	n	%	Seniors	n	%
Eczema (all)	550	24.8	Eczema	44	34.9	Eczema	386	24.5	Eczema	120	23.3
Dermatomycosis	114	5.1	Impetigo	8	6.4	Dermatomycosis	85	5.4	Herpes zoster	26	5.1
Dermatitis n.o.s.	106	4.8	Dermatitis n.o.s.	7	5.6	Dermatitis n.o.s.	77	4.9	Dermatomycosis	24	4.7
Urticaria	92	4.1	Acne vulgaris	6	4.8	Urticaria	76	4.8	Dermatitis n.o.s.	22	4.3
Arthropod bite reaction	65	2.9	Urticaria	6	4.8	Arthropod bite reaction	53	3.4	Actinic keratosis	22	4.3
Pruritus	57	2.6	Scabies	5	4.0	Pruritus	43	2.7	Ulcer	20	3.9
Herpes zoster	56	2.5	Dermatomycosis	5	4.0	Folliculitis	38	2.4	Rosacea	15	2.9
Herpes simplex	48	2.2	Molluscum contagiosum	4	3.2	Epidermal cyst	35	2.2	Herpes simplex	14	2.7
Folliculitis	44	2.0	Arthropod bite reaction	3	2.4	Herpes simplex	34	2.2	Pruritus	14	2.7
Psoriasis vulgaris	44	2.0	Alopecia androgenetica	2	1.6	Psoriasis vulgaris	30	2.0	Basal cell carcinoma	12	2.3

Table 3. Top 5 topical and systemic treatments (n = 2,222)

Topical treatments	n	%	Systemic treatments	n	%
Steroids	991	44.6	Antihistamines	246	11.1
Emollients	582	26.2	Antibiotics	137	6.2
Antibiotics	516	23.2	Antiviral agents	86	3.9
Antiseptics	264	11.9	Steroids	73	3.3
Antimycotics	242	10.9	Antimycotics	30	1.4

day as the skin disease appeared. The average waiting time before asking for urgent consultation was 66.8 days.

Extent of Consultation

Most consultations lasted 30 min (52.3%) or 15 min (40.1%); in 5.5% of the cases the physician needed more than 30 min.

Main Diagnoses

There were 238 different primary diagnoses, the 10 most frequent ones (table 2) together contributed to 52.93% of all diagnoses. The most frequent diagnoses were eczemas (all subgroups) (n = 550; 24.8%). The different types of eczema were eczema not otherwise specified (n.o.s.) (37.1%), atopic dermatitis (16.9%), irritative eczema (9.6%), nummular eczema (9.1%), seborrhoeic eczema (7.8%), dyshidrotic eczema (5.6%), contact allergic eczema (4.7%), xerotic eczema (4.7%) and stasis eczema (4.5%).

The totality of patients with malignant tumours was 71 (3.2%): 28 actinic keratosis, 16 basal cell carcinoma, 6 tumours n.o.s., 5 Bowen disease, 4 melanoma, 4 squamous cell carcinoma, 4 lymphoma/leukaemia, 3 metastasis of melanoma and 1 Kaposi's sarcoma.

We found 16 patients with life-threatening dermatoses (LTD): 11 (0.5%) angio-oedema, 3 (0.1%) severe erythema multiforme and 2 (0.09%) anaphylactic reaction.

Localisation of Disease

The most frequent localisation was the face (19.3%), the trunk (15.1%), generalized disease (13%) and the legs (11.9%).

Treatment

79.1% of patients received topical treatment, 25.8% systemic treatment and 3.1% another dermatologic treatment; 7.1% of cases received a combination of more than one treatment (table 3).

Aftercare

1,169 patients (52.6%) received a control appointment. In 103 (4.6%) cases follow-up was not registered. The most frequent diagnoses of patients with a control appointment were eczema (all) (n = 314; 26.9%), dermatitis n.o.s. (n = 67; 5.7%), dermatomycosis (n = 48; 4.1%), urticaria (n = 45; 3.8%) and psoriasis vulgaris (n = 33; 2.8%). 49 patients (2.2%) were hospitalized because of the severity of skin disease. The most frequent diagnoses leading to hospitalisation were eczema (all), herpes zoster and actinic keratosis.

Discussion

This study shows an analysis of several characteristics of patients receiving an urgent consultation at the outpatient service of the DDUHB. In 2007 there were 10,998 patients, and 2,222 of them (20.2%) were seen as an emergency. Table 1 shows an overview of the most important data.

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Referral Pattern

50% of all patients in our study visited a physician in private practice because of their current skin disease before coming to the DDUHB, but <30% were referred. The high number of patients without referral (71.3%) well reflects the 'freedom' of patients within the current Swiss healthcare system. In 2007, 78.8% of people had a conventional insurance (free choice of physician) [18]. Things are changing: there is an increasing quantity of other insurance types requiring referral from a GP before consulting a specialist (HMO, Managed Care, Telmed, etc.); similar observations have been made in other countries [19, 20]. The amount of patients referred from outside of the hospital (24.9%) reflect the physician's awareness in private practice of the possibility to send patients to our department for urgent consultations. In this context the DDUHB has a buffer function for all dermatologists of the region; similar observations have also been published previously [2, 6].

Duration of Skin Disease before Urgent Consultation

In Switzerland in 2007 the average waiting time for a new non-urgent dermatologic consultation was 4–6 months in private dermatology practice (data verified by the authors), whereas the waiting time at the DDUHB was 2–4 weeks (data verified by the authors).

There is a discussion whether missed appointments and the number of patients looking for an urgent dermatologic consultation are somehow correlated. Campbell et al. [21] and Canizares and Penneys [9] showed that patients with the following profile were at greater risk of missing their appointment: young, single or with young children, less disabled, employed, having a low level of education, with already a history of one missed appointment, scheduled to be seen by a resident physician, living distant from the hospital. Canizares and Penneys [9] showed a nonattendance rate of 23.9% for patients seen in the urgent care clinic if appointments were given within 1 week. This fact is somehow confirmed by our experience, with patients asking for a consultation, and if they do not get it as quickly as they would like, they 'transform their status' into an emergency, getting an appointment the same day. Oppenheim et al. [22] found 19–28% nonattendance in a review study, and Ingen-Housz-Oro et al. [3] had a nonattendance rate of 40% for control appointments after a first emergency consultation. Ambuel et al. [23] showed nonattendance rates of 10% for urgent appointments and of 30% for non-urgent appointments. It is important to consider the economic aspects of nonattendance. Behind an urgent dermatologic consultation there are some subjective non-dermatologic, non-medical factors such as anxiety, collisions with other appointments, holidays, partnership, cosmetic, working conditions, weather [9, 24], geography and many other reasons. The average waiting time of 66.8 days before asking for urgent consultation at the DDUHB well mirrors the implication of non-medical factors in this type of consultation.

In medicine there is still no consensus about the definition of emergency, in dermatology neither. Our 'way' to see patients on the same day, if they 'feel' that the given appointment is 'too late', is a preventive measure in reducing nonattendance – a strategy similar to that applied in other hospitals [9, 12].

Diagnoses

The majority of patients in our study had inflammatory diseases (57.9%), followed by infectious diseases (18.7%) and tumours (8.9%). Huber and Itin [25] presented a study with similar data at the annual Swiss Dermatology Conference in 2003.

Other similar studies showed an analogous spectrum of the most frequent diagnoses, with eczemas being frequently at the top of statistics [2, 5, 12, 25]. We suggest to intensify collaboration with nurses to assist patients with acute exacerbations of chronic skin disease, especially eczema (almost 25% of emergencies). Other studies [3, 5, 6, 12] counted more infectious diseases or drug eruptions than we did, reflecting the higher number of acute referred patients from in-hospital settings in these studies (about 50% versus 10% in our study). In-hospital patients are generally older, with many diagnoses and several drugs, facts that influence the spectrum of dermatologic diagnoses. Studies focusing on outpatients services show a very different spectrum of diagnoses, with more benign tumours and warts [11].

We found few malignant tumours (3.2% of all patients); an analogous result has been published recently [5]. One important reason for the low frequency of tumours in emergency dermatologic consultations is that tumours practically do not bear acute symptoms, having a more chronic character.

In our study we found only 16 patients with LTD. Few skin conditions are really life-threatening [1, 4]: toxic epidermal necrolysis, Stevens-Johnson syndrome, severe erythema multiforme, necrotizing fasciitis, staphylococcal scalded skin syndrome, Kawasaki disease, pityriasis lichenoides et varioliformis acuta, severe infections such as cellulitis, angio-oedema, severe skin burns, some bullous skin diseases and allergologic anaphylactic conditions. One reason for the low prevalence of LTD or infections

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in or study is that most patients with LTD or infections have systemic symptoms that make them go to the ED instead of the DD [8, 13]. As a consequence, several dermatology patients are admitted and treated in non-dermatology departments without any information to the DD. Dermatologists have frequently to 'fight' against other departments to get the chance to see and treat dermatologic patients. This is only one of many consequences of an economy-driven health system.

As in our study, most data from the literature lack information about sexually transmitted diseases, which is probably due to the existence of specialized consultations focusing on sexually transmitted diseases, taking away these patients from the 'main stream' of dermatologic emergencies [26].

In our study the amount of paediatric patients was low (5.7% of all patients) because the University Hospital of Basel has a separate paediatric department where all patients younger than 16 years are seen. The spectrum of skin diseases in our paediatric population was similar to that in other studies [14–17] – confirming the high prevalence of inflammatory and infectious diseases – and differed from the conditions seen in our adult and senior population (table 2).

Treatment

The most often prescribed therapies well reflect the spectrum of the most frequent diseases, with few exceptions. Topical antimicrobial treatments (34%) were used twice as much as the amount of skin infections (18.7%); this is a well-known occurrence because topical antimicrobial treatment is also used for non-specific and non-infective dermatologic diseases such as eczemas, rosacea and acne. Systemic treatment with antihistamines (11.7%) was prescribed almost three times more often than the number of patients with urticaria (4.1%). We all know that systemic antihistamines are an important treatment of itch in several dermatologic conditions. Only 0.9% of our patients received a painkiller, showing that pain is not a leading symptom in dermatologic emergencies. There are few studies documenting type and frequency of treatment in dermatologic consultations [10, 16, 27], showing also a predominance of topical treatments (64.2–80%).

Consultation

Our data show the short time needed for urgent dermatologic consultations, lasting <30 min in >90% of cases. The fact that in 70% of cases a diagnosis was achieved only with history and physical examination without further investigations is probably an important factor of quickness. In 30% of consultations at least one additional diagnostic procedure was necessary; these are quite rapid analyses that do not influence too much the short time of consultation.

Aftercare

52.6% of our patients received a control appointment, in a similar study [3] 41% of patients received a control consultation. The spectrum of controlled diagnoses well mirrored the spectrum of most frequent diseases with eczema at the top of them.

2.2% of our patients were hospitalized because of the severity of the dermatologic disease. In the literature we found other studies with similar quantities (2–3%) [6, 26], but also studies with higher amounts (4.7–8.2%) of hospitalised patients [2, 13, 15, 28]. The main diagnoses leading to hospitalization in our study were eczema and herpes zoster; the data in the literature are quite different, with skin infections, drug reactions and erythroderma as the main causes of hospitalisation [2]. We know that some skin infections and some drug reactions in our hospital are admitted to the ED and come secondarily to the DDUHB.

Limitations of Our Study

In our study we missed all patients with acute presentation of dermatologic diseases showing up at nighttime, on weekends or on official holidays. It is our experience that these numbers are quite small, but of course they contain some diagnoses that we missed, such as sexually transmitted diseases or some acute diseases seen at the ED.

Conclusion

The results of this study clearly show the spectrum of patients with dermatologic diseases who seek immediate attention for a condition lasting for an average of 2 months and not being serious in the majority of cases. The study underlines the necessity of a better collaboration between dermatologists, other physicians, GPs and nurses to improve the assistance of patients with acute exacerbation of chronic skin disease. Our study also mirrors the topics to teach students during the curriculum in medicine, so that future GPs are able to treat those dermatologic problems themselves. To avoid conflicts with patients and nonattendance, we suggest an 'open line' for urgent consultations where emergency is defined by the patients if the proposed appointment is not convenient to them.

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Disclosure Statement

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