

# Detailed review of dermatology department consultations in hospital and emergency settings at a tertiary medical center in Mexico

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## ABSTRACT

**Background:** Dermatological consultations are crucial in the treatment of hospitalized and emergency patients. This study examines the scope and characteristics of skin disorders at a tertiary Mexican medical center. **Materials and Methods:** This descriptive, observational, retrospective study spanned two years and involved 1,134 patients. It aimed to evaluate the types and frequencies of dermatological consultations in both emergency and inpatient settings. **Results:** Infectious dermatoses, particularly soft tissue infections, were the most common in emergency settings, contrasting with a higher incidence of eczema and dermatitis in inpatient care. The study presents comprehensive statistical analyses linking dermatological conditions with patient demographics and specific hospital departments. **Conclusion:** This study highlights the essential role of dermatologists in hospital environments, particularly, in identifying and treating infectious skin conditions. It underscores the necessity for specialized dermatological expertise in both emergency and inpatient departments, contributing significantly to patient care and management strategies in hospital settings.

**Key words:** Dermatology, Consultations, Skin Infections, Hospital, Emergency

## INTRODUCTION

Currently, the scope of dermatological healthcare extends beyond the outpatient clinic. Dermatologists are increasingly playing a pivotal and proactive role in the assessment of patients within hospital and emergency settings. However, there is limited knowledge regarding the primary reasons for such consultations. The nature and frequency of dermatological consultations may differ significantly depending on each country's healthcare system. This variation is influenced by factors such as the level of healthcare services provided by each institution (primary, secondary, and tertiary care), the accessibility to emergency, intensive care, and/or inpatient services, and whether the facility includes dermatology residents and offers round-the-clock dermatological evaluation. To the best of our knowledge, this study is the first to document the

reasons for dermatological consultations at emergency departments and in inpatient settings in Mexico.

## MATERIALS AND METHODS

This study is a detailed, observational, and retrospective analysis conducted at the National Institute of Medical Sciences and Nutrition Salvador Zubirán in Mexico City. Over a span of two years (March 1, 2021, to March 1, 2023), we reviewed cases that necessitated dermatological consultations within the emergency and inpatient services. As a premier tertiary care institution under the aegis of the Mexican Ministry of Health, the institute offers comprehensive medical care to adults with complex medical and surgical pathologies. Its infrastructure includes a multitude of medical disciplines, with 11 primary specialties, 14

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subspecialties, and 43 advanced specialty programs, particularly, serving patients with complicated rheumatologic, hematologic-oncologic, and infectious diseases. The emergency department is manned by residents and attending physicians in internal medicine, from which a substantial number of dermatological consultations are requested.

Patient evaluations were performed by dermatology residents, ranging from the first to the third year of their training, under the supervision of board-certified dermatologists with a minimum of a decade of clinical practice. Complex cases were reviewed collectively by an expert panel comprising 11 dermatology residents and 8 senior dermatologists.

The hospital's operational workflow is structured into 14 inpatient sectors, each equipped with 12 designated beds and complemented by emergency, intermediate, and intensive care facilities. A daily proactive search is instituted across these units to identify new referrals for dermatological evaluation.

Consultation hours predominantly spanned from 6:30 AM to 3:00 PM, supplemented by 24-hour availability of a resident dermatologist for urgent assessments as directed by the attending physicians. The average response time was approx. 1.5 hours, ranging from 1 to 3 hours.

In our statistical methodology, the median and range were utilized to describe the central tendency of continuous variables, given their distribution. Nominal variables were presented as percentages. We employed the chi-squared and Fisher's exact tests for categorical variables and the Mann-Whitney U test for continuous variables to compare the characteristics of patients with and without dermatological conditions. A  $p$  value of 0.05 or less was deemed statistically significant. All statistical analyses were performed with SPSS software, version 21.

## Ethics Statement

### Statement of Human and Animal Rights

All the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the 2008 revision of the Declaration of Helsinki of 1975.

### Statement of Informed Consent

Informed consent for participation in this study was obtained from all patients.

## RESULTS

### Baseline Demographic and Clinical Characteristics

In this robust assessment, we meticulously evaluated 1,134 dermatological consultations. The demographic examination revealed a balanced gender representation, with females constituting 50.2% of the cases. The median age of the cohort was 54 years, spanning a broad spectrum from 18 to 95 years. A preponderance of the consultations, accounting for 80.2% ( $n = 909$ ), were conducted in the inpatient setting, while the remaining 19.8% ( $n = 225$ ) were emergent consultations at the emergency department.

### Infectious Etiologies as Primary Consultation Causes

In this study, infectious etiologies emerged as the predominant reason for medical consultations, comprising 49.7% of the cases (564 consultations). Viral infections were the most prevalent, constituting 24.1% of these cases. Notably, herpes simplex virus (HSV) infections were the foremost cause of the consultations, accounting for 11.4%, followed closely by varicella-zoster virus (VZV) and herpes zoster infections, which comprised 5.8% of the cases. Fungal infections, with candidal intertrigo as the leading type, represented the second most common cause of the consultations, encompassing 18.3% of the cases. Bacterial infections were responsible for 15.7% of the cases, with non-purulent soft tissue infections being the predominant reason for consultation, accounting for 9.5% of the cases. Within this category, *Escherichia coli* was identified as the most frequently isolated pathogen, contributing to 2% of the cases (Table 1). Contrastingly, sexually transmitted infections and parasitic infestations were relatively infrequent, accounting for only 2.1% and 0.6% of the consultations, respectively.

### Non-Infectious Etiologies

#### Reactive dermatoses

In the realm of non-infectious etiologies for dermatological consultations, eczema stood out as the most frequent cause, representing 15.8% of the cases. Within this category, irritant contact dermatitis was identified as the primary etiology, accounting for 10.1% of eczema cases. Following eczema, various reactive dermatoses constituted a significant proportion of

**Table 1:** Etiological agents isolated in skin cultures from bacterial infections of soft tissues

Bacterial agent isolated in skin culture	
<i>E. coli</i>	2%
<i>S. aureus</i>	1.4%
<i>P. aeruginosa</i>	0.6%
<i>E. coli BLEE</i>	0.5%
<i>S. agalactiae</i>	0.5%
<i>K. pneumoniae</i>	0.4%
<i>P. mirabilis</i>	0.3%
<i>E. faecalis</i>	0.2%
<i>C. neoformans</i>	0.2%
<i>E. cloacae</i>	0.1%
<i>K. aerogenes</i>	0.1%
<i>M. colombiense</i>	0.1%
<i>M. morgani</i>	0.1%
<i>Nocardia sp</i>	0.1%
<i>S. lugdunensis</i>	0.1%
<i>S. pyogenes</i>	0.1%
<i>S. caprae</i>	0.1%
<i>S. marcescens</i>	0.1%
<i>Vibrio vulnificus</i>	0.1%
<i>S. maltophilia</i>	0.1%
<i>M. romeroi</i>	0.1%
Other agents	0.8%

STI: soft tissue infection Some patients had more than two infectious agents in the same tissue culture

the consultations. Notably, drug eruptions emerged as the third most common inflammatory skin condition prompting dermatological evaluations. Among these, the morbilliform rash was identified as the predominant manifestation.

### Oral pathology in dermatological consultations

In the context of dermatological consultations, disorders of the oral cavity accounted for 20.1% of the presenting concerns. It is noteworthy, however, that these oral pathologies were frequently secondary findings, identified during comprehensive dermatological examinations rather than being the primary reasons for consultation. Among these conditions, infectious etiologies were predominant. Oral candidiasis emerged as the most common infection, followed by oral herpes. Other notable conditions included aphthous ulcers, mucositis, and dermatoses associated with nutritional deficiencies.

### Consultation Locations: Inpatient Service vs. Emergency Department

Out of a total of 1,134 consultations, a significant majority, 909 (80.1%), occurred within the inpatient service, while the remaining 225 (19.9%) took place at the emergency department. Sex distribution revealed a slight predominance of female patients in inpatient consultations (50.8%), whereas at the emergency

department, sex distribution was relatively balanced. The median age for patients was comparable across both settings, being 52 years for inpatient services and 54 years for emergency department visits. Temporal trends indicated a higher frequency of emergency department consultations in May (12.9%), in contrast to a peak in inpatient consultations during March (10.6%) and August (10.1%). This pattern aligned with the commencement of the medical residency cycle in Mexico starting in March.

A comparative analysis of consultation reasons between emergency and inpatient services revealed notable differences. Infectious causes were more prevalent in emergency consultations (66.7%) compared to inpatient settings (45.5%). Particularly, soft tissue infections (both purulent and non-purulent) were significantly more common at the emergency department (38.7% vs. 9.9%;  $p < 0.005$ ). Conversely, eczema and dermatitis were more frequently observed in inpatient consultations (18.8% vs. 3%;  $p < 0.005$ ) (Tables 2 and 3).

Adverse drug reactions with cutaneous manifestations, specifically drug eruptions, were similarly represented in both the inpatient and emergency services (9% vs. 9.5%).

### Skin Biopsy Utilization and Rationale

In this study, skin biopsies were predominantly performed within the context of infectious conditions, primarily aimed at achieving microbiological isolation. This was followed by biopsies targeted at investigating retiform purpura, and finally, those conducted for augmenting diagnostic accuracy.

Among the 1,134 patients evaluated during the study period, 319 underwent skin biopsies, representing 28.2% of the patient cohort. Out of these, 193 biopsies were subjected to microbial culture, yielding positive results in 48% of the cases. For the remaining biopsies, the diagnosis of soft tissue infection was predominantly corroborated by clinical progression and the response to treatment.

### Incidence of Multiple Dermatoses per Patient

While a single dermatosis was the primary reason for consultation in most instances, subsequent assessment and physical examination often revealed the presence of two or more dermatoses in the same patient. Notably, in a majority of these cases, the secondary dermatosis

**Table 2:** Infectious etiology consultations in dermatology services: motives and causes

Infectious causes	Hospitalization	Emergency
	n=909 (80.1%) n=414 (45.5%)	n=225 (19.9%) n=150 (66.7%)
Viral infections	21.5%	33.2%
Herpes simplex	11.5%	10.6%
Varicella-Zoster Virus (VZV) infections	3.6%	14.7%
Condylomas	2.7%	1.7%
Viral warts	1.8%	0.9%
Molluscum contagiosum	1.2%	2.2%
Viral rash	0.4%	0.9%
Mpox	0.2%	1.8%
Herpangina	0.1%	0.4%
Fungal infections	19.4%	10.6%
Candidal intertrigo	9.5%	3.6%
Ringworm	7.7%	4.4%
Malassezia infections	1.4%	-
Opportunistic infections	0.4%	1.8%
Candidiasis (except intertrigo and oral cavity)	0.7%	0.4%
Phaeohyphomycosis	0.3%	-
Deep dermatophytosis	0.1%	0.4%
Bacterial infections ±	9.9%	38.7%
Non-purulent soft tissue infections	5.3%	26.7%
Purulent soft tissue infections	1%	8.4%
Folliculitis, furunculosis, and abscess	2.3%	0.9%
Impetigo	1%	0.9%
Mycobacterial infections	0.2%	1.8%
Erythrasma	0.1%	-
Sexually transmitted diseases	1.8%	3.1%
Herpes simplex	1.5%	0.9%
Syphilis	0.3%	1.8%
Lymphogranuloma venereum	-	0.4%
Parasitosis	0.6%	-
Scabies	0.2%	-
Pediculosis	0.4%	-

± Consultations for bacterial infections were significantly higher in the emergency room, with a  $p < 0.05$  from the Fisher's exact test

was either an oral cavity disorder or related to cutaneous appendages, such as the hair or nails.

## DISCUSSION

Previously conducted studies on hospital dermatology have reported various reasons for consultations in large centers around the world. In California [1], at the emergency department, the main causes of hospital admission were Stevens–Johnson Syndrome/TEN in 22% of the cases, followed by blistering diseases (pemphigus vulgaris 14%), and finally other severe drug reactions (11%). In that study, 204 patients were analyzed, and only 18% (37 out of 204) of cases required hospital admission, meaning that 82% were not considered genuine dermatological emergencies

(eczema, contact dermatitis, common psoriasis, and basal cell carcinoma). In Spain, there were three highly relevant studies related to this topic. The first of these was published in 2008 [2], aiming to evaluate the characteristics of dermatology consultations at the emergency department before the implementation of dedicated shifts for the specialty. This study was a turning point in the training and academic planning of the specialty in this country. It is highlighted that, in 2008, a total of 141,601 patients were evaluated at the emergency department, among which 3,662 had a skin condition. Among them, 96 pathologies were diagnosed, and the most common was urticaria (19.27%), followed by cellulitis (16.73%), and unspecified rash (8.06%). Following the implementation of specialized shifts for the specialty, a prospective study was conducted at the Ramón y Cajal University Hospital [3], where 861 dermatology consultations were performed over a two-month period (14.4 patients/day). A total of 131 diagnoses were made, and the most frequent causes were cellulitis (10.1%), acute urticaria (9.3%), and contact dermatitis (9.1%). Only half of the interconsultation visits were considered true emergencies, and it was highlighted that the on-call dermatologists demonstrated significant problem-solving capabilities. In 2016, another study was published [4], at a tertiary-level center in Spain, where the main reasons for emergency department visits in adults were acute urticaria (7.6%), contact dermatitis (6.1%), and drug eruptions (4.6%). When grouped by categories, the most common causes were infectious (23%), eczemas and dermatitis (15.1%), and procedural and surgical complications (9.5%). However, the primary causes of hospitalization were cellulitis (38.3%), drug eruptions (8.3%), and vasculitis (8.3%). Other centers around the world reporting their epidemiology include two Italian studies. The first [5] was a retrospective study conducted from 2006 to 2011, where the main reasons for emergency department consultations were infections (27.1%), followed by non-specific descriptive diagnoses (22.5%), physical or mechanical agent injuries (13.1%), eczema (10%), and insect bites (9.5%). The most frequent dermatological causes for hospital admission were physical or mechanical agent injuries (33.3%), infections (27.5%), drug eruptions (15.9%), and autoimmune diseases (7.4%). The second study [6] was a prospective, single-center study conducted over a three-year period focusing on patients who visited the emergency department, passed the triage, and were under observation, excluding non-urgent cases and those immediately discharged. The main

**Table 3:** Non-infectious etiology consultations in dermatology services

Etiologies	Hospitalization n=909 (80.1%)	Emergency n=225 (19.9%)
Eczema and dermatitis <sup>a</sup>	18.80%	3%
Irritant contact dermatitis	12.10%	1.80%
Seborrheic dermatitis	3.60%	0.40%
Lichen simplex chronicus	1%	0.40%
Stasis dermatitis	0.80%	-
Nodular prurigo	0.40%	-
Nummular eczema	0.40%	0.40%
Atopic dermatitis	0.30%	-
Cracked eczema	0.10%	-
Allergic contact dermatitis	0.10%	-
Urticaria and angioedema		
Acute urticaria	1.10%	1.30%
Angioedema	0.10%	0.40%
Reactive dermatoses and mechanical agents		
Simple intertrigo	2.20%	1.30%
Graft-versus-host disease	0.30%	-
Burns	0.10%	0.40%
Insect bite	0.30%	-
Eruptive pseudoangiomatosis	0.10%	-
Lichen planus	0.10%	-
Erythematousquamous diseases		
Psoriasis	0.80%	0.40%
Erythroderma	-	0.40%
Pityriasis rosea	0.10%	-
Pityriasis lichenoides chronica	0.10%	-
Drug reactions	9%	9.50%
Morbiliform eruption	4.10%	4.40%
Acneiform reactions	1.50%	-
Local reactions	0.90%	0.40%
DRSSS syndrome	0.10%	2.20%
Urticaria	0.40%	-
FEP	0.30%	0.40%
Chemotherapy-induced erythema	0.30%	-
SJS/TEN		0.90%
Methotrexate intoxication	0.10%	0.40%
Erythema multiforme-like	0.20%	-
Phototoxicity	0.10%	-
AGEP	0.10%	-
Serum sickness-like reaction	0.10%	-
SDRIFE	-	0.40%
Tumors	8%	13.30%
Benign		
Seborrheic keratosis and fibromas	1.60%	1.30%
Benign melanocytic lesions	0.90%	1.30%
Epidermal cysts	0.90%	-
Vascular	0.40%	0.90%
Porokeratosis	0.10%	0.40%
Appendage tumors	0.20%	-
Malignant		
Infiltration/metastasis	1%	3.10%
Kaposi sarcoma	0.60%	2.70%
Squamous cell carcinoma	0.70%	0.40%
Cutaneous T-cell lymphoma	0.30%	1.80%
Basal cell carcinoma	0.60%	0.40%
Melanoma	0.10%	0.90%
B-cell cutaneous lymphoma	0.10%	0.40%

(Contd...)

**Table 3:** (Continued)

Etiologies	Hospitalization n=909 (80.1%)	Emergency n=225 (19.9%)
Others (Porocarcinoma)	-	0.40%
Premalignant		
Actinic keratosis	1.10%	0.40%
Hair disorders	1%	0.40%
Nail apparatus disorders	-	-
Onychomycosis	8.9%	6.20%
Others	1.70%	-
Acute paronychia	0.80%	0.80%
Chromonychia	0.70%	0.40%
Ingrown toenail	0.60%	0.80%
Subungueal hematoma	3%	-
Oral cavity disorders		
Oral candidiasis	9.1	4.40%
Orofacial herpes	5.90%	2.60%
Others	3.70%	0.40%
ANGU	1%	0.40%
Mucositis	0.6	0.90%
Deficiency stomatitis	0.40%	0.40%
Deficiency dermatosis	-	0.40%
Verrocous Leukoplakia	0.50%	-
Neutropenic ulcers	0.30%	0.40%
Hairy tongue	0.20%	-
Infiltration	0.30%	-
Autoimmune diseases		
Systemic Lupus Erythematosus	1.80%	1.80%
Dermatomyositis	1.30%	3.60%
Systemic Sclerosis	0.50%	-
Asia syndrome	-	1.30%
Blistering diseases		
Pemphigus vulgaris	0.20%	0.40%
Bullous pemphigoid	0.10%	0.40%
Psychodermatosis	0.40%	-
Genodermatoses		
Epidermolysis bullosa	0.20%	0.90%
Neurofibromatosis	0.10%	-
Epidermodysplasia verruciformis	-	-
Pachydermoperiostosis	-	0.40%
Purpura		
Retiform	2.10%	9.30%
Non-retiform	4.50%	0.40%
Vasculitis	1.50%	4.40%
Sweat gland and sebaceous gland disorders		
Miliaria	0.90%	-
Acne	0.60%	-
Rosacea	0.30%	-
Hidradenitis suppurativa	0.10%	0.40%
Fulminant rosacea	0.10%	-
Neutrophilic dermatoses		
Pyoderma gangrenosum	0.30%	0.40%
Sweet syndrome	0.20%	0.90%
Others	0.20%	0.90%
Pigmentary disorders		
Postinflammatory hyperpigmentation	0.40%	-
Others	0.80%	0.40%
Vitiligo	0.40%	-
Postinflammatory hypopigmentation	0.10%	0.40%
Melasma	0.30%	-

(Contd...)

**Table 3:** (Continued)

Etiologies	Hospitalization n=909 (80.1%)	Emergency n=225 (19.9%)
Ulcers		
Pressure ulcers	5%	1.80%
Venous ulcers	0.40%	0.40%
Arterial ulcers	0.10%	-
Arterial and venous ulcers	0.20%	-
Ulcers caused by biopolymer injection.	0.10%	2.70%
Others	3.60%	0.90%
Non-autoimmune inflammatory conditions		
Stillxs disease	0.20%	0.40%
Others	0.10%	-
Deposition diseases		
Calcinosis cutis	0.70%	-
Amyloidosis	0.30%	0.40%
Others	0.40%	-
Gout	0.20%	0.40%
Xanthomas	0.10%	-
Miscellaneous		
Xerosis	2.50%	-
Chronic venous insufficiency**	1.50%	2.70%
Acute inflammatory edema	1.10%	0.90%
Pruritus	1.20%	-
Neglected dermatoses	1.10%	0.40%
Scurvy	0.30%	0.40%
Panniculitis	0.40%	-
Foreign body reaction	0.50%	-
Other nutritional deficiencies	0.40%	-

DRESS: drug reaction with eosinophilia and systemic symptoms  
 FEP: erythema pigmentosum erythema SJS/TEN: Stevens–Johnson syndrome/toxic epidermal necrolysis AGEP: acute generalized exanthematous pustulosis SDRIFE: symmetrical drug-related intertriginous and flexural exanthema ANUG: acute necrotizing ulcerative gingivitis  
 \*Consultations for eczema and dermatitis were significantly higher hospitalization, with a  $p < 0.05$  from the Fisher's exact test.

cause of admission was infectious (41.67%), primarily bacterial, followed by atypical rashes (13.98%), and vasculitis (11.29%). In France [7], the primary reason for dermatology consultations in the emergency department was infectious causes. In Turkey [8], a retrospective study conducted from 2017 to 2018 reported that infectious causes (86.9%), mainly viral, were the leading reason for emergency department consultations, followed by inflammatory dermatoses (5.4%), urticaria, and angioedema (14%). On the other hand, in the Asian continent, two notable studies stand out on this topic. The first, from India in 2003 [9], highlighted infectious causes as the main reason for consultation, followed by drug eruptions. In contrast, in Korea [10], the primary reason for dermatological consultations in the emergency department was urticaria and angioedema (68.1%), followed by infectious causes and non-specific descriptive diagnoses. Only 6.2% of the cases required hospital admission.

In Latin America, there have been two studies conducted to date. The first study was carried out in Brazil [11], a prospective study conducted in 2010, which reported that the main reason for consultations in hospitalized patients was infectious causes (25%). This study emphasized the significance of the dermatology service as a consultant for hospitalization, as dermatological assessment led to disease management that influenced admission in 31% of the cases. Furthermore, it aided in diagnosing and/or treating dermatological conditions unrelated to the reason for admission. In Colombia [12], a retrospective study was conducted, where the primary causes of the consultations at the emergency department and hospitalization were infectious causes (28.83%), with fungal causes being the leading factor (12.71%), followed by papulosquamous and eczematous dermatoses (16.62%).

Table 4 presents a summary of previously published studies from 1994 to 2023 on the main reasons for dermatological consultations in hospitals of different countries.

In this study conducted at a tertiary care hospital, a total of 1,134 dermatological consultations in patients during their stay in the emergency department and hospitalization were reviewed. On average, the institute's emergency department received 80,000 consultations during the study period. Consequently, dermatology consultations accounted for only 1.4% of all interconsultations. There was a predominance of the number of consultations in the hospitalization area (80% of the consultations). Other studies only included consultations at the emergency department [1-4,6-10,15-18,20-22]. Only in three studies, both populations were included [5,12,13], and in two studies, the difference between the studied population was not specified [11,19]. This may be explained by the magnitude of skin problems associated with hospitalizations for non-dermatological reasons, prolonged hospital stays, and polypharmacy, leading to multiple adverse skin reactions and cutaneous manifestations of systemic diseases, considering that our hospital is a reference center. Additionally, it is important to remember that, at the emergency department, patients come (in most cases) with serious and uncontrolled pathologies; therefore, similarly to what has been reported in other studies [2,14,21,23,24], we observed that skin infections predominated in dermatological consultations. Among these, soft tissue infections

**Table 4:** Studies on the causes of consultations in dermatology services

Author and year	Nationality/period	Study type	Number of patients	Sex/ age	Main consultation causes	Main hospitalization causes
Falanga (1994) <sup>13</sup>	USA 18.07.1989-30.03.1990	Prospective	n=591	NR/NR	Drug eruptions (8.8%) Atopic dermatitis (5.1%) Herpes simplex 5.1%	NR
González, A (2001) <sup>14</sup>	Spain 9.06.1998-8.07.1999	Prospective	n=1469 5.1/día	F/34 y	Acute urticaria (6.9 %) Contact dermatitis (6.4%) Dermatophytosis (5.4 %)	Generalized psoriasis (0.2%) Erythroderma (0.1%) Acute urticaria (0.1%)
Gupta, S (2003) <sup>9</sup>	India 4 m	Prospective	n=100	M /NR	Infections (32 %) Viral (59.3 %) Drug eruptions (27 %)	NR
Blaise, S (2004) <sup>15</sup>	France 3 m 2002	Prospective	n=117	F/NR	Infections (17.94%) Eczema (17.09%) Ulcers (12.82%)	NR
Legopupil, D (2005) <sup>16</sup>	France	Prospective	n=141 4.8/d	NR/41 y	Infections (27.6%) Eczemas (21%) Beningn tumors (6.7%)	5.5 % NR
Symvoulakis, EK (2006) <sup>17</sup>	Greece January to December 2003	Retrospective	n=3715	F/NR	ASD ** (35.7%) Infections (26.1%) Insect bites (10.2%)	4.8% NR
Wang, E. (2009) <sup>18</sup>	Singapore January to December 2007	Retrospective	n=4061	M/37.9 y	Varicella-zoster infection (20.8%) Dermatitis and eczema (11.6%) Urticaria (11.4%)	12.7 % (Necrotizing fasciitis, SJS/TEN/Blistering diseases and vasculitis)
Maza, A (2009) <sup>19</sup>	France 3 m December 2007-february 2008	Prospective	n=336	M/59 y	Infections (34.8%) Superficial mycoses (14 %) Undiagnosed dermatoses (26.4%) Wound and trophic disorders (24.4 %)	NR
Alexander, J (2009) <sup>1</sup>	USA 1.11.2004-8.06.2007	Retrospective	n=204	M/43 y	167 (82%) Eczema (8.9%) Scabies (7.2%) Contact dermatitis (6.6%)	37 (18%) SJS/TEN (22%) Pemphigus vulgaris (14%) Other severe drug reactions (11%)
Mancusi, S (2010) <sup>11</sup>	Brazil November 2009-February 2010	Prospective	n =313	F/45 y	Infections (25 %), - Fungal 13 % Eczema (15 %) Drug eruptions (14 %)	31 % NR
Martínez, M (2011) <sup>2</sup>	Spain 1.01.2008-31.12.2008	Retrospective	n=3662 10p/d	F/27.7 y	Infections (47.49 %) Cellulitis (16.76%) Acute urticaria y angioedema (20.13 %) Unspecified diagnosis (11.93 %)	Infections (84%) Cellulitis (70.85%)
Baibergenova, A (2011) <sup>20</sup>	Canada 01.04.2002-31.03.2007	Retrospective	n=866 976	M: F/39.4 y	Infections (52.1%) Dermatitis and eczema (16.7%) Urticaria (12.4%)	4% NR
Mirkamali, A (2012) <sup>21</sup>	France 1 m (2000-2010)	Retrospective	n=605	M/40 y	Infections (35.2 %) -Bacterial (21 %) Eczema (19.3 %) Urticaria (6.1 %)	NR/ 3 % Immediate hospitalization y 1.8% hospitalization for 24 hours
Kim, JY (2012) <sup>10</sup>	South korea 2003-2010	Retrospective	n=8332	M/29 y	Urticaria and angioedema (68.1%) Infections (8.1%) Exanthems (5.6%)	Cellulitis (43.5%) Urticaria (20.2%) Abscess, boil and carbuncle (5.2%)
Wakosa, A (2013) <sup>22</sup>	France 12.09.2011-14.11.2012	Prospective	n=2209 8.7p/d	F/33 y	Infections (24 %) Eczema (14%) Urticaria (3%)	Infections (0.76%) Ulcers (0.49%) Urticaria (0.22 %)
Grillo, E (2013) <sup>3</sup>	Spain 2 m 01.08.2011-01.10.2011	Prospective	n =861 14.4 p/d	F/47 y	Cellulitis (10.1%) Acute urticaria (9.3%) Contact dermatitis (9.1%)	Cellulitis (0.82 %) Severe drug reactions (SJS/TEN, DRESS, AGEP) (0.59 %) Generalized psoriasis (0.3%)

(Contd...)

Table 4: (Continued)

Author and year	Nationality/period	Study type	Number of patients	Sex/ age	Main consultation causes	Main hospitalization causes
Drago, F (2014) <sup>6</sup>	Italy 2011-2014	Prospective	n=372	F/51 y	Infections (41.67 %) bacterial, Atypical exanthems (13.98 %) Vasculitis (11.29 %).	Infections (41.67 %) bacterial, Atypical exanthems (13.98 %) Vasculitis (11.29 %).
Rubegni, P (2015) <sup>5</sup>	Italy 2006-2011	Retrospective	n= 12 226	F/NR	Infections (27.1 %), Nonspecific descriptive diagnoses (22.5 %) Trauma due to physical or mechanical agents (13.1%)	Trauma due to physical or mechanical agents (33.3%) Infections (27.5%) Drug reactions (15.9 %)
Isnard, C (2016) <sup>7</sup>	France First 15 days of hanuary and august 2008-2014	Retrospective	n= 657* 41p/d	M/40 y	Infections (33.5%) Inflammatory skin disorders (20.5 %) Drug reactions (0.9 %)	Infections (15 %) Inflammatory skin disorders (psoriasis 11.5%; eczema 3.4%) Bullous pemphigoid (6.7%)
Bancalardi, D (2016) <sup>4</sup>	Spain June 2013 – May 2014	Prospective	n= 3084/ 8.45p /d	F/44 y	Infections (23 %) Viral (10.4%) Eczema (15.1%) Procedures and complications of dermatological surgery (9.5%)	Cellulitis (38.3 %), drug reactions (8.3 %) Leukocytoclastic vasculitis (8.3%).
Oskur, E. (2018) <sup>8</sup>	Turkey 01.05.2017-01.05.2018	Retrospective	n=444	M/44 y	Infections (86,9 %) viral Inflammatory skin disorders (5.4%) Urticaria and angioedema (14 %).	14 % Cellulitis Erysipela Urticaria
Vergara, J (2018) <sup>12</sup>	Colombia 2016-2'017	Retrospective	n=1000	M/56 y	Infections (28.83 %) Fungal Papulosquamous dermatoses and eczematous dermatoses (16,62 %). Drug reactions (11.81%)	GVHD (32.08%) Cellulitis (22.64%) DReSS (7.55%)
This study (2023)	Mexico March 2021-March 2023	Retrospective	N=1134	H/54 y	Infections 49.7% Reactive dermatitis 15.8% Drug reactions 9.25 %	

\*Random sample \*\*ASD: allergic skin disorders: atopic dermatitis, adverse drug reaction, Erythema multiforme, erythema nodosum AGEP: acute generalized exanthematous pustulosis GVHD: graft-versus-host disease SJS/TEN: Stevens–Johnson syndrome/toxic epidermal necrolysis F=female p/d=patients/day M=male m=months NR=not reported y=years

accounted for 38.7% of the cases, compared to the 9.9% reported in the hospitalization service.

In contrast to hospitalization, where consultations for eczema and reactive dermatitis predominated (18.8% vs. 3%) ( $p < 0.005$ ), it is worth mentioning that all these consultations were requested for patients who were already hospitalized for a non-dermatological cause.

This is the first study reporting the findings of consultations for oral pathology, accounting for 20.1% of the reasons for consultation. Although the majority of them were not the main reason for consultation yet rather findings from a comprehensive dermatological review, it is important to mention

them. Oral candidiasis predominated, followed by oral herpes, GUNA, mucositis, and deficiency dermatoses.

Consultations for adverse drug reactions with cutaneous manifestations (pharmacodermias) were similar in both services (9% vs. 9.5%). Most of them were non-severe cutaneous adverse reactions to drugs, among which morbilliform rash predominated. The drug most frequently associated was antibiotics. Regarding severe cutaneous adverse reactions, eight cases of DRESS syndrome and two cases of Stevens–Johnson syndrome (SJS/TEN) were observed.

Finally, we illustrate some of the reasons for consultation that we had in this study (Fig. 1).



**Figure 1:** (a) Oral ulcers caused by the herpes simplex virus. (b) Pseudomembranous candidiasis alongside seborrhea. (c) Case of eczema. (d) Intertrigo caused by *Candida spp.* (e) Soft tissue infection by *Vibrio vulnificus*. (f) Mox infection. (g) Seborrheic dermatitis of the scalp.

## CONCLUSION

This comprehensive study significantly advances the understanding of dermatological consultations in Mexican hospital environments. It underscores the prevalence of infectious dermatoses, notably soft tissue infections, in emergency settings, resonating with trends observed in Brazil and Colombia. A distinctive aspect of this research is its focus on the frequency of oral pathologies, particularly, oral candidiasis, in these consultations. Moreover, it highlights the similar incidence of drug-induced skin reactions in both inpatient and emergency scenarios. This investigation emphasizes the vital role of dermatology in a multidisciplinary hospital setting, highlighting its importance in early diagnosis and management of skin conditions. Such interventions are critical for reducing complications and hospital stay durations, and for diagnosing systemic diseases. The findings point toward the need for specialized dermatological training and resource allocation in Mexico and hint at the development of future management protocols to enhance patient care. This study not only contributes to the global dermatological literature yet also emphasizes the integral role of dermatology in comprehensive, multidisciplinary healthcare.

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