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A cross sectional study of dermatological emergencies at tertiary care center.

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Abstract

Introduction: A Dermatological emergency is defined as a cutaneous condition requiring early and prompt diagnosis, hospitalization, monitoring and intensive care to minimize associated mortality and morbidity.

Aim: To study epidemiological profile, clinical pattern and morbidity of patient with derma to logical emergencies.

Methods: A cross sectional study of 85 patients was done from March 2021-November 2021. Patients attending emergency department having primary derma to logical manifestations were enrolled. A detailed history and clinical examination was done to determine extent of skin and mucous membrane involvement. Diagnosis was made clinically and relevant investi gations were advised.

Results: Most common age group was 31 to 40 year, with male to female ratio being 1: 0.73. Out of 85 cases, 51 (60%) were treated in the emergency department and advised follow up in OPD, while 34 (40%) cases who required intensive care were admitted.

Most common conditions among patients who did not require hospitalization were acute urticaria (35.29%) followed by exanthema Tous eruption (15.69%). Most common cause of hospitalization was erythroderma (17.65%) and vesiculobullous disorder (17.65%) followed by SJS/TEN (11.76%). Mucosal involvement was seen in 27.4% of cases.

Most common type of urticaria was idiopathic (55.56%). Most common cause of exanthema Tous eruption was viral infections (62.5%). Most common etiology for erythro derma was psoriasis (50%). SJS/TEN, erythro derma and vesiculobullous disorders were associated with high morbidity requiring hospitalization.

Conclusion: As such a derma to logical emergency represents a minute proportion of all the medical emergencies, it requires special care and attention. Many of the patients did not require hospitalization and can be treated on OPD basis. Only few derma to logical conditions in view of impending and acute skin failure required hospitalization.

Keyword: Derma to logical emergencies, emergency department, urticaria, erythro derma, vesiculobullous disorders.

Introduction

It is generally believed that dermatological practice, which takes place mainly in an outpatient setting (OPD), is not often associated with emergencies. It is, however, not unusual to receive calls from the emergency department. It has been seen that dermatological conditions comprise approximately 5–8% of all cases presenting to the emergency department.[1]

Derma to logical emergencies comprise conditions that require early diagnosis, hospitalization, monitoring and multidisciplinary intensive care to minimize the associated morbidity and mortality. This information will be useful in identifying common and important skin diseases that need to be recognized at the point of primary care, so that the proper initial treatment and referrals can be instituted. [2,3]

Dermatological emergencies can be divided into primary, in which the skin is the primarily involved organ or it is associated with surgical and medical emergencies, where cutaneous lesions indicate impending or underlying systemic involvement. Mortality and morbidity due to dermatological causes can occur due to sudden, severe alterations in the anatomy and physiology of skin and can lead to acute skin failure.[4] However, only few studies were available to characterize the nature of these conditions.

The common dermatological conditions encountered in the emergency department include urticaria, angioedema, erythroderma, Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN).[4]Conditions like SJS and TEN, staphylococcal scalded skin syndrome and pemphigus vulgaris need to be detected early and treated aggressively as they may be life threatening.[5]

Acknowledgment of Dermatological intensive care unit need has drastically increased in current times. This is due to the increasing incidence of acute skin failure being reported.[6] A dedicated intensive care unit is comprised of a team of dermatologists, pediatricians or physicians, critical care physicians, and skilled nursing staff.[7]

This cross-sectional study was carried out in order to study the epidemio logical profile, clinical pattern and etiology of underlying commonly encountered derma to logical conditions in the emergency department at new civil hospital, Surat.

Materials and methods

Source of data

Patients requiring primary dermatological consultation in the emergency department at tertiary care hospital, Surat.

Method of study

We conducted a cross-sectional study of dermatological emergencies at tertiary care hospitals for a period of six months from March 1, 2021 to November 30, 2021. Total 156 emergency calls were attended from the casualty handling emergency conditions during a period of 6 months. Among 156 emergencies, 93 having primarily dermatological conditions and 59 having primarily non dermatological emergencies referred for skin conditions. Out of 93 primarily dermatological emergencies, 85 were willing to participate in the study. Written informed consent was taken from the person/ parents enrolled in the study.

Detailed history including duration of skin lesions, initial site, progression, aggravating factors, relieving factors and history of any medication was collected. General physical examination, systemic examinations, derma to logical examination including hair, scalp, nails, palm, soles, genitalia and mucosa was done. Investigations like complete hemogram, liver function test, renal function test, electrolytes, blood urea, blood sugar level, KOH mount, Tzanck smear, Gram stain, pus culture, skin biopsy and imaging studies were done if required. Patients requiring interventions of other specialties were

also done and recorded. Patients having extensive cutaneous involvement or variable cutaneous involve Ment with hemo dynamic instability were admitted. All the cases were numbered serially and photographed whenever necessary after taking informed valid consent. All data was entered using MS Excel

software and analysis was done using MS Excel and SPSS software.

Selection criteria

Inclusion criteria

All the patients presenting with primarily dermatological conditions to the emergency department are willing to participate in the study.

Exclusion criteria

Patient presenting with a primarily non dermatological condition and seen in the emergency department on a referral basis.

Results

A total of 85 cases with primary dermatological conditions were enrolled in our study. Age of the patients ranged from 9 months to 83 years with mean age being 33.45 years. Highest number of patients in the age group of 31-40 years were 31 (36.47%). Forty-nine (57.6%) were male and 36 (42.4%) were female patients. Male to female ratio was 1: 0.73.

Most common presenting symptom was pruritus seen in 53 (62.35%) patients followed by rashes/redness which was seen in 47 (55.29%) patients. A comparison of clinical characteristics between hospitalized and non-hospitalized patients showed a higher incidence of acute onset of lesions and pruritus in patients who were not-hospitalized. However, the incidence of aggravation of underlying chronic conditions, generalized skin lesions, pain and erosion or ulceration was higher in patients who were hospitalized.

Table 1: Comparison of clinical characteristics between hospitalized and non-hospitalized patients

	Clinical characteristics	**Non-admitted (n=51)**	**Admitted (n=34)**
Time of onset	Acute (<1 months)	92.16%	61.76%
	Aggravation of underlying chronic condition	7.84%	38.53%
Site of involvement	Localized (<10% BSA)	50.98%	11.76%
	Generalized (≥10% BSA)	49.02%	88.24%
Signs/ symptoms	Redness/erythema/purpura	68.63%	52.94%
	Pruritus	45.10%	70.59%
	Pain	31.37%	52.94%
	Fluid filled lesion/ vesicles	27.45%	35.29%
	Erosion/ ulcer	11.76%	51.02%
	Exfoliation	5.88%	29.41%

64 (75.29%) patients had only skin involvement, while 21 (24.7%) had both skin and mucosal involvement. Among 85 cases, 32 patients were required to be referred to other departments for multisystem involvements.

51 (60%) patients presented to the emergency department who were not required intensive care. These patients were treated on an OPD basis. Detail regarding clinical conditions which do not require hospitalization as mentioned in table no.2.

Table 2: Dermatological conditions does not required hospitalization

Conditions	Frequency	Percentage
Erythroderma	6	17.65%
Vesiculobullous disorders	6	17.65%
SJS/TEN	4	11.76%
Leprosy with lepra reaction	4	11.76%
Acute lupus erythematosus	3	8.82%
Angioedema	3	8.82%
Pustular psoriasis	2	5.88%
Erythema multiforme	2	5.88%
Disseminated eczema	2	5.88%
Norwegian scabies	1	2.94%
Purpura fulminans	1	2.94%
Total	34	100%

Table 3: Derma to logical conditions required hospitali zation

Conditions	Frequency	Percentage
Acute urticaria	18	35.29%
Exanthema Tous eruption	8	15.69%
Chickenpox	4	7.84%
Scabies	2	3.92%
Cellulitis	2	3.92%
Pellagra dermatitis	2	3.92%
Herpes zoster	2	3.92%
Primary herpes simplex gingivo-stomatitis	2	3.92%
Insect bite hypersensitivity	2	3.92%
Vasculitis	2	3.92%
Irritant contact dermatitis	2	3.92%
Extensive tinea infections	1	1.96%
Chronic plaque psoriasis	1	1.96%
Genital herpes	1	1.96%
Pediculosis capitis	1	1.96%
Extensive miliaria	1	1.96%
Total	51	100%

The commonest conditions presented to dermatological emergencies were urticaria, comprising 35.29% of all primary dermatological emergencies. Total 21 cases of urticaria were noted, of which 18 patients of acute urticaria (as per mentioned in table: 2) having cutaneous lesions only alone and treated on OPD basis while 3 patients had urticaria with angioedema (as per mentioned in table: 3) required indoor management. Most common cause of acute urticaria was idiopathic (66.67%) followed by drug induced (28.57%) and due to food allergy (4.76%). Among exanthema Tous eruptions, 62.5% had viral exanthem and 37.5% had drug induced exanthema Tous eruptions.

Out of a total 85 patients presenting to the emergency department, 34 (40%) patients were required intensive care and monitoring. Among which 20 (58.88%) patients were males and 14(41.18%) were females. Detail regarding clinical conditions which required hospitali zation as mentioned in table no.3.

Commonest cause of erythroderma was chronic plaque psoriasis followed by adverse cutaneous drug reactions and atopic dermatitis. Among vesiculobullous disorders, the most common cause was pemphigus vulgaris followed by bullous pemphigoid and pemphigus foliaceus. Four patients having leprosy with lepra reactions were also presented to the emergency department. Among which 3 patients had type 2 reaction and one patient had type 1 reaction.

Cutaneous drug eruptions were observed in 16 (18.82%) patients. Of these, 6(37.5%) had urticaria, 4 (25%) had SJS/ TEN, 3 (18.75%) had exanthema Tous eruption, one (6.25%) had erythroderma, one (6.25%) had erythema multiforme and one (6.25%) had angioedema.

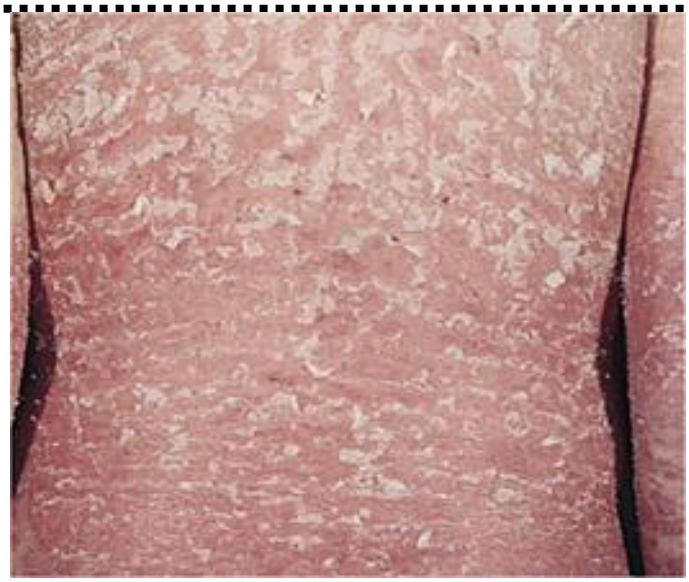

Figure 1: Erythroderma

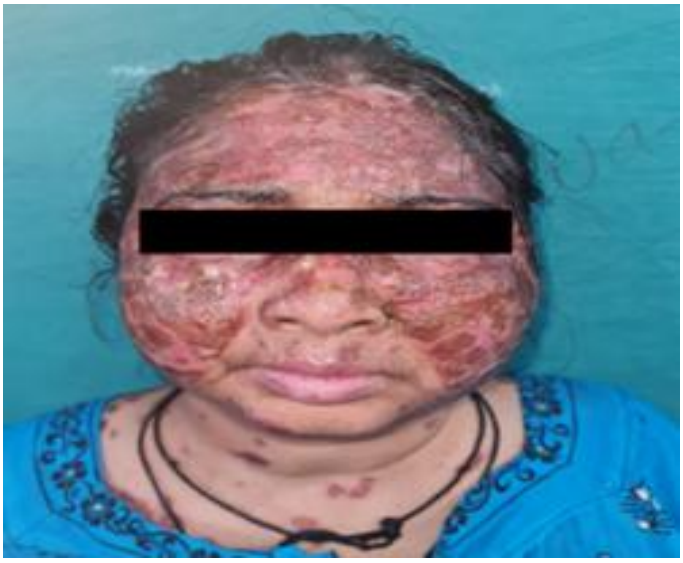

Figure 2: Acute lupus erythematosus

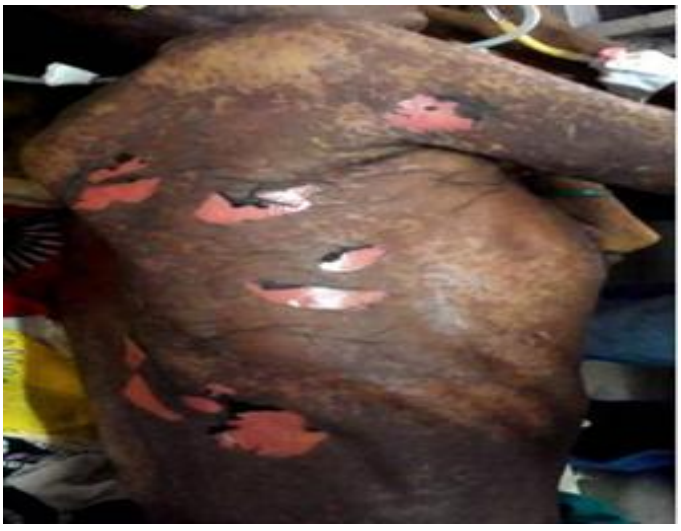

Figure 3: Toxic epidermal necrolysis

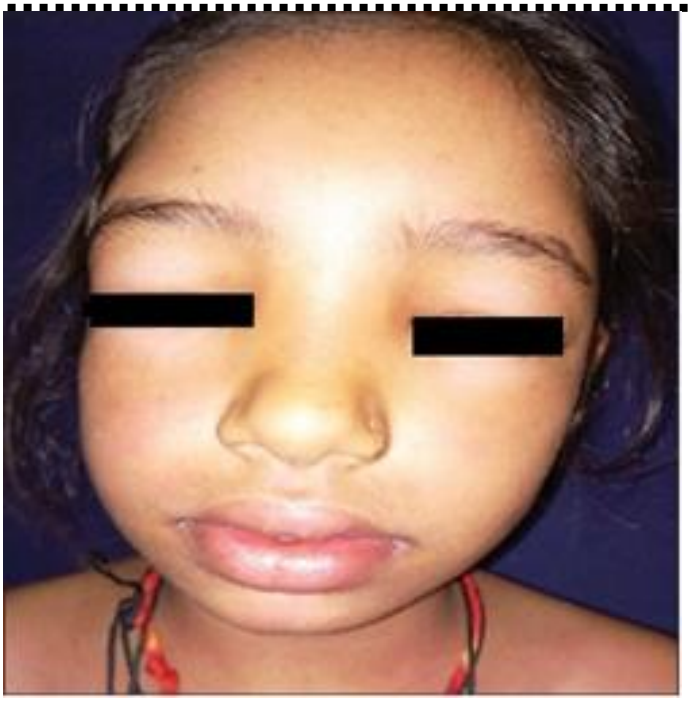

Figure 4: Angioedema

Discussion

Dermatological cases are mostly managed on an outpatient basis but there are some conditions which present to the emergency department and require prompt management and monitoring in the intensive care unit.[1]

In our study, the age of the patient ranged from 9 months to 83 years with mean age 33.45 years. In the study done by Suvarna Samudrala et al[8] the age of the patients ranged from 1 year to 94 years, with the mean age being 30.24 years. In our study, 57.6% were male and 42.4% were female. In the study done by Jack et al[1] 62% were male and 38% were female.

There was a higher incidence of pruritus and acute onset of lesions in patients who were not hospitalized compared to those who were hospitalized. However, the incidence of pain and erosion/ulceration were higher in patients who required hospitalization. In the study done by Suvarna Samudrala et al[8]showed high incidence of pain and ulceration in admitted patients while in the study conducted by Jack et al[1]there was a higher

incidence of acute onset, generalized lesions, and pruritus in admitted patients.

In our study, common conditions among patients managed at the emergency department and not required hospitali zation were urticaria, infections and cutaneous drug reactions. In the study done by Gupta et al[2]in which infections and drug reactions were the most common conditions. Only one (1.96%) patient with a genital herpes was seen. In the study done by Wang et al[9] 1.01% patients with venereal diseases presented to emergency.

In our study, 40% patients presenting to the emergency department required hospitalization while in the study done by Suvarna Samudrala et al[8] showed 29.1% patients required hospitalization. The most common causes for hospitalization in our study were erythroderma (17.65%) and vesiculobullous disorders (17.65%). In the study done by Jack et al[1] where erythema multiforme or SJS were the most common conditions.

Out of total 85 cases, 12 (6 patients of erythroderma, 4 patients of SJS/TEN and 2 patients of pemphigus vulgaris) patients had BSA involvements of >90% which resulted inability to maintain the core body temperature, percutaneous loss of fluid, electrolytes, and proteins. It is indeed a dermatological emergency which requires hospitalization as patients are prone to rapid clinical deterioration and require prompt intensive care management. It can be challenging for healthcare providers to identify the patients at risk for skin failure.[10]

Conclusion

Among 85 total patients, 60% patients do not require hospitalization while only 40% patients require hospitalization. Most common dermatological condition presented at the emergency department was urticaria which may not require hospitalization and is managed on OPD basis.

Dermatological emergencies are representing less among medical emergencies and many of the patients did not require inpatient care but prompt therapeutic intervention helped to alleviate the acute symptoms in anxious patients. In addition, various dermatological conditions like erythroderma and SJS/TEN require intensive care admission and multidisciplinary approach in management in view of impending and overt acute skin failure. Awareness of these dermatological conditions may be helpful to healthcare professionals for better management of dermatological emergencies.

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