ORIGINAL RESEARCH PAPER
Volume - 10 | Issue - 04 | April - 2021 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

STUDY OF DERMATOLOGICAL EMERGENCIES AT A TERTIARY HEALTH CARE INSTITUTION

Dermatology

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ABSTRACT

Introduction:- Dermatological emergencies represent 8-20% of the emergencies presenting to emergency department. There are varying etiologies for these emergencies from neonatal age to adults . **Aims and objectives:-** To improve awareness of the need for intensive medical care with a multidisciplinary approach by a team of specialist doctors (physicians , intensivists, paediatricians etc.,) along with dermatologists thus to decline the fatality & morbidity rate in dermatological emergencies . **Methodology:-** All cases presenting to DVL OP , Casuality , intensive care units of the study centre requiring emergency dermatological consultation were included . The results are analysed for age , sex wise distribution and total number of cases as per etiology and outcome of the disease. **Results:-** Out of the 158 cases studied over a period of 9 months , 88 were males and 70 were females, among which 35 were children. True dermatological emergencies were 46 , other 112 required dermatological consultation on emergency basis . The main etiological factors are infections(34) , drug reactions (27) , vesiculobullous dermatoses(17) etc. Mortality seen in 4 cases . **Conclusion:-** During the study we learnt that multidisciplinary approach improves the quality of management and final outcome. Gaining proficiency at an institutional level which has a DICU set up with multidisciplinary approach will enable upcoming dermatologists to establish a hospital set up which can manage dermatological emergencies confidently instead of limiting to clinical setup.

KEYWORDS

INTRODUCTION:

There is need for awareness of dermatological emergencies among medical fraternity. Many consider dermatology as a non-emergency and outpatient centered speciality despite the fact that dermatological emergencies contribute approximately 5-8% of the cases presenting to the emergency department with variations ranging from 4.8%- 21% in different studies. [1]

Dermatological emergencies can be divided into primary dermatological emergencies(where skin is primarily involved) and dermatological diseases associated with medical or surgical illness, where cutaneous involvement may hearld the underlying systemic involvement.[1]

Like any other organ , the severe impairment of structure and function of skin leads to skin failure. Many of the true dermatological emergencies can lead to potentially fatal 'Acute Skin failure'[2]. Early diagnosis and aggressive treatment are essential to decrease mortality and morbidity. With the increasing incidence of cases of acute skin failure and true dermatological emergencies at tertiary health care centres, the need for dermatological intensive care unit is widely emphasized.

There are varying etiologies for these emergencies from neonatal age to adults. (summarised in table 1)

Table 1 – Common dermatological emergencies

Causes	Diseases
Vesiculobullous disorders	Genetic-Epidermolysis bullosa Autoimmune-Pemphigus ,pemphigoid group of disorders
Infections	Bacterial-Staphylococcal skin scalded syndrome,meningococcemia,rickettsial fevers,cellulitis, Type1 and type2 reactions,neuritis related to Leprosy. Viral-hemorrhagic fevers, herpes and varicella infections.
Erythroderma	Psoriasis , Eczemas, drug induced
SCARs	TEN,DRESS,SJS,AGEP
Vascular disorders	Urticaria, purpura fulminans,vasculitis(SLE,drug induced)
Physical agents	Burns
Related to STDs	Genitoulcerative diseases,bubo formation, phimosis, paraphimosis
Bites / stings/venom	Bees , fire ants.

SCARs-Severe Cutaneous Adverse drug Reactions, TEN-Toxic Epidermal Necrolysis, DRESS-Drug Rash with Eosinophilia and Systemic Symptoms, SJS-Steven-Johnsons Syndrome, AGEP-Acute Generalised Exanthematous Pustulosis, SLE-Systemic Lupus Erythematosus, STDs-Sexually Transmitted Diseases.

Though these emergency cutaneous presentations are few in number they should be immediately identified and rapidly addressed with a ***multidisciplinary care*** as these conditions are associated with *compromised skin structure* & *function* leading to significant morbidity & mortality .

The goals of our study were to study the clinical profile of dermatological emergencies in the study center, to improve awareness of the need for intensive medical care with a multidisciplinary approach by a team of specialist doctors (physicians , intensivists, paediatricians etc.,) along with dermatologists thus to decline the fatality & morbidity rate in dermatological emergencies.

Patients and methods:

Methodology:

It is prospective hospital based time bound study, data collected for a period of 9 months from September 2018 to May 2019. Written informed consent was taken from patients and attendants enrolled in the study and in case of age <18 years , the consent was taken from parent or guardian.

Source of data-

1) patients requiring dermatological consultation in emergency department
2) patients requiring emergency dermatological consultation admitted in medical, surgical and pediatric intensive care units and wards
3) dermatological emergencies presenting directly to DVL outpatient department

Detailed history and examination were done for each patient and categorized into two groups – dermatological emergencies requiring admission and dermatological emergencies which can be treated on outpatient basis The results were analysed for age, sexwise distribution, total number of cases as per etiology, need for admission and outcome of the condition.

RESULTS:
A total of 158 cases of dermatological emergencies presenting to the study center were included in the study over a period of 9 months.

88 were male and 70 were female, children were 35 and adults were 123. The age ranged from 1 day old neonate to 80 years

The cases were divided into two groups based on the need of admission –
1) true dermatological emergencies(requiring admission)- 46
2) cases requiring emergency dermatological consultation but can be managed on OP basis – 112

The most common condition in the non admitted patients is acute urticaria followed by viral infections ,bacterial infections and eczema. The clinical profile of patients in the first and second group are summaried in table 2 and 3 .

Table 2 – Clinical profile of True dermatological emergencies

Cause	frequency	Percentage
Vesiculobullous disorders	**18**	**39.13%**
Pemphigus vulgaris	10	21.7%
Pemphigus foliaceous	1	2.17%
Bullous pemphigoid	7	15.2%
Drug reactions	**14**	**30.4%**
SJS	7	15.2%
TEN	4	8.6%
DRESS	2	4.3%
AGEP	1	2.17%
Erythroderma	**10**	**21.7%**
Psoriasis	7	15.2%
Drug induced	2	4.3%
ABCD	1	2.17%
Infections	**4**	**8.6%**
Necrotising fascitis	1	2.17%
Hansens with ENL	2	4.3%
Hemorraghic varicella	1	2.17%

AGEP-Acute Generalised Exanthematous Pustulosis, ENL-Erythema Nodosum Leprosum

Table 3 – Clinical profile of dermatological emergencies in patients managed on outpatient basis

Clinical diagnosis	Frequency	Percentage
Acute Urticaria +/- angioedema	28	25%
Viral infections – Varicella,herpes simplex inf., &herpes zoster	19	16.9%
Bacterial infections-cellulitis, impetigo, furuncles, lepra reaction	14	12.5%
Eczemas-ICD, Atopic dermatitis, ACD to hair dye, etc,.	15	13.3%
Drug reactions-maculopapular rash, FDE, vasculitis	10	8.9%
Others (insect bite reactions , paraphimosis ,acute SLE, sweet syndrome,vasculitis,burns& scalds pyoderma gangrenosum, necrobiosis lipoidica, diaper dermatitis etc ..,)	26	23.21%

ICD-Irritant Contact Dermatitis, ACD-Allergic Contact Dermatitis, FDE-Fixed Drug Reactions.

Of the 46 true dermatological emergencies, majority were vesiculobullous disorders followed by severe cutaneous adverse drug reactions (SCAR) and erythroderma. Other conditions requiring admission were cellulitis, hansens disease with type 2 reaction . The causes for erythroderma were psoriasis,drug induced followed by eczemas. Neonatal dermatological emergencies seen in our study are epidermolysis bullosa and collodion baby .

Of the 46 true emergencies 33 were admitted in DVL inpatient ward, 7 in AMCU, 2 in PICU, 4 in NICU, mortality was noted in 4 cases. Of the 33 cases admitted in DVL inpatient ward only 1 mortality was noted.

DISCUSSION:
Emergencies in dermatology may result from primary skin diseases and systemic disorders with cutaneous manifestations. In the present study the cases were categorised into 2 groups based on requirement of admission.

Out of 158 cases, 46(29%) were true dermatological emergencies , vesiculobullous disorders(36.2%) were most common, similar to Mitra et al[3] (29.6%) whereas in Samudrala et al[4]study erythroderma(40.3%) was most common.

This study highlights the importance of dermatological conditions necessitating admission especially in a ICU set up, as these patients have severe compromised skin structure and function. These patients require longer hospital stay,multidisciplinary approach because of higher chances of mortality

Skin failure should be considered as distinct entity by other medical fraternity, and is comparable to other major organ failure with high mortality

Emergency is defined as a risk perceived by a doctor or a patient to life, limb or the structure/function of an important organ of the body. Skin failure fulfils the definition of an emergency defined as loss of temperature control with inability to maintain core body temperature , failure to prevent percutaneous loss of fluid,electrolytes and proteins with resulting imbalance and failure of mechanical barrier to prevent penetration of foreign materials.[5]

A sound understanding of aetiopathogenesis and complications of skin failure emphasises the necessity of dermatological ICU set up. Immunosuppression due to increased age, prolonged intake of steroids, and increased use of multiple drugs have lead to increased incidence of recalcitrant and extensive dermatosis, this has the potential to eventuate acute skin failure[2]. Prompt initiation of appropriate treatment and excellent double barrier nursing are the principles of management of true dermatological emergencies[1].

There are very few institutes in India equipped with dermatological ICU. These patients need special care and the requirements of the Dermatological ICU are different and need not be as sophisticated as neuro/cardio ICU . The temperature maintained in DICU is higher to combat the hypothermia due to compromised skin structure ,also the risk of acquiring secondary bacterial infection is higher[6] hence reverse barrier nursing is a key aspect in the management. Hence the patients need to have a separate ICU set up with favourable environment, to decrease the duration of hospital stay, mortality and morbidity.

Majority of the cases could be treated on OP basis ,immediate and appropriate therapeutic intervention helped in alleviating the symptoms especially in drug rash,genitoulcerative diseases, paraphimosis.

There is need for awareness among healthcare professionals evaluating the patients in emergency department about the dermatological emergencies

Of the 33 cases admitted in DVL inpatient ward only 1 mortality was noted. Which supports the opinion of Dr. Jorizzo , *"In most cases of a true cutaneous emergency, the patient needs to be managed jointly,where the dermatologist is the advisor . We are very good at co-managing patients with lots of input to other specialists."*[7]

Challenges faced during the course of this study were difficulty in securing IV lines, ascertaining exact diagnosis, management of steroid induced electrolyte imbalances ,diabetes hypertension , renal complications due to cyclosporine and cyclophosphamide ,hepatic complications due to drugs like methotrexate and Dapsone . These problems were addressed with multidisciplinary approach.

CONCLUSION -
So from our study, we could emphasize the need for the setup of *DICU* (not as highly sophisticated as cardiac/neurosurgical ICU, but) atleast to meet *the initial and immediate supportive* measures like securing IV lines, to manage the complications like steroid induced electrolyte imbalances, diabetes, hypertension, infections as most of the dermatological emergencies were needed to be managed initially with high doses of steroids.

Gaining proficiency at an institutional level which has a DICU setup with *multidisciplinary approach* will enable upcoming dermatologists to establish a hospital setup which can manage dermatological

emergencies confidently instead of limiting to clinic setup.

ACKNOWLEDGEMENTS:
We thank DR.S.Nageswaramma, our beloved professor and HOD of the department of DVL,Guntur Medical College for her encouragement and expert guidance throughout all aspects of our study and colleagues of other departments who helped us during the study.

Financial support and sponsorship: Nil

Conflicts of interest: Nil

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