



A CLINICO-ETIOLOGICAL STUDY OF ERYTHRODERMA

KEYWORDS

Erythroderma, Etiology, Eczema, Psoriasis, Histopathology, Pre existing dermatoses

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ABSTRACT

BACKGROUND:- Erythroderma is an inflammatory skin condition with universal desquamation and generalized erythema involving more than 90% of body surface area. It represents an extreme state of skin disease involving the whole or most of the skin surface that may be the result of many different causes. Because most patients are elderly and skin involvement is wide spread, the disease implies important risk to life of patient. **AIMS & OBJECTIVES:-** The aim of our study was to assess the demographic profile, aetiology, clinical features and to correlate with histopathological findings. **METHODS:-** Twenty five cases of erythroderma involving more than 90% of body surface area were included in the study. A detailed history regarding onset, drug intake, preexisting dermatoses and evidence of systemic diseases were noted. Cases were subjected to skin biopsy, and specimens were sent to Department of Pathology, Government General Hospital, Kurnool and their histological features were studied and noted. **RESULTS:-** Erythema & scaling were present in all cases. Our series had a high percentage of erythroderma secondary to preexisting dermatoses followed by drug induced causes. Psoriatic erythroderma was observed in 56% of cases. Good clinicopathological correlation was observed in Psoriasis, Atopic eczema, Seborrhoeic dermatitis and NBCIE. Hypoalbuminaemia, pedal oedema were more common in psoriatic erythroderma due to profuse scaling. **CONCLUSION:-** This study outlines that underlying etiological factors of erythroderma may show geographic variation. Histopathology is valuable in detecting underlying cause of erythroderma.

INTRODUCTION:-

Erythroderma is an inflammatory skin condition with universal desquamation and generalized erythema involving more than 90% of body surface. The desquamation varies from fine scale to lamellar exfoliation. Exfoliation and erythema is universal hence it is synonymously called as exfoliative dermatitis.

Erythroderma is a rare skin disorder that may be the result of many different causes. It represents an extreme state of skin disease involving the whole or most of the skin surface. Because most patients are elderly and skin involvement is wide spread, the disease implies important risk to life of patient.

The causative factors can be grouped as previous preexisting dermatoses^{1,2} drug reactions, malignancies, systemic diseases, infectious and idiopathic disorders. The four more common causes of idiopathic protracted erythroderma are probably atopic dermatitis, drugs, pre-lymphomatous eruptions and occult malignancies^{3,4}.

TABLE 1- CAUSES OF EYTHRODERMA

DERMATOLOGICAL CAUSES	SYSTEMIC CAUSES	NEONATAL CAUSES
Psoriasis	Leukaemia	Toxic shock syndrome
Atopic dermatitis	Hodgkins	Congenital cutaneous candidial syndrome
Seborrhoeic dermatitis	lymphoma	Omenn's syndrome
Stasis dermatitis	Non hodgkins	Graft versus host reaction
Contact dermatitis	lymphoma	Netherton's syndrome
Pityriasis rubra pilaris	Mycosis fungoides	Conradi-Hunermann syndrome
Pemphigus foliaceus	Sezary syndrome	Non bullous ichthyosiform erythroderma
Norwegian scabies	Myeloma	Bullous ichthyosiform erythroderma
Dermatophytosis	Carcinoma of lung and colon	Holocarboxylase synthetase deficiency
Lichen planus	HIV infection	
Reiters syndrome	Graft versus host reaction	
Sarcoidosis		

	Infantile seborrhoeic dermatitis
	Atopic dermatitis
	Pityriasis rubra pilaris
	Diffuse cutaneous mastocytosis

TABLE 2-DRUGS CAUSING ERYTHRODERMA

Diltiazem	Carbamazapine
Sulfonamides	Penicillin
Allopurinol	Barbiturates
Hydantoins	Nitrofurantoin
Gold	Captopril
Sulfonyl ureas	Penicillamine
Paraaminosalicylicacid	Chloroquine
Isoniazid	Quinidine
Ampicillin	Cimetidine
Lithium	Streptomycin
	Cefoxitin

Symptomatology varies according to severity, acuteness and chronicity of disease. In primary or idiopathic type, generalized erythema first occurs followed by scaling. In acute cases scales are larger, where as in chronic cases they are small. Palms, soles may be involved but mucous membranes are generally spared. In secondary type, area showing typical features of original disease may be seen in early phase. But later there is persistent generalized erythema, varying amounts of exfoliation and constitutional symptoms.

The histopathology can help identify the cause of erythroderma in up to 50% of cases particularly by multiple skin biopsies. Many chronic dermatoses may be histologically indistinguishable in erythrodermic patients.

In patients, where erythroderma has been present for some weeks,

non scarring partial or complete alopecia, onychodystrophy, ectropion with consequent epiphora occur. There may be dermatopathic lymphadenopathy with moderately enlarged lymph nodes with rubbery consistency.

Hepatomegaly, splenomegaly found in 20-35% and upto 20% of cases respectively. The basal metabolic rate is raised to level of +50 to + 100. Persistent universal inflammation of the skin may have important consequences on thermoregulation, haemodynamics, intestinal absorption, protein, water and other metabolisms. Skin blood flow, blood volume and cardiac out put may all be increased and if persists, they may lead to failure of cardiovascular system.

The principal loss of profuse scaling of erythroderma is of protein (keratin) but some iron is also lost. Eventually hypoalbuminaemia may contribute to oedema. The barrier effect of skin in erythroderma is impaired, which manifest as increased transepidermal water loss and dehydration, and ultimately increased susceptibility to secondary infection

The course and prognosis depends largely on underlying process. The mortality is mainly due to cardiovascular complications or secondary infections. The treatment includes thorough search to determine aetiological factors and treatment of specific disease entities. The management is mainly symptomatic in the form of replenishing fluids and controlling secondary infections. Systemic steroids may be used in severe cases.

METHODS:-

The present study was conducted in patients who attended the O.P.D, Department of DVL, Government General Hospital, Kurnool. The study was conducted over a period of 12 months from September 2014 to September 2015.

Twenty five cases of erythroderma involving more than 90% of body surface area were included in the study. A detailed history regarding onset, drug intake, pre existing dermatoses and evidence of systemic diseases were noted .Complete general physical examination, systemic examination and thorough search for internal malignancy were noted in all cases. All the patients were admitted in ward.

Complete haemogram, serum proteins, total and differential counts, liver and renal function tests, routine and microscopic urine tests, chest X-ray, ultra sound abdomen, skin biopsies were done in all cases.

Cases were subjected to skin biopsy, and specimens were sent to Department of Pathology, Government General Hospital, Kurnool and their histological features were studied and noted. Biopsy was performed by taking adequate bit of skin including a part of subcutaneous tissue. The area selected was cleaned with spirit and infiltrated with 2% Xylocaine locally after a test dose. Punch biopsy was performed and immediately placed in labeled bottle containing 10% formalin and specimen sent to Department of Pathology for histopathological evaluation.



Figure 1-PSORIATIC ERYTHRODERMA-TRUNK



Figure 2-PSORIATIC ERYTHRODERMA-PALMS

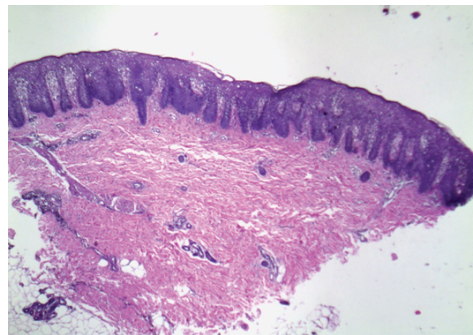
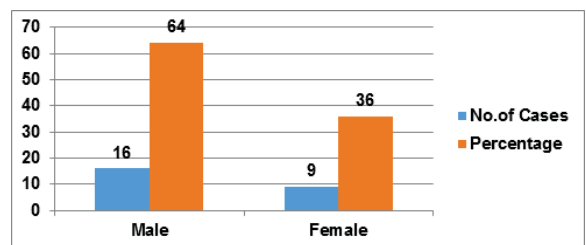


Figure 3-Histopathology of Psoriatic Erythroderma

OBSERVATION & RESULTS:-

Data collected from twenty five cases clinically diagnosed as erythroderma over a period of 12 months forms the basis of our study. A total of 25 cases were observed during the study, 16 patients were male and 9 patients were female and male-female ratio was 1.8:1. Majority patients were in age group of 60-69 yrs(24%). The age group affected ranged from 7 years to 70 years. The mean age at diagnosis was 43 years.

GRAPH 1 - GENDER DISTRIBUTION IN ERYTHRODERMA



In majority of cases 22(88%) – duration of disease is less than 3 months. In our study there was no case of erythroderma of more than one year duration. The most common causative factors were pre existing dermatoses (68%), followed by drug reactions(16%), idiopathic causes(12%), and hereditary cause(4%) . In our study, majority of cases were psoriaticerythroderma (14)which accounts for56% of total cases.

Table – 3: Etiological Factors of Erythroderma

S.no	Etiology	No. of cases	Percentage
1	Pre existing dermatoses	17	68
2	Hereditary cause	1	4
3	Idiopathic	3	12
4	Drug induced	4	16

Histopathological correlation was observed in 16 cases (64%).In drug induced and idiopathic cases the histopathological features were suggestive of chronic non specific dermatitis. Among 14 cases of psoriatic erythroderma 12 biopsies have shown features of psoriasis vulgaris like parakeratosis, absence of granular layer, supra papillary thinning and micro munro abscesses. Good clinico pathological correlation was observed in erythroderma caused by eczemas like atopic dermatitis, seborrheic dermatitis .

Scaling and redness was present in all cases (100%).The scales varied from powdery to large, thin silvery scales. Itching was observed in 92% of cases.

Exfoliation and erythema was observed in all cases. Nail changes like dystrophy, subungual hyperkeratosis were more often observed in psoriatic erythroderma patients. Alopecia and mucous membrane involvement were observed in some cases. Pedal oedema was observed in four cases. Regional lymphadenopathy was observed in six cases. In hereditary erythroderma no systemic involvement was

observed. In drug induced erythroderma lymphadenopathy was the only systemic manifestation. Pyrexia was noted in four cases. Pedal oedema was more common in Psoriatic erythroderma due to profound protein loss.

DISCUSSION:-

Erythroderma results from many causes. The approach to patients with erythroderma depends on their previous dermatologic history. The clinical features of erythroderma were identical, irrespective of etiology. In erythrodermic patients clinicopathological correlation is usually poor, because the specific cutaneous changes of dermatoses, of drug reactions are obscured by the non specific changes induced by the inflammatory process of erythroderma. This study was conducted primarily to determine the main etiological agents in erythroderma and the value of skin biopsy in the diagnosis in such patients.

In our study males outnumbered females the ratio being 1.8:1⁶ In our study majority of patients (24%) were in 60-69 years age group. Erythema, scaling were observed in all cases. Itching was present in 92% of cases. Nail changes were observed in 52% and genitalia affected in 40% of total cases. Erythema, scaling were observed in all cases. Itching was present in 92% of cases. Nail changes were observed in 52% and genitalia affected in 40% of total cases. No erythroderma caused by malignancy was observed in our study. In our study histopathological correlation was observed in 64% of cases.

CONCLUSION:-

Our series had a high percentage of erythroderma secondary to pre existing dermatoses⁷ followed by drug induced causes. Psoriatic erythroderma was observed in 56% of cases. Good clinicopathological correlation was observed in Psoriasis⁷. Atopic eczema, seborrhoeic dermatitis and NBCIE. Hypoalbuminaemia, pedal oedema were more common in psoriatic erythroderma due to profuse scaling. This study outlines that underlying etiological factors of erythroderma may show geographic variation. Reported death rates have varied from 4.6%^{8,9} to 64% , but with modern therapy the rate is probably lower¹⁰ Histopathology is valuable in detecting underlying cause of erythroderma.

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