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Erythroderma: A study of etiology, clinical features and histopathology

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Abstract :

Introduction : Erythroderma or exfoliative dermatitis(ED) is an uncommon skin disorder characterized by generalized reddening and scaling of over 90% of the skin. The resultant dysmetabolism is potentially life threatening.

Aims : The study was envisaged to assess their profile of aetiology, clinical features and to correlate with histopathological findings.

Materials and Methods : The study was carried out for a period of two years among the out patients of Dermatology and STD as well as referrals and from other wards at S.S. Institute of Medical Science & Research Centre, Davangere. Twenty cases of exfoliative dermatitis involving more than 90% of the body surface area were included in the study.

Results : Males were predominantly affected with a peak incidence between 41-50 years. Pruritus, shivering, erythema and scaling were the common clinical manifestations. Psoriasis and eczema were the most common aetiological factors and the histopathological findings were correlating with the same.

Conclusion : Erythroderma is an emergency and may lead to undesirable complications and consequences. Hence finding the etiology helps in proper management of the patients. This study intends to throw light upon the various common etiologies of erythroderma.

Key words : Erythroderma or Exfoliative Dermatitis[ED] , Aetiology , clinical features

Introduction : Exfoliative dermatitis, also known of erythroderma, first described by Herba in 1868[1] is a reaction pattern, characterized by generalized and confluent erythema with desquamation affecting more than 90% of body surface and is usually accompanied by other systemic manifestation[2,3] resulting in hemodynamic metabolic and biochemical derangements. The erythrodermic state is of great concern because it poses significant risk of morbidity and mortality, in addition to the risks inherent to the underlying disease and its therapy.

Erythroderma can be fatal, even when properly managed, primarily because of its metabolic burden and complications. Hence it is mandatory to establish its aetiopathology in order to facilitate precise management. This disorder may be the morphologic presentation of a variety of cutaneous and systemic diseases, and a thorough workup is essential. A detailed outline of the patient's history to elicit possible triggering events, including infections, drug ingestion, topical application of medications, sun/ultraviolet exposure and other factors, should be determined. Management of the skin disorder continues to be a challenge due to its multiple etiologies. The prognosis of erythroderma is determined by its underlying cause.[4] The aim of our study was to assess the demographic profile, aetiology, clinical feature and to correlate with histopathological findings.

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Materials and methods :

The study was carried out among the outpatients of Dermatology and STD department as well as referrals and from other wards at SSIMS&RC, Davangere for the period of two years.

Twenty fresh cases of exfoliative dermatitis involving more than 90% of the body surface area were included in the study. A detailed history regarding onset, drug intake, preexisting dermatoses and evidence of systemic diseases were noted. Complete general physical examination, systemic examination and a thorough search for any internal malignancy were made in all cases.

All relevant investigations including skin biopsy and patch testing were done in all the patients during quiescent phase using Indian Standard Series.

Results :

The age group affected ranged from the 20-70 years with a peak incidence between 41-50years (53%). Majority of the patients were Males (86%). The duration of the illness ranged from 16-30 days (53%). Scaling (100%), pruritus (85%) and erythema (90%) followed by nail changes (67%) and shivering (50%) were the commonest clinical manifestations. [Table-1] and [Table-2] .

Psoriasis[Fig:1] and eczema[Fig:2] were the common causes in 32% and 20% respectively followed by drug induced [Fig:3] mainly diclofenac, dapsone, ibuprofen, carbamazepine and contact dermatitis, pityriasis rubra pilaris[Fig:4], pemphigus foliaceous, congenital ichthyosiform erythroderma and idiopathic.[Table-3]. All the cases of erythroderma secondary to psoriasis, pityriasis rubra pilaris and contact dermatitis had significant past history of pre- existing skin disorder. Topical native medication was the most common precipitating factor in erythroderma secondary to psoriasis. The laboratory abnormalities notice were anemia (25% raised ESR 20%) and hypoproteinemia with altered A/G ratio(10%). Twenty percent of HPE reports were consistent with psoriasis, 15% with eczema; 5% with non-specific dermatitis.

Discussion :

In the present study of 20 cases of ED showed the maximum incidence of the disease was observed in the age group of 41-50 years. Similarly maximum incidence in the same age group is reported by Bharatiya P R et al (1995).[5] Males were affected more than females in this series of study constituting male (86%) and female (14%) , similarly Chaudhary A et al (1997) have also reported the preponderance of males over females.[6]

A major challenge lies in establishing the underlying cause of erythroderma. Most published series similar to the present study reveal that the majority of patients are diagnosed with psoriasis, spongiotic dermatitis or drug reactions.[7,8] A preexisting dermatosis is the single most common cause of adult erythroderma. A number of dermatoses can progress to erythroderma , but the most common include psoriasis and eczema. Rym et al reported 41 of 80 erythrodermic patients had psoriasis, a finding not inconsistent with Spanish, Middle Eastern, Indian studies.[9] Psoriatic erythroderma may occur in relation to withdrawal of systemic or topical glucocorticoids, use of systemic medications such as lithium and antimalarials, phototherapy burns , infection and systemic illness. The presence of lymphadenopathy and hepatosplenomegaly, particularly in association with liver dysfunction and fever,in few cases it suggested a drug hypersensitivity syndrome.[10]

Laboratory findings in the erythroderma patient are usually nonspecific.[11] but in the present study anemia 25% and raised ESR 20% and hypoproteinemia with altered A/G ratio (10%) was noticed. Biopsy specimen tend to have many non-specific features[11] but in the present series of the study 20% and 15% of HPE reports were consistent with psoriasis and eczema, 5% with non-specific dermatitis.

Conclusion:

In determining the aetiology of the present series of cases of exfoliative dermatitis, history and physical examination were great help. Erythrodrma course is greatly influenced by etiology. It could be a potentially life-threatening condition. However, diagnosing this condition remains a challenge due to poor specificity of clinical and histological signs. Careful monitoring of the patient and correction of the hematologic, biochemical and metabolic imbalance when required would improve the final outcome in the patients.

Table – 1 Clinical Features :

Signs and symptoms	Percentage(%)
scaling	100
erythema	90
Pruritus	85
Nail changes	67
shivering	50
lymphadenopathy	32
Fever	30
Pedal edema	24
Hepatosplenomegaly	5

Table – 2 Nail changes

Nail changes	Percentage(%)
Pitting	35
onycholysis	20
Beau's lines	18
Subungual keratosis	16
Ridges	12
Yellow discolorisation	10
Shiny nails	8

Table - 3 Aetiological Factors:

Conditions	Percentage(%)
Psoriasis	32
Eczema	20
Drugs	10
Pemphigus foliaceus	4
Hereditary disorders	2
Pityriasis rubra pilaris	6

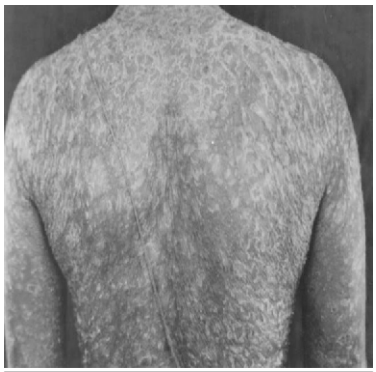

Fig 1 : Psoriasis

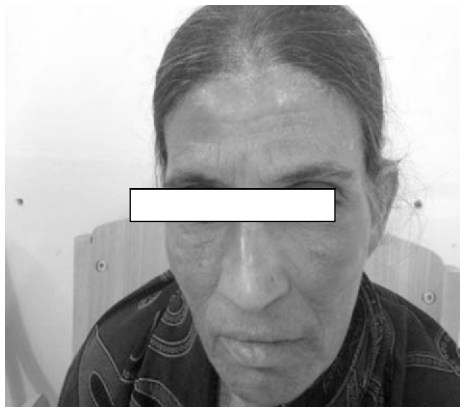

Fig 2 : Allergic contact

Fig 3: Drug induced

Fig 4 : Pityriasisi rubra pilaris

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