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Investigation of the Erythroderma's etiology and manifestations

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Abstract
Introduction: Skin scaling and widespread erythema is the hallmarks of erythroderma, a dermatological reaction that might have several underlying causes. Management will be guided by a better knowledge of the traits and causes of this illness. Investigating the origin and symptoms of erythroderma was the goal of this study.
Materials and Methods: Between February 2017 and January 2018, participants were inpatients and outpatients at the dermatological clinic and ward of the Department of Dermatology at Madha Medical College, Mangadu, Thandalam, Tamil Nadu. The analysis included all patients, regardless of age or gender, who visited the dermatology clinic within the designated time period and reported a new case of erythroderma.
Results: The study conducted by Pal and colleagues found lymphadenopathy in 55.50 percent of patients. With the exception of one case of Hodgkin's lymphoma, the only kind of lymphadenopathy observed in this group was dermatopathic lymphadenopathy. Forty percent of patients exhibited pitting pedal edoema. The frequency of pedal edoema can be anything from 14.6% to 78.67%. Erosion and congestion of the oral mucosa were observed in 9.23% of individuals.
Conclusion: Although erythroderma is painful, the research found that it did not constitute a life-threatening emergency. Finding and correcting the problem's origin is the most challenging part.

Keywords: Erythroderma, etiology, manifestations, dermatological

Introduction
Erythroderma is a dermatological reaction that can be caused by a wide range of factors and is characterized by widespread erythema and scaling of the skin throughout the affected area. In order to better manage this illness, it is necessary to have a better grasp of its characteristics and the factors that cause it [1, 2]. Erythroderma is a severe skin condition that is characterized by extensive redness and scaling over a significant area of the body. It often covers more than 90 percent of the surface of the skin [1-3].
In addition to presenting with a wide variety of clinical presentations, it might be the result of a number of different underlying causes. Erythroderma is a pattern of skin reactivity that can be caused by a wide variety of factors, including an underlying skin condition [2-4]. In some cases, even after doing a thorough clinical evaluation and investigation, it is not possible to identify the underlying causes. In 1868, Hebra was the first person to describe erythroderma. The occurrence of this syndrome for no obvious reason occurs very infrequently. There is a strong correlation between this illness and the use of drugs, as well as an underlying cutaneous or systemic disease [3-5].
There is a wide variety of cutaneous and extracutaneous symptoms that can be caused by erythroderma. Some of these symptoms include hemodynamic abnormalities, metabolic derangement, fever, tachycardia, hypoalbuminemia, and pedal edoema for example. When attempting to provide successful treatment for a patient, it is essential to address not only the symptoms that the patient is experiencing but also the underlying cause of their disease [4-6]. Despite the fact that it is relatively uncommon, the morbidity that is linked with it is significant. This is due to the fact that it is commonly a chronic condition that is characterized by symptoms that are incapacitating, such as intense itching and scaling [5-7]. The purpose of this study is to make a description of the characteristics of the disease in our population and to investigate the connected causes of the illness.

Materials and Methods

Participants were both inpatients and outpatients treated from February 2017 and January 2018 at the dermatological clinic and ward of the Department of Dermatology at Madha Medical College, Mangadu, Thandalam, Tamil Nadu. All patients, regardless of gender or age, who visited the dermatology clinic within the designated period and reported a new case of erythroderma were covered by the analysis.

Results

Over the course of the two-year study period, 100 patients received an erythroderma diagnosis. These are several distinct observations that were noted. The OPD department saw 5000 patients. Of these, 100 individuals had erythroderma diagnosed, and the incidence of erythroderma was determined.

Table 1: Incidence of erythroderma

Study period	Total patients	Cases of Erythroderma
	5000	100

Age Distribution

The age range of the patients was 50 days to 71 years, with a median age of 41.50. Most of the patients belonged to the 50–59 age group.

Table 2: Age wise distribution

Sr. No.	Patient's age	Number (n=100)
1.	0-9	20
2.	10-19	10
3.	20-29	8
4.	30-39	8
5.	40-49	10
6.	50-59	20
7.	60-69	20
8.	70-79	4

In total, there were one hundred patients, with 66 males and 34 females, making the ratio of males to females that was 2:1.

Table 3: Gender wise distribution

Gender	Cases (n=100)	%
Male	66	66.00
Female	34	34.00

Thirty percent of patients with erythroderma experienced a sudden onset, whereas eighty percent of those who were diagnosed with the condition experienced a gradual onset.

Table 4: Onset of the illness

Onset	No. of cases (n=100)	%
Sudden	80	80.00
Gradual	20	20.00

All of the patients had some degree of scaling, and erythema covered more than 90% of their bodies. Most patients stated that their main issue was itching.

Table 5: Frequency of presenting complaints

Symptoms	Cases
Itching	64
Scaling	10
Redness	06
Chills	5
Malaise	5
Fever	4
Oliguria	6
Total	100

Discussion

The degree of involvement and the shape of the skin were utilized to make the diagnosis of erythroderma. Our investigation revealed that 0.029 percent of skin-problem patients who came to our outpatient department annually had erythroderma. According to studies done in 1986 by Sehgal and Srivastava, erythroderma affected 0.035% of patients [7-9]. In the study, erythroderma was most common in patients between the ages of 50 and 59 and 60 and 69, then 40 and 49. This is in line with earlier studies that discovered that those between the ages of 50 and 59 had the highest incidence [10-12].

The average age of the participants was 40.25 years. Previous examinations have shown that the male to female ratio is higher. Our data indicates that the ratio of males to females is 2.1 to 1. According to our analysis, acute erythroderma happened in 27 cases. In particular, 17 people had drug-induced erythroderma, 5 had psoriasis, 2 had phytophotodermatitis, and 1 had foliaceous, seborrheic, or idiopathic pemphigus [12-14]. The course of the remaining 38 patients progressed more slowly and had a more nuanced beginning. Only 32% of the patients in the Pal S *et al*. study experienced an acute onset, compared to the majority of them. Regardless of the underlying reason, the clinical features of erythroderma were strikingly constant. When erythroderma reaches this stage of development, the cause cannot be identified [13-15].

Every patient had both erythema and scaling; the erythema usually showed up first, followed by the scaling four to five days later. In acute cases, the scales were huge; in chronic situations, they were little. The most prevalent symptoms, according to our research, were extensive scaling and redness (64.62 percent), followed by itching (64.62), malaise (61.54%), chills (46.79%), fever (26.79%), and oliguria (3.07%). None of the research subjects experienced symptoms of dermatogenic enteropathy. It also showed that

erythema and scaling could be as high as 100% worldwide. Signs of hyperthermia were seen in 27.69% of the patients. There was nobody who was hypothermic [15-17]. The study by Pal *et al*. found that about 40 percent of patients were hyperthermic and 5 percent were hypothermic. Additionally, lymphadenopathy affected about 32.30 percent of the patients. The axillary lymph nodes and the inguinal lymph nodes were the most often involved sites. Three patients had their lymph nodes biopsied; two of them had characteristics similar to dermatopathic lymphadenopathy, and one patient had symptoms similar to NHL [16-18].

In a study by Pal and colleagues, lymphadenopathy was found in 55.50 percent of patients; dermatopathic lymphadenopathy was the only type observed in this group, with the exception of one case of Hodgkin's lymphoma. Forty percent of patients had pedal edoema of the Pitting type. Pedal edoema is present in 14.6 percent to 78.67 percent of people. Oral mucosal erosions and congestion were observed in 9.23% of the patients. Mucosal involvement was present in between 1% and 36.6% of cases, according to research [17-19]. Hepatomegaly was present in two patients. The patient received a diagnosis of dapsone syndrome in one instance and NHL in another [18-20].

Out of 100 examples, only 31 satisfied the analysis's requirements. Two probable explanations for this phenomenon have been suggested: frequent nose scratches, which cause the removal of scales, or increased exposure to sunshine, which is thought to have antimitotic properties. Ten patients, or 7.76 percent, had the deck chair sign up. Pal S and colleagues reported that this symptom was present in 5.5% of patients. In our study, 24.07% of subjects had hair loss. In a different study, Sudho and colleagues discovered it in 24% of patients, whereas in a another study, Pal and colleagues discovered it in 30% of cases [19-21]. We observed a variation in the nails in 69.23% of the cases. Subungual hyperkeratosis was the second most common type of nail change, behind nail ridging. According to research by Sudho and colleagues, the most prevalent nail modifications were pitting and onycholysis, both of which were brought on by trauma. The results of the study indicate that although erythroderma is an unpleasant condition, there is no real risk to the patient's life. Finding the source and resolving the issue there is the most challenging task [22-24].

Conclusion

The most common symptoms were fever, chills, pedal edoema, palm and sole involvement, and malaise. The lymphadenopathy was 32.30%. Pallor was 26.15%, widespread hair loss was 23.07%, hyperthermia was 27.69%, and hepatosplenomegaly was 3.07%. Prior dermatosis was caused by psoriasis, which was then followed by ichthyosis, eczema, pemphigus foliaceous, Pityriasis rubra pilaris, and crusted scabies. The majority of patients experienced comparable symptoms. The histology of 43.49% of skin biopsies was positive.

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None

Conflict of interest

None

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