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Erythrodermic Psoriasis: A Case Report Highlighting Clinical Features and Management

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Abstract

Background: *Erythrodermic psoriasis (EP) is a rare and severe variant of psoriasis that presents as widespread erythema, scaling, and systemic complications, such as fever, dehydration, and electrolyte imbalances. It requires urgent medical attention due to the risk of life-threatening complications, including sepsis and multi-organ failure. The condition can arise de novo or as an exacerbation of pre-existing psoriasis, often triggered by medication withdrawal, infections, or systemic inflammation.* ***Case Presentation:*** *We report the case of a 31-year-old male who presented with generalized erythematous, scaly rashes affecting almost his entire body, accompanied by fever and signs of mild malnutrition. His history revealed multiple untreated episodes of similar symptoms over the past six years. Clinical examination confirmed severe erythrodermic psoriasis with acute-on-chronic plaque progression. Initial management with topical emollients failed to provide relief, necessitating a comprehensive treatment regimen consisting of cyclosporine, methotrexate, apremilast, and a macrolide antibiotic (roxithromycin). The patient showed significant improvement within six days, with reduced scaling, erythema, and no reported adverse effects.* ***Discussion:*** *Erythrodermic psoriasis poses a unique therapeutic challenge, as first-line treatments, such as topical corticosteroids and moisturizers often provide inadequate relief. Systemic therapies, including immunosuppressants (methotrexate, cyclosporine) and newer targeted treatments, like apremilast, play a crucial role in disease management. This case aligns with previous reports emphasizing the importance of early diagnosis, aggressive treatment, and a multidisciplinary approach to prevent life-threatening complications. Long-term disease control requires patient education, adherence to treatment, and lifestyle modifications to reduce the risk of recurrence.* ***Conclusion:*** *This case highlights the importance of early intervention, individualized treatment strategies, and continuous monitoring in managing erythrodermic psoriasis. While systemic therapies have shown effectiveness, there remains a need for further research into biologics and precision medicine to improve long-term outcomes. By integrating timely diagnosis, personalized treatment plans, and patient-centered care, clinicians can significantly enhance the quality of life for individuals affected by this debilitating condition.*

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INTRODUCTION

Psoriasis is a chronic, immune-mediated inflammatory skin disorder characterized by hyperproliferation of keratinocytes, inflammatory infiltration, and altered epidermal differentiation [1]. It affects approximately 3% of the global population, with plaque psoriasis being the most common variant, accounting for over 80% of cases [2].

Erythrodermic psoriasis (EP) is a rare and severe form of psoriasis, occurring in 1–2% of

affected individuals [3]. It is characterized by widespread erythema, edema, scaling, and systemic manifestations, such as fever, dehydration, and malnutrition [4]. Unlike localized psoriasis, EP can lead to life-threatening complications, including sepsis, electrolyte imbalances, hypothermia, and high-output cardiac failure due to extensive skin barrier disruption [5].

EP can arise de novo or evolve from existing psoriasis, often triggered by medication withdrawal (especially systemic corticosteroids), infections, stress, or irritants like overuse of topical steroids [6]. Certain medications, including lithium, antimalarials, beta-blockers, and nonsteroidal anti-inflammatory drugs (NSAIDs), have also been implicated in EP exacerbation [7]. Additionally, underlying systemic inflammation may contribute to metabolic disturbances, increasing the risk of cardiovascular disease and other comorbidities in affected patients [8].

Diagnosing EP requires a thorough patient history, clinical examination, and laboratory evaluation to assess systemic involvement. Elevated inflammatory markers, such as C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), and leukocytosis are common findings [9]. Histopathology can aid in distinguishing EP from other erythrodermic conditions, such as drug reactions, atopic dermatitis, or cutaneous T-cell lymphoma [10].

Management of EP is challenging and requires hospitalization in severe cases. Initial treatment focuses on supportive care, including fluid resuscitation, temperature regulation, and infection prevention. Systemic therapies, including methotrexate, cyclosporine, biologics (such as tumor necrosis factor inhibitors and interleukin inhibitors), and newer agents, like apremilast, are key components of long-term disease control [11].

This article presents a case of erythrodermic psoriasis, highlighting its clinical presentation, diagnosis, and treatment approach. The report underscores the importance of early intervention and multidisciplinary management to prevent complications and improve patient outcomes.

CASE STUDY

A 31-year-old male presented to the Dermatology Department with a 10–12 days history of multiple, itchy, reddish rashes covering his body. He reported intermittent similar episodes over the past 6–7 years, which had previously gone untreated. On admission, the patient exhibited fever (101.5°F) and mild malnutrition. A generalized erythematous rash with desquamation was observed, affecting all body areas except the face. No familial history of similar conditions or recent medication use was reported. The current episode initiated on his arms and subsequently spread to involve his entire body (Figure 1).

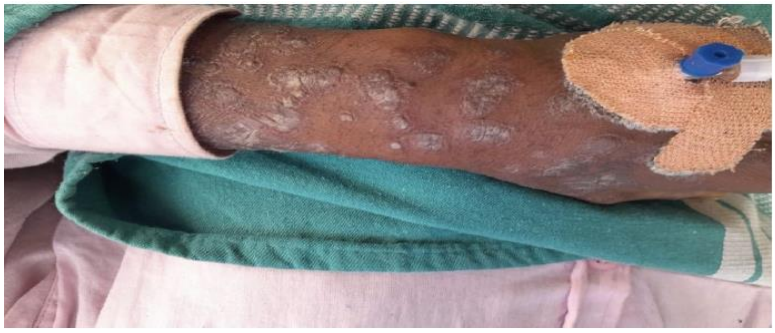

Figure 1. Before Treatment.

On admission, the patient's vital signs were stable, with a blood pressure of 130/80 mmHg, a pulse rate of 68 beats per minute, and a respiratory rate of 18 breaths per minute. Subsequent daily assessments revealed stable vital signs. The patient remained conscious and oriented throughout his hospital stay.

Respiratory and cardiovascular examinations were unremarkable. Cutaneous examination revealed multiple erythematous, scaly plaques of varying sizes, predominantly affecting the trunk, back, upper and lower limbs, and groin. Diffuse scaling was observed on the scalp, extending beyond the hairline. Positive results were obtained from the Koebner phenomenon (grattage test) and the Auspitz sign.

Initial laboratory investigations revealed a normal complete blood count (CBC) with an elevated platelet count of 484 × 10^3/μL (normal range: 150–450) and a neutrophil count of 78% (normal range: 40–75). A decreased packed cell volume of 38% (normal range: 40–54) was also noted. Other laboratory parameters were within normal limits.

Based on the clinical presentation and laboratory findings, a diagnosis of severe erythrodermic psoriasis with acute-on-chronic plaque progression was established.

Initially, the patient received topical treatments including liquid paraffin and framycetin cream, but the symptoms persisted. On the second day of hospitalization, a comprehensive treatment regimen was initiated, comprising cyclosporine therapy (100 mg twice daily), macrolide antibiotics (Roxithromycin 150 mg once daily), antimetabolites (Methotrexate 5 mg weekly), and an immunosuppressant (Apremilast 30 mg daily) (Figures 2 and 3).

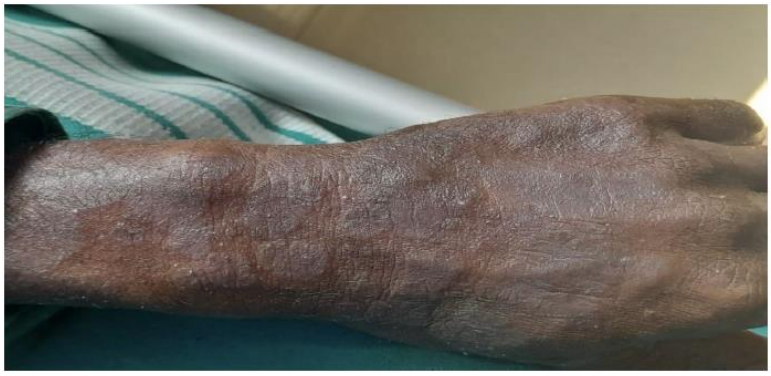

Figure 2. During Treatment.

By the sixth day of treatment, the patient exhibited significant improvement, with clearance of existing lesions, reduced scaling, and diminished erythema. No adverse events were reported throughout the treatment course.

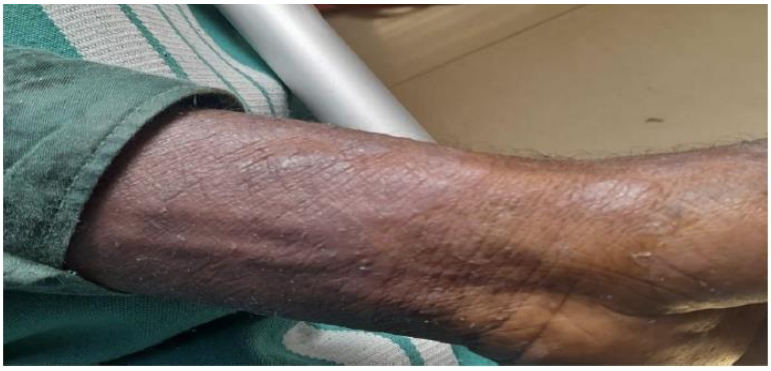

Figure 3. Its During treatment.

Regular follow-up appointments were scheduled to monitor the patient's progress and adjust the treatment plan as needed. The patient was advised to adhere strictly to the prescribed treatment regimen and lifestyle modifications to effectively manage the condition. With consistent adherence and ongoing management, the patient has experienced sustained improvement, characterized by

reduced scaling and erythema. No adverse events have been reported during the entire course of treatment.

DISCUSSION

Erythrodermic psoriasis (EP) is a severe and potentially life-threatening form of psoriasis that demands immediate medical attention. The presented case aligns with previously documented reports regarding the clinical manifestations and management of EP. This condition often results from the exacerbation of preexisting psoriasis, withdrawal of systemic corticosteroids, infections, or the use of certain medications, such as lithium, beta-blockers, and antimalarials [1].

A similar case study by Madhuri et al. described a 13-year-old male with generalized erythema and desquamation, which was effectively managed using systemic corticosteroids and methotrexate [12]. Another study by Garg et al. reported a 27-year-old male with extensive erythroderma, systemic symptoms, and nail dystrophy, emphasizing the importance of early intervention with immunosuppressants [13]. These cases highlight the necessity of individualized treatment approaches based on disease severity and patient response.

The management of EP remains a clinical challenge. First-line treatments typically include hospitalization, fluid resuscitation, systemic immunosuppressants (e.g., methotrexate, cyclosporine), and biologics in refractory cases [4]. In this case, the patient exhibited significant improvement following a treatment regimen comprising cyclosporine, macrolide antibiotics, methotrexate, and apremilast. Apremilast, a phosphodiesterase-4 inhibitor, has been increasingly recognized for its role in managing psoriasis and psoriatic arthritis [11]. The observed therapeutic response in this case underscores the potential efficacy of combination therapy in EP.

Long-term management strategies for EP involve continuous monitoring, patient education, and lifestyle modifications. Factors, such as stress reduction, adherence to therapy, and avoidance of triggering medications are crucial in preventing relapses. The integration of biologics, including tumor necrosis factor-alpha inhibitors and interleukin inhibitors, may offer new avenues for achieving sustained disease remission [10].

This case reinforces the need for a multidisciplinary approach in managing erythrodermic psoriasis, emphasizing early diagnosis, prompt intervention, and individualized treatment regimens to optimize patient outcomes.

CONCLUSIONS

Erythrodermic psoriasis is a challenging and often overwhelming condition, not just for patients but also for healthcare providers. Its aggressive nature and potential for serious complications mean that early recognition and swift intervention are crucial. This case highlights the importance of a personalized, multidisciplinary approach in managing EP, ensuring that treatment is not only effective but also safe and sustainable.

The patient's journey – from experiencing widespread skin inflammation and discomfort to significant improvement with the right combination of therapies – reinforces how thoughtful medication choices and close monitoring can make a real difference. The use of cyclosporine, methotrexate, macrolide antibiotics, and apremilast proved effective in this case, reflecting how modern treatments can help control even the most severe forms of psoriasis when used appropriately. However, long-term management goes beyond just medications – it requires patient education, adherence to treatment, lifestyle modifications, and ongoing support to prevent relapses.

Despite advancements in psoriasis treatment, erythrodermic psoriasis remains difficult to manage, and more research is needed to develop safer, more targeted therapies. Biologics, immunomodulators,

and precision medicine approaches hold promise for the future, offering hope for better disease control with fewer side effects.

Ultimately, this case underscores an important message: with early diagnosis, timely intervention, and individualized care, patients with even the most severe forms of psoriasis can achieve stability and an improved quality of life. Physicians, pharmacists, and dermatologists must work together to not only treat the condition but also to support patients holistically, helping them navigate their treatment journey with confidence and clarity.

Patient Consent for Publication

Obtained.

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Conflicts of Interest

There are no conflicts of interest.

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