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Reduction of 75% in the Psoriasis Area and Severity Index (PASI) for Moderate-to-Severe Psoriasis Vulgaris

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ABSTRACT

Introduction: Psoriasis vulgaris is a chronic inflammatory skin disorder characterized by the presence of scaly, red plaques. The severity of the condition is often evaluated using the Psoriasis Area and Severity Index (PASI), which quantifies the extent and severity of skin lesions. A treatment is considered successful when a PASI 75 is achieved, indicating a 75% reduction in the PASI score.

Case: A 26-year-old female presented with itchy and scaly red plaques covering nearly her entire body for the past month. Upon examination, her initial PASI score was 21.8. The patient was treated with a combination of systemic and topical therapies, resulting in a significant clinical improvement. Within two months, the patient achieved a PASI 75, demonstrating a 75% reduction in the PASI score.

Conclusion: This case underscores the importance of achieving PASI 75 as a critical treatment goal in both clinical practice and research. It highlights the potential of effective therapy in managing psoriasis vulgaris and serves as a guide for dermatologists in optimizing treatment strategies for psoriasis patient.

Keywords

Psoriasis vulgaris, Psoriasis area and severity index, Treatment strategies

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INTRODUCTION

Psoriasis is a chronic, immune-mediated skin disease characterised by systemic inflammation and keratinocyte hyperproliferation, leading to erythematous, scaly plaques. Psoriasis is related to genetic factors, autoimmune disorders, and environmental factors such as infections, stress, and trauma. Psoriasis can affect individuals of various ages, particularly those between 15–20 and 55–60 years old.[1-3]

Assessing treatment efficacy is crucial for dermatologists, and one of the most widely used measures is the Psoriasis Area and Severity Index (PASI). PASI 75 refers to a 75% reduction in the PASI score from the baseline, indicating significant clinical improvement. This has become a key benchmark for evaluating the effectiveness of systemic therapies, including biologics and small-molecule drugs. Achieving PASI 75 is often associated with substantial symptom relief and improved quality of life for patients.[3-5]

CASE REPORT

A 26-year-old female, came to the Dermatology and Venereology Department of Haji Adam Malik General Hospital in Medan, Indonesia, with the chief complaint of itchy and scaly red plaques almost all over her body for 1 month. Two years prior, the patient complained of red, itchy skin on both the left and right hands. One year ago, the red patches had become more widespread and were accompanied by skin thickening throughout the body. The patient consulted a dermatologist and was prescribed oral methylprednisolone;

however, the symptoms did not improve. One month ago, the red patches had become even thicker and itchy across the entire body.

Dermatological examination showed that the lesions were multiple erythematous plaques with thick rough squama on the face, trunk, back, as well as both arms and legs (Figure 1). The body surface area (BSA) of the patient was 45%, based on the surface area of the involved skin. Based on the intensity of the redness, thickness, and scaling of the lesions, the Psoriasis Area and Severity Index (PASI) score of this patient was 21,8, which can be classified as moderate-to-severe psoriasis.

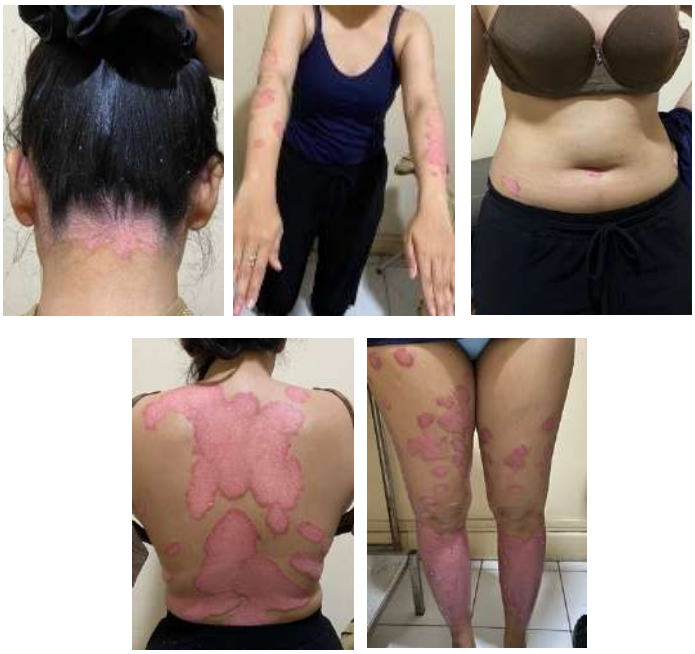

Figure 1. Multiple erythematous plaques with thick, rough squamae on the trunk, back, arms, and legs of the patient.

Laboratory results were that hemoglobin 10.4 g/dL, leukocytes 10.150/mm3, erythrocytes 4.56 million/mm3, platelets 301.000/mm3; urea, 13 mg/dL; and creatinine 0.55 mg/dL. Histopathological examination revealed a stratified squamous epithelial lining, with regular acanthosis, elongated rete ridges, and hyperkeratosis, while the structure and nuclear morphology remained within normal limits. Neutrophilic inflammatory cell infiltration is also observed in some areas of hyperkeratosis. Thinning of the suprapapillary plate was observed in the subcorneal layer. The stroma consisted of fibrous connective tissue with infiltration of lymphocytic inflammatory cells (Figure 2).

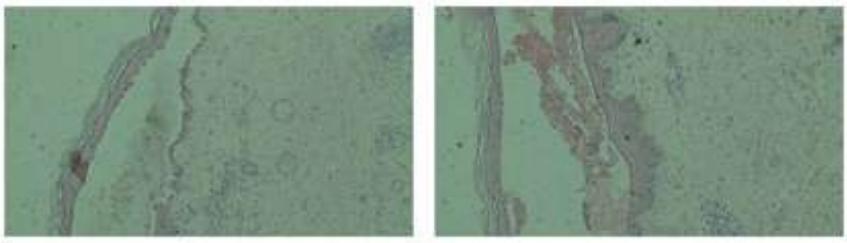

Figure 2. A stratified squamous epithelial lining was observed, showing regular acanthosis with elongated rete ridges and hyperkeratosis, whereas the structure and nuclear morphology remained within normal limits. Neutrophilic inflammatory cell infiltration in some areas of hyperkeratosis. In the subcorneal layer, thinning of the suprapapillary plate

The patient was diagnosed with Psoriasis vulgaris. The initial treatment of this patient was the combination of 2x2.5 mg/week of oral methotrexate, loratadine 1x10mg, emollient 2x a day, desoksimetasone cr + salicylic acid 5% 2x a day for one month. The patient returned after one month and showed improvement with symptoms, but red skin with itching and scales was still present across the body, and the PASI Score

reduce to 16,8. The patient was given the same therapy, and was advised to return for follow-up within one month. Follow-up of the lesions after 2 months showed erythematous plaques with thick rough squamae on the trunk, back, arms, and legs, which subsided, and the PASI Score reduce to 9,8 (Figure 3).

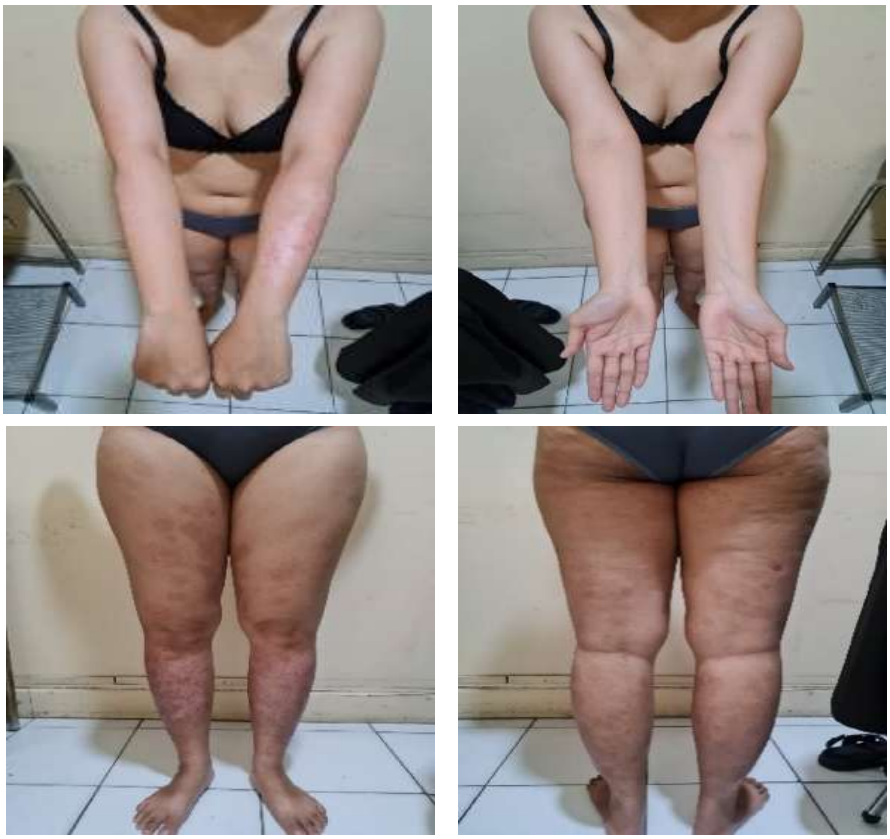

Figure 3. Follow-up of lesions after 2 months. There were improvements in the patient's condition, and erythematous plaques decreased.

DISCUSSION

Psoriasis vulgaris is an immune-mediated condition with genetic and environmental influences, where the activation of keratinocytes and immune cells leads to excessive keratinocyte proliferation. The predilection sites of psoriasis include extensor surfaces such as the elbows and knees, lumbosacral region, buttocks, and genital area. Psoriasis can occur at any age, with a bimodal age distribution, typically appearing between 18 and 39 years and between 50 and 69 years. Other studies have suggested peak onset ages of 16–22 years and 57–62 years. In addition to genetic factors, environmental triggers such as trauma, infections, stress, medications, and immune system dysfunction contribute to the autoimmune pathogenesis of psoriasis.[6-9]

Histopathological examination plays a crucial role in confirming the diagnosis and understanding of the underlying pathophysiology of the disease. The histopathological features of psoriasis include parakeratosis, often accompanied by hyperkeratosis, acanthosis, elongation of rete ridges, and lengthening of the dermal papillae, along with Munro microabscesses in the epidermis, surrounded by lymphocyte and monocyte infiltration.[2,10,11] The histopathological findings in this case are consistent with those in the literature, showing a stratified squamous epithelial lining with regular acanthosis, elongated rete ridges, hyperkeratosis, and normal nuclear structure and morphology.

Additional laboratory tests may reveal leukocytosis, anemia, increased erythrocyte sedimentation rate (ESR), and electrolyte imbalances.[3,12] In this case, a complete blood count and kidney function test were performed, revealing anaemia, while the kidney function remained within normal limits.

According to the literature, the Psoriasis Area and Severity Index (PASI) score is used to assess the severity of psoriatic lesions. Fredrickson and Pettersson first introduced the PASI scoring system, which is now widely used in clinical evaluation and treatment response assessment. The PASI score ranges from 0 to

72 and is categorized as mild (PASI <5), moderate (PASI 5–10), and severe (PASI >10).[13,14] The management of psoriasis vulgaris aims to control the disease and achieve remission rather than a cure. Treatment options are tailored based on body surface area (BSA) involvement. If the lesion coverage exceeds 30% of BSA, a combination of topical therapy, phototherapy, and systemic therapy is recommended.[15]

In this case, the patient was treated with methotrexate, loratadine, desoximetasone 0.25% cream + 3% salicylic acid, and a moisturiser. Methotrexate, an immunosuppressive drug, works by inhibiting dihydrofolate reductase. It is used for moderate to severe psoriasis and psoriatic arthritis owing to its cytostatic and anti-inflammatory properties, although its safety profile is limited. It is administered orally with dose titration of 5–7.5 mg or 15–20 mg per week. Side effects may include hepatotoxicity, nausea, vomiting, diarrhoea, and fatigue. Folic acid supplementation can help reduce methotrexate-related side effects.[2,16,17]

The patient was diagnosed with severe psoriasis vulgaris, based on a PASI score of 21.8. The patient's PASI score decreased, indicating a good therapeutic response. After two months, the PASI score was calculated to be 9.8, reflecting a reduction of more than 75%. Psoriasis treatment was considered successful when a PASI of 75 was achieved, indicating a 75% reduction in the PASI score. Conversely, it is considered unsuccessful if PASI 50 is not reached, indicating a reduction of less than 50% in the PASI score.[18,19]

Topical therapies include emollients (moisturisers), glucocorticoids, and vitamin D analogues as first-line treatment. Second-line options included tazarotene, salicylic acid, dithranol, and coal tar. Phototherapy, narrowband UVB (NB-UVB) and broadband UVB are first-line options, while psoralen plus UVA (PUVA), excimer laser therapy, and climatotherapy serve as second-line treatments.[17,20]

CONCLUSION

This case underscores the significance of PASI 75 as a critical treatment objective in both clinical research and routine practice, serving as a guide for dermatologists to optimise patient management.

DECLARATIONS

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CONSENT FOR PUBLICATION

The Authors agree to be published in Journal of Society Medicine.

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The authors declare that there are no conflicts of interest.

AUTHORS' CONTRIBUTIONS

All the authors contributed substantially to the work reported in this manuscript. All participants participated in drafting, revising, or critically reviewing the article. Furthermore, they approved the final version of the manuscript for publication, concurred with the journal for submission, and accepted responsibility for all aspects of this work.

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