Psoriasis: A Case Report

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Abstract

Background
Psoriasis is a chronic inflammatory skin disease with a strong genetic predisposition and autoimmune pathogenic traits. Psoriasis vulgaris is also called plaque-type psoriasis, and is the most prevalent type. Psoriasis vulgaris is chronic inflammatory disease and characterized by periods of attack and remission. The chronicity of psoriasis vulgaris can affect patient's quality of life.

Case presentation
A 33-year-old male came to Unggul Karsa Medika Hospital's outpatient department with itchy, scaly, red plaques all over his body except his palms, soles, and face. The patient went to the dermatologist because his symptoms were getting worse and worse. Dermatologic examination concludes the lesions as multiple, generalized, discrete, circumscriptive, elevated, dry, regular-discoid erythematous plaques with psoriasiform scales located at the patient's head, ears, nape, back, chest, belly, both arms and legs.

Conclusion
The diagnosis of psoriasis vulgaris was made based on history and clinical symptoms, supported by histopathological results. Treatment optimization and transitioning for moderate-to-severe plaque psoriasis include methotrexate or cyclosporine, along with topical therapy and supportive therapy.

Keywords: case report, children, gonadotropins, precocious puberty

Background
Psoriasis is a chronic inflammatory skin disease with a strong genetic predisposition and autoimmune pathogenic traits. Psoriasis is also defined as a complex, chronic, multifactorial, inflammatory disease that involves hyperproliferation of the keratinocytes in the epidermis, with an increase in the epidermal cell turnover rate. Psoriasis occurs worldwide, and its prevalence varies. In Indonesia, the prevalence and incidence of psoriasis are not well documented. In Indonesia, records have been made by ten major hospitals with prevalence rates in 1996, 1997 and 1998 respectively 0.62%; 0.59%; and 0.92%. Psoriasis can begin at any age, yet there is a bimodal peak between age 20-30 years and 50-60 years.

Environmental, genetic, and immunologic factors appear to play a role. Psoriasis is associated with smoking, alcohol, metabolic syndrome, lymphoma, depression, suicide, potentially harmful drug and light therapies, and possibly melanoma and nonmelanoma skin cancers. The dermatologic manifestations of psoriasis are varied. Psoriasis vulgaris, often called plaque-type psoriasis, is the most prevalent type of psoriasis. About 90% of psoriasis cases correspond to chronic plaque-type psoriasis. The clinical manifestations are sharply demarcated, erythematous, pruritic plaques covered in silvery scales. The plaques can coalesce and cover large areas of skin. The disease most commonly manifests on the skin of the elbows, knees, scalp, lumbo-sacral areas, intergluteal clefts, and glans penis.

This disease is not life threatening although it can affect or interfere with work, personal life, and quality of life of patients. All patients with psoriasis need lifelong follow-up because psoriasis marked by remissions and exacerbations and is sometimes refractory to treatment. To achieve complete remission and good quality of life, treatments may be tailored individually based on types and severity of psoriasis.

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If not treated properly, the disease can lead to complications and comorbidities. This case study is aimed to present our experience in treating the case of psoriasis vulgaris.

**Case presentation**

A 33-year-old male came to Unggul Karsa Medika Hospital’s outpatient department with chief complaints of itchy, scaly, red plaques all over his body except his palms, soles, and face. The patient went to the dermatologist because his symptoms were getting worse and worse.

The lesions first appeared in 2014. It first involved his scalp and looked just like dandruff. The patient firstly thought that the lesion appeared because of frequent bike helmet use. As time went by, new lesions appeared on both ears and perianal area. The patient thought that the lesions were influenced by his diet.

The patient then tried cupping therapy. However, new lesions appeared on his back on the spots where the cupping therapy took place. The patient then went to a dermatologist and were prescribed two types of topical medications. The lesions got better for a while, but it then reappeared when the patient ceased using the ointment. The patient forgot about the name of the topical medications given to him.

In 2020, new lesions appeared on both legs. The lesions’ size firstly only as big as a normal acne but they kept growing over time. In 2021, new lesions appeared again, this time on both elbows. It grew more rapid and he suspected it was due to emotional stress, because the patient was grieving about the death of his father.

Currently, the patient felt stressed out because the lesions did not disappear and they kept getting worse even after trying a lot of ointments which he bought online.

From dermatologic examination, we described the lesions as multiple, generalized, discrete, circumscribed, elevated, dry, regular-discoid erythematous plaques with psoriasiform scales located at the patient’s head, ears, nape, back, chest, belly, both arms and legs (figure 1). There were also nail lesions found in the patient (figure 2).

The patient was diagnosed with psoriasis vulgaris. The patient was prescribed with methotrexate 7.5mg once a week, loratadine 10mg, clobetasol 10mg. After taking the therapy, the lesions started to get better and better, thus the therapies continued.

**Discussion**

Psoriasis is a chronic, multisystem inflammatory disease with predominantly skin and joint involvement. As a disease of systemic inflammation, psoriasis is associated with multiple comorbidities, including cardiovascular disease and malignancy. Psoriasis is a chronic inflammatory skin disease with a strong genetic predisposition and autoimmune pathogenic traits. The worldwide prevalence is about 2%, but varies according to regions. It shows a lower prevalence in Asian and some African populations, and up to 11% in Caucasian and Scandinavian populations.

The risk factors for psoriasis can be divided into two groups, namely, extrinsic and intrinsic risk factors. Intrinsic factors such as obesity, diabetes mellitus, dyslipidemia, hypertension, mental stress are associated with inflammatory response. Mechanical stress, air pollutants, sun exposure, and infections are extrinsic factors that can trigger or exacerbate psoriasis.

Inflammation found in psoriasis is associated with varying types of cytokines, chemokines, and growth factors that causes dysregulation of keratinocytes, inflammatory cells, and blood vessels. T cell lymphocytes activation in lymph vessels occurs after macrophage presenting antigen to naive T cells and then they will proliferate to become
effector and memory cells. After that, they will migrate to skin. Cytokines that are associated with psoriasis pathogenesis including IL-17, IL-23, IL-21, and TNF-α cause keratinocytes to proliferate more rapidly compared to normal skin condition. Vascular endothelial growth factor (VEGF) and vascular permeability factor (VPF) that are produced by keratinocytes affect blood vessels and cause dilatation, angiogenesis, and hyperpermeability.5

The pathogenesis of psoriasis is sustained inflammation that leads to uncontrolled keratinocyte proliferation and dysfunctional differentiation, manifesting in several ways: plaque, flexural, guttate, pustular or erythrodermic psoriasis. The commonest form is plaque psoriasis, presenting as well-demarcated salmon-pink plaques with silvery-white scale, typically in a symmetrical distribution and predilecting the extensor surfaces (especially elbows and knees), trunk and scalp. Bleeding points may be noted where scales have been removed (Auspitz’s sign). Flexural psoriasis presents without much scaling and affects the axillae, sub-mammary and genital areas. Guttate psoriasis causes an acute symmetrical eruption of drop-like papules/plaques mainly involving the trunk and limbs, that is usually, but not always, preceded by streptococcal infection. Patients with guttate psoriasis can develop plaque psoriasis in latter stages. In rare cases of severe, uncontrolled disease, psoriasis may cause a widespread erythematous rash (erythroderma) which is a life-threatening condition due to potential complications including hypothermia, risk of infections, acute kidney injury and high-output cardiac failure. Koebner phenomenon, which is found often in Psoriasis patients, describes the appearance of psoriasis at skin areas affected by trauma. Nails may be affected in up to 50% of patients and may manifest as nail pitting (indentation in the nails), onycholysis (separation of nail plate from nail bed), oil spots (discoloration of the nail bed), dystrophy and subungual hyperkeratosis.10 In this case, patients’ nails were also affected by psoriasis.

There’s no cure for psoriasis until now, but a range of treatments can improve symptoms and the appearance of skin patches.11 In most cases, the first treatment used will be topical treatment (creams and ointments), such as vitamin D analogues or topical corticosteroids. Considered the cornerstone of topical treatment, corticosteroids are often well-tolerated and effective for patients with mild psoriasis.12

Overall, topical steroids in various formulations, strengths, and combinations have good efficacy for rapid control of symptoms. For instance, salicylic acid, a keratolytic agent, can be combined with steroid therapy to help treat plaques with thicker scales in order to have better penetration of medication. Although uncommon, long-term use of topical corticosteroids can be complicated by possible side effects of local skin changes, tachyphylaxis, and hypothalamic-pituitary-adrenal axis suppression.13

Vitamin D3 analogues like Calcipotriol, is a first-line topical agent for treatment of plaque psoriasis and moderately severe scalp psoriasis.13 Vitamin D3 analogues are commonly used as monotherapy or, more often, as combination therapy. Side effects include mild irritant dermatitis and hypercalcemia with excessive use, though the latter was rare to be happened. These agents could not be used in combination with salicylic acid or before phototherapy. Combination of calcipotriol and betamethasone dipropionate was shown to be more effective for psoriasis than monotherapy of either.14

If these therapies are not effective, or the patients’ conditions are considered more severe, phototherapy may be used. Phototherapy involves exposing your skin to certain types of ultraviolet light. Phototherapy is the primary treatment of moderate to severe psoriasis, especially in those who unresponsive to topical agents. It is available as psoralen plus UVA, broadband UVB, and narrowband UVB (NB-UVB).12 NB-UVB therapy is often used as first-line treatment. In fact, NB-UVB therapy can be used in almost every patient, including children and pregnant women.

Other therapies also can be used to treat moderate to severe psoriasis. Acitretin is a synthetic retinoid which is indicated for treatment of moderate to severe psoriasis. Its role as an adjunctive therapy to other systemic agents has been well documented to enhance efficacy, lower doses, and reduce occurrence of side effects.15 Acitretin is a potent teratogen, thus it usage is best to be avoided in women of childbearing age. It is recommended that women not to get pregnant for 3 years after discontinuing the medication.12 Methotrexate is an inhibitor of folate biosynthesis, used for its cytostatic and anti-inflammatory properties in the treatment of moderately severe to severe psoriasis, as well as psoriatic arthritis.13 In our case, we used methotrexate due to the patients’ psoriasis condition which is quite severe. Cyclosporine is a calcineurin inhibitor indicated for treatment of moderate to severe psoriasis.13 There is also some evidence for its efficacy in psoriatic arthritis. It has been shown to cause significant improvement or complete remission in 80% to 90% of patients within 12 to 16 weeks in a 1-year open.16
Biologic therapies have emerged as highly potent treatment options in patients for whom traditional systemic therapies have failed to achieve an adequate response, are not tolerated to other treatments due to their adverse effects, or are unsuitable due to comorbidities. Choice of therapy depends on clinical needs, benefits and risks, patient preferences, and cost effectiveness. Previous randomized trials and retrospective studies have shown that biologic therapy was not associated with increased risk of malignancy or serious infection.

Individual and environmental factors influence the disease progression and recurrence of psoriasis. For example, respiratory tract infections, excessive mental stress/depression, unhealthy living habits (e.g., smoking and drinking), and obesity induce or aggravate this disease. Patients should continuously summarize and explore their patterns of disease onset, develop healthy living habits, and cooperate with active and effective treatments to prevent the development and recurrence of psoriasis.

Psoriasis can have a significant impact on quality of life for those more severely affected. Some people with psoriasis could have low self-esteem because of their dermatological appearance. In our patient, it seems that mental stressor is the dominant factor of his psoriasis condition. Thus, more holistic therapy such as collaborating with psychiatrist could help the patient.

**Conclusion**
The diagnosis of psoriasis vulgaris of our patient was made based on history and clinical symptoms. Psoriasis remains a treatable disease, but so far a definitive cure is yet to be found. Psoriasis is a chronic condition that can have a negative impact on the patients’ quality of life as well as their family members. The use of highly effective topical corticosteroids is common while the amount, frequency, and duration of the application, the method of application should be things to be concerned. Treatments for moderate-to-severe plaque psoriasis, especially for our patient, can include methotrexate or cyclosporine, along with topical therapy and supportive therapy. The patient should be told to eat healthily, exercise regularly, maintain a healthy life including good mental health as we try to treat psoriasis holistically.

**List of abbreviations**

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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>IL</td>
<td>Interleukin</td>
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<tr>
<td>TNF-α</td>
<td>Tumor Necrosis Factor Alpha</td>
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<td>VEGF</td>
<td>Vascular endothelial growth factor</td>
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<td>VPF</td>
<td>Vascular permeability factor</td>
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<td>UVA</td>
<td>Ultra violet A</td>
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<td>UVB</td>
<td>Ultra violet B</td>
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<td>NB-UVB</td>
<td>Narrowband UVB</td>
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**Declarations**

**Ethics approval and consent to participate**
Informed consent from the patient has been obtained before the study.

**Consent for publication**
Consent for publication regarding patient data has been obtained before the study. All the patient identity has been kept secret.

**Availability of data and materials**
Not Applicable

**Competing interests**
The authors declare that they have no competing interests.

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