

Chapter 27

Psoriasis Vulgaris in Children with Obesity



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An 11-years-old girl was brought to the Dermatology Emergency Room of Dr. Soetomo General Hospital Surabaya because of red patches with thick scales almost all over her body. The red patches first appeared on her scalp with dandruff 3 months ago. Gradually the red patches spread to all her body with an itchy and burning sensation. She already got treatment loratadine, dexamethasone tablets, and ointment from the general practitioner but there was no improvement. She had never complained like this before and there is no family with the same complaint. The physical examination of general status showed her body weight was 55 kg, based on BMI weight-for-age chart from CDC she was obesity (>95 percentile). We consulted the patient at the ENT and odontology department where there were no focal infections (Fig. 27.1).

Based on the case description and the photographs, what is your diagnosis?

1. Psoriasis vulgaris
2. Seborrheic dermatitis
3. Tinea corporis
4. Nummular dermatitis

On examination we observed multiple erythematous et hypopigmentation macules unsharply margined with scales on the scalp, facialis, extremitas superior et inferior region, no geographic tongue. Multiple erythematous plaque with clear border, covered by scales on the trunk region. There were no subungual hyperkeratosis

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Fig. 27.1 Multiple erythematous macules with white thick scale almost all over her body

and no pitting nails. There were Auspitz signs and Karsvlek phenomena. The PASI (Psoriasis Area and Severity Index) score was 23.2.

Laboratory examination: Hemoglobin 12.7 g/dL (normal range: 13.3–16.6), leucocyte 9800/ μ L (3370–10,000), thrombocyte 340,000/ μ L (150,000–450,000), SGOT 20 U/L (0–50), SGPT 27 U/L (0–50), BUN 11 mg/dL (7–18), creatinine serum 0.63 mg/dL (0.6–1.3). Urine examination was normal. Potassium hydroxide examination there was no hyphae and no pseudohyphae. Histopathology examination was concordance with psoriasis vulgaris.

Diagnosis: Psoriasis vulgaris with obesity

Treatment: The patient was given topical desoximetasone 0.25% cream on the thick scale, mometasone furoate cream on the face, methotrexate 15 mg/week, folic acid 1mg/daily the day after methotrexate consumption, and emollient (vaseline album). After 1 week of methotrexate treatment, the lesion had significant improvement with the PASI score of 7.3 and no side effects (Fig. 27.2). We followed up the patient's condition after methotrexate treatment 1 year later, she was in good condition and never relapsed using only topical treatment.



Fig. 27.2 Patient's progression after 1 week of methotrexate therapy

Discussion

The description of psoriasis in children is a well-demarcated erythematous plaque with silvery-white scale. Pruritus is a frequent symptom in children [1]. Childhood psoriasis is linked to several comorbidities with adult equivalence, one of the comorbidity is obesity [2]. Obesity is also related to greater disease activity and severity. In recent days, the correlation between psoriasis and obesity has become visible. Some studies hence showed the association between psoriasis and increased BMI. Obesity may be a trigger for psoriasis because it is associated with a low-grade systemic inflammatory state, owing to adipokines released by the interaction between adipocytes and macrophages [3, 4]. It is shown that intra-abdominal fat is actively secreting adipocytokines, promoting inflammation. The childhood-onset psoriasis is associated with HLA-Cw6. This specific gene is also associated with obesity. An individual with normal weight without HLA-Cw6 was 35 times less likely to occur psoriasis than obese individuals with the HLA-Cw6 gene. At this point, it can be said that there is an interplay between psoriasis and obesity, and hence adipokines may play an important role [3]. The standardized guidelines on the management and treatment of the psoriasis in children are lacking [2]. Systemic therapies should only be used in pediatric patients with moderate to severe psoriasis and methotrexate is one of the conventional therapy. To date, evidence on efficacy and safety of systemic treatments in pediatric psoriasis is limited and evidence-based guidelines are scarce. The 'rule of tens', used in adults to indicate moderate to severe psoriasis, can also be applied in pediatric psoriasis as an indication for the use of systemic therapy. This modified 'pediatric rule of tens' would be PASI ≥ 10 and/or body surface area (BSA) ≥ 10 and/or the children's dermatology life quality index (CDLQI) ≥ 10 [5, 6]. Methotrexate is recommended as one of the first-line treatments and it has a degree B/C of recommendation approval by the European

Medicines Agency (EMA) [7]. The recommendations for methotrexate dosage is once weekly 0.2–0.4 mg/kg/week [5]. In this case, we gave the methotrexate 15 mg/week with a good result and no side effects.

The guidelines for the treatment of moderate to severe psoriasis vulgaris in Indonesia still use methotrexate as the first-line treatment, although it is not declared as a treatment for adults or children. Biologic agent therapy is available in Indonesia at very high price, but is not commonly used because it is not covered by government insurance. Methotrexate is available at low price, easy to obtain, and provides good therapeutic results with no severe side effects in Indonesia.

Key Points

Psoriasis vulgaris in children has a strong association with obesity as comorbidity. Methotrexate is one of the systemic treatment for moderate to severe psoriasis vulgaris in children.

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