Secukinumab for Psoriasis Treatment: A Case Series

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Abstract: Psoriasis is a chronic inflammatory disease of the skin and nails, is characterized by erythematous plaques with silvery scale or pustules lesion for psoriasis pustular. Patients can suffer for psoriasis arthritis after the moderate to severe psoriasis occurred. Methotrexate remains a first line treatment for severe to moderate psoriasis, but due to the limitation of this medication, we decided to use secukinumab. We reported 2 patients. First case is a patient of psoriasis vulgaris with BSA of 20% and PASI 14.1 and history of cyclosporine A treatment for 3 months, the second case is a patient of psoriasis pustular with BSA of 22% and PASI 6 and history of methylprednisolone treatment for 6 months. First patient treated with 150 mg of secukinumab and the second patient treated with 300 mg of secukinumab. The result after 16 weeks treatment was satisfied which BSA and PASI was decreased. The efficacy of secukinumab should be considered for the treatment of moderate psoriasis.

1 INTRODUCTION

Psoriasis is a chronic immune mediated disease that affects 2-3% of the world population and is characterized by erythematous plaques with silvery scale (Gudjonsson & Elder, 2012). Various forms such chronic plaques, is most common in 90% patients, other variant is pustular (Gudjonsson & Elder, 2012; Yeung & Valbuena, 2016). Psoriasis arthritis (PsA) occur in around 20% to 30% of patients suffering from moderate to severe psoriasis (Gudjonsson & Elder, 2012; Yeung & Valbuena, 2016). Pathogenesis of psoriasis related to T helper (Th)-17 and Interleukin (IL)-17, so that the treatment of psoriasis often requires systemic therapy, including biologic agent (Langley et al., 2014; Becker & Jooo, 2018). Methotrexate (MTX) is a first line choice for moderate to severe psoriasis (Gudjonsson & Elder, 2012). Mechanism of action MTX is blocking dihydrofolate reductase, leading to inhibiton of purine and pyrimidine synthesis (Gudjonsson & Elder, 2012). Due to the limitation of MTX we chose cyclosporine A as a second line treatment for psoriasis. Mechanism of action cyclosporine A is binding cyclophilin and the resulting complex blocks calcineurin, reducing the effect of the T cells, resulting in inhibiton of IL-2 and other cytokines (Gudjonsson & Elder, 2012). Some patients who treated by cyclosporine A experienced high blood pressure, then we tried another treatment.

Secukinumab is a newly approved IL-17A monoclonal antibody. Mechanism of action is selectively binds to the IL-17A cytokine and inhibits its interaction with the IL-17 receptor, and also reduce the epidermal neutrophils levels (Fala & Writer, 2016). The administration therapy by injection weekly at weeks 0,1,2,3 followed by monthly maintenance dose starting at week 4 (Beecker & Joo, 2018). The recommended dose is 300 mg but for some patients, a dose of 150 mg may be acceptable (Fala & Writer, 2016). Common adverse effects of secukinumab are upper respiratory tract infections, headache, diarrhea, nausea, and neutropenia (Roman et al., 2015).

Follow up of patients in this study based on evaluation of psoriasis area and severity index (PASI) (Langley et al., 2014). Here we report a cases of psoriasis vulgaris and psoriasis pustular treated by secukinumab.

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2 CASE

2.1 Case 1

A 55-years old male with erythematous plaques and silvery scale on the scalp, face, neck, trunk and both upper and lower extremities a year ago. Approximately 20% of his BSA was involved, and PASI 14.1. Laboratory examination showed elevated of serum CRP. The patient was diagnosed with psoriasis arthritis, he was treated with 3 months cyclosporine but ineffective and suffered for hypertension, then we decided to prescribed of 3 weeks 150 mg of secukinumab followed by 150 mg every 4 weeks due to the patients's financial. We also prescribed omeprazole 20 mg/day and topical treatment of cream urea 10% applied twice a day and desoximethasone 0.25% cream twice daily. At 16 weeks, he almost reached PASI 75 (BSA of 9%, PASI 5.9). He had not symptoms of adverse effects (**Figure 1**)

2.2 Case 2

A 41-years old female with multiple 2 mm-3 mm pustules on a diffused-erythematous and oedematous base, some pustules developed "pus lakes" and the rupture of pustules leave an erosions and crusts on the trunk and both of upper and lower extremities, since 3 years ago. Laboratory examination is normal.

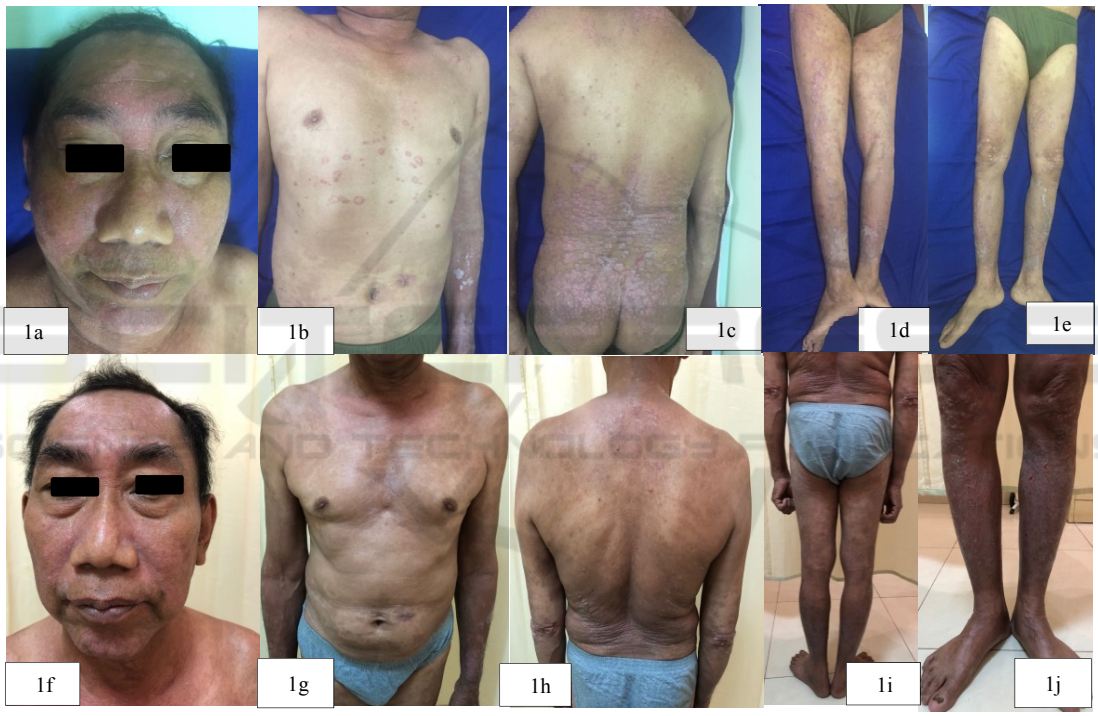

Figure 1. (1a-1e) clinical features at baseline (1f-1j) clinical features at weeks 16.

Approximately 22% of her BSA was involved and PASI 6. She was treated by unknown dose of methylprednisolone injection followed by methylprednisolone oral (unknown dose) for 6 months. She experienced moon face,gastritis and striae on the abdominal due to side effects of methylprednisolon. The patient was diagnosed with psoriasis pustular and we decided to prescribed 3 weeks of 300 mg secukinumab followed by 300 mg every 4 weeks. We also prescribed topical treatment such as vaseline album twice a day followed by vitamin C serum for hyperpigmentation lesion twice a day. At 16 weeks, she achieved PASI 100 (both of BSA and PASI are 0). She had not symptoms of adverse effects (Figure 2)

3 DISCUSSION

Secukinumab is a human monoclonal immunoglobulin (Ig) G antibody targeting IL-17A, and has indication for both psoriasis and psoriatic arthritis (Beecker & Joo, 2018). The recommended dose for adult with moderate psoriasis is 300 mg subcutaneously at weeks 0,1,2,3 followed by 300 mg

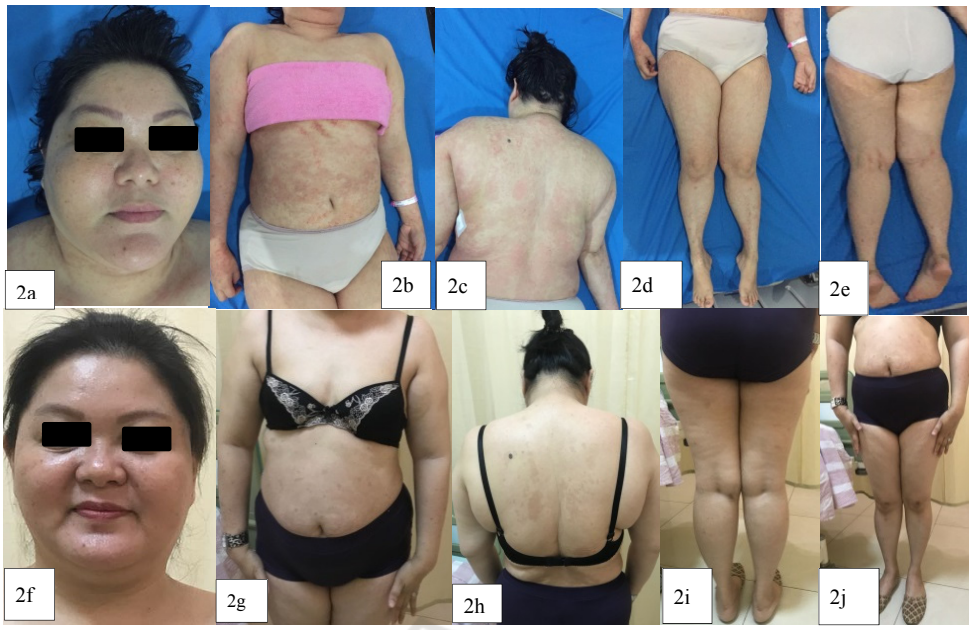

Figure 2. (2a-2e) clinical features at baseline (2f-2j) clinical features at weeks 16.

every 4 weeks starting from weeks 4 (Beecker & Joo, 2018).

In the case 1, the patient was treated by secukinumab after ineffective-3 months-treatment with cyclosporine, after 16 weeks of treatment with secukinumab, he almost reached PASI 75.This result almost similar to Ohtsuki *et al.*(2017) which reported 82.4% patients showed improvement of PASI 75 at weeks 16 with 300 mg of secukinumab after ineffective treatment of 12 weeks of cyclosporine. In this case, PASI 75 achieved at weeks 16 may be related to dose of secukinumab.

In the case 2, the patient diagnosed with psoriasis pustular, had a history of methylprednisolone treatment for 6 months (unknown dose) and suffered for a moon face and gastritis. She treated by 300 mg of secukinumab showed an improvement of PASI 100 in weeks 16. Our result is similar with CLEAR study that reported PASI 100 achieved at weeks 16 with secukinumab 300 mg (Thaci et al., 2015).

The patients had not reported any side effect of secukinumab such as respiratory tract infection, headache, nausea or neutropenia. Some study reported the common adverse effects of secukinmab such as nasopharyngitis, headache and nausea during the 12 weeks induction and the entire treatment (Roman et al., 2015). We prescribed the patients with omeprazole to reduce the adverse effect.

Both of patients have an improvement in PASI at weeks 16, but 300 mg of secukinumab seems more superior to reduce PASI. Some study reported efficacy of secukinumab 300 mg and 150 mg compare to placebo showed a greater benefit with achieving PASI 75 at weeks 12 than placebo (Xiong et al., 2015). Ohtsuki *et al.* (2014) reported PASI 90 achieved in 86.2% patients treated by secukinumab 150 mg compare to secukinumab 300 mg at weeks 12 but the meta analysis of four references study reported the secukinumab 300 mg had more benefit than the secukinumab 150 mg to achieve PASI 75 (Xiong et al., 2015).

4 CONCLUSION

The efficacy of secukinumab for treating psoriasis vulgaris and psoriasis pustular should be considered. There is no report about adverse effect in this study. Clinical improvement of PASI 75 and PASI 100 can be achieved within 12-16 weeks of treatment.

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