

Case Report

Successful Treatment of Generalized Pustular Psoriasis Triggered during Pregnancy with Secukinumab: A Case Report

Pattaraporn Koompawichit¹, Salin Kiratikanon¹, Napatra Tovanabutra¹, Siri Chiewchanvit¹ and Mati Chuamanochan¹

Division of Dermatology, Department of Internal Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

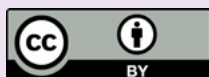
Correspondence: Mati Chuamanochan, MD, Division of Dermatology, Department of Internal Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai 50200, Thailand.
E-mail: mati.c@cmu.ac.th

Received: July 30, 2021;

Revised: September 8, 2021;

Accepted: September 20, 2021

© The Author(s) 2022. Open Access



This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made.

ABSTRACT

Secukinumab is one of the biologic drugs targeting interleukin-17 (IL-17) which is highly effective in the treatment of generalized pustular psoriasis (GPP). However, there is only limited data regarding treatment with GPP during pregnancy because of the rarity of the disease as well as ethical issues. This study describes the successful treatment with secukinumab of a 10 weeks pregnant women with recurrent GPP.

KEYWORDS generalized pustular psoriasis, pregnancy, interleukin-17, secukinumab

INTRODUCTION

Generalized pustular psoriasis (GPP) is characterized by an abrupt onset of widespread sterile pustules with systemic symptoms, especially fever (1). Pregnancy is one of the important triggering factors (2) making management decisions both problematic and challenging. Owing to the rarity of the disease as well as to ethical issues, there is a lack of data from large, controlled studies in humans regarding the efficacy and safety of GPP treatment during pregnancy. We herein report the successful treatment of GPP flare during pregnancy with secukinumab, a biologic drug targeting interleukin-17 (IL-17).

CASE REPORT

A 27-year-old Thai woman had been diagnosed with GPP since she was 18 years old. Her

symptoms were well controlled with methotrexate treatment until a flare of the disease was precipitated by an unplanned pregnancy at the age of 25. At that time, her gestational age (GA) was 10 weeks. Dermatologic examination revealed multiple tiny non-follicular pustules on an erythematous base coalesced into lakes of pus, predominately on the trunk (Fig. 1a), groin and both upper extremities (Fig. 1b). Other physical findings and basic laboratory investigations, including a complete electrolyte panel, were unremarkable. After a rigorous discussion regarding the risks and benefits of the treatment options, methotrexate was then withheld and a combination of secukinumab with a topical steroid was administered and bed rest was advised. The pustular eruptions were notably improved by the first week after a 300 mg secukinumab subcutaneous injection



Figure 1. Clinical course and treatment response. Generalized pustular psoriasis eruption on the trunk (a) and left arm (b) before secukinumab injection (c), (d) Initial response 1 week after 300 mg dose of secukinumab. The pustular lesions were almost cleared, remaining as flat erythematous plaques (e), (f) Clinical resolution after 2 weeks of secukinumab treatment. Only residual erythematous patches were noted

(Fig. 1c-d). For financial reasons, two additional weekly doses of 150 mg secukinumab were administered instead of the standard dose of 300 mg weekly. By the end of the second week, the rash was almost completely cleared (Fig. 1e-f); therefore, the treatment was then discontinued. Unfortunately, the disease recurred at a GA of 35 weeks. Weekly doses of 150 mg secukinumab were then administered for three weeks, followed by oral ciclosporin (3 mg/kg/day), with a satisfactory response. The patient eventually delivered a full-term healthy boy with a body weight of 2,720 gm. Breastfeeding was not allowed during the postpartum period due to the ciclosporin treatment.

DISCUSSION

In the past, systemic corticosteroids and ciclosporin were the optimal treatments of GPP during pregnancy; however, regarding potential long-term adverse effects in severe and refractory cases limited their use (3,4). Recently, there has been growing evidence of the efficacy of targeted therapies for GPP, including IL-17 inhibitors (5). These novel biologics, known as pregnancy category B drugs, are considered safe for use during pregnancy (6). In light of these efficacy and safety profiles, we considered using secukinumab in the present case. To date, there have been only a few reports of secukinumab therapy for GPP during pregnancy (7,8),

but, impressively, all of them have reported a dramatic and prompt positive response, with the pustular eruptions almost completely cleared within two weeks after the first injection, a result which is concordant with that of our case, even with a lower-dose prescription. Regarding the safety profile in terms of fetal health, one case reported a successful delivery of healthy baby (4), whereas another stated that the intrauterine death was presumed to be from long-standing uncontrolled GPP (8). The healthy offspring in the current case supports the non-teratogenic effect of secukinumab, albeit administered only during the first trimester. More evidence to confirm the efficacy and safety of secukinumab in GPP during pregnancy is needed.

CONCLUSIONS

This case study indicates that secukinumab (anti-IL-17 Ab) can be a highly effective and safe treatment for GPP during pregnancy. In refractory cases, the more rapid the initiation of treatment, the less serious the patient's complications.

ABBREVIATIONS

GA: Gestational age

GPP: Generalized pustular psoriasis

IL-17: Interleukin-17

DECLARATIONS

Ethics approval: This study was reviewed by the Research Ethics Committee of the Faculty of Medicine, Chiang Mai University (study code: MED-2564-08061).

Photographic Consents and Consent to Participate: Written informed consent was obtained from the patient for publication of this case report and accompanying images.

CONFLICT OF INTERESTS

The authors declare that they have no conflict of interests.

FUNDING

none

AUTHORSHIP

PK: Conceptualization-Equal, Data curation-Equal, Formal analysis-Equal, Investigation-Equal, Methodology-Equal, Project administration-Equal, Validation-Equal, Visualization-Equal, Writing-original draft-Lead

SK: Investigation-Equal, Writing-review & editing-Equal

NT: Conceptualization-Equal, Formal analysis-Equal, Investigation-Equal, Methodology-Equal, Validation-Equal, Visualization-Equal, Writing-review & editing-Equal

SC: Conceptualization-Lead, Data curation-Equal, Formal analysis-Equal, Investigation-Equal, Methodology-Equal, Project administration-Equal, Supervision-Lead, Validation-Equal, Visualization-Equal, Writing-review & editing-Lead

MC: Conceptualization-Lead, Data curation-Equal, Formal analysis-Equal, Investigation-Equal, Methodology-Equal, Project administration-Lead, Supervision-Lead, Validation-Lead, Visualization-Equal, Writing-original draft-Supporting, Writing-review & editing-Lead

ACKNOWLEDGEMENTS

The authors wish to thank Dr. M. Kevin O Carroll, Professor Emeritus of the University of Mississippi School of Dentistry, USA and Faculty Consultant at Chiang Mai University Faculty of Dentistry, Thailand, for his assistance in the preparation of the manuscript.

REFERENCES

1. Baker H, Ryan TJ. Generalized pustular psoriasis. A clinical and epidemiological study of 104 cases. *Br J Dermatol.* 1968;80:771-93.
2. Tolman MM, Moschella SL. Pustular psoriasis (Zumbusch). *Arch Dermatol.* 1960;81:400-4.
3. Ulubay M, Keskin U, Fidan U, Çiçek AF, Çalışkan E, Karaca RE, et al. Case report of a rare dermatosis in pregnancy: impetigo herpetiformis. *J Obstet Gynaecol Res.* 2015;41:301-3.
4. Flynn A, Burke N, Byrne B, Gleeson N, Wynne B, Barnes L. Two case reports of generalized pustular psoriasis of pregnancy: Different outcomes. *Obstet Med.* 2016;9:55-9.
5. Wang WM, Jin HZ. Biologics in the treatment of pustular psoriasis. *Expert Opin Drug Saf.* 2020;19:969-80.
6. Porter ML, Lockwood SJ, Kimball AB. Update on biologic safety for patients with psoriasis during pregnancy. *Int J Womens Dermatol.* 2017;3:21-5.
7. Liu N, Zhu L, Cheng Y, Yu N, Yi X, Ding Y. Successful treatment of recurrent pustular psoriasis of pregnancy with secukinumab: a case report. *Acta Derm Venereol.* 2020;100:adv00251.
8. Chhabra G, Chanana C, Verma P, Saxena A. Impetigo herpetiformis responsive to secukinumab. *Dermatol Ther.* 2019;32:e13040.