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A Case of the Safety and Efficacy of Guselkumab in Psoriasis with Alcoholic Liver Cirrhosis

Hyun Min Nam, Soo Hyeon Noh, Bo Ra Lim[1], Do Hyeon Kim[1], Seung Yeon Lee[1], Wang Guk Oh[2]

Department of Dermatology, Design Hospital, Jeonju, [1]Department of Dermatology, Wonkwang University School of Medicine, Iksan, [2]Department of Gastroenterology, Design Hospital, Jeonju, Korea

Dear Editor:

Psoriasis is a chronic inflammatory cutaneous disease with a prevalence of approximately 0.5% to 1%. Its treatment varies depending on severity and comorbidities. Owing to concerns of hepatotoxicity, physicians hesitate to prescribe conventional systemic drugs, such as methotrexate and acitretin, to psoriasis patients who have concomitant liver abnormalities. Although biologics have little influence on liver function and are not contraindicated in patients with such abnormalities, few studies specifically address the safety and efficacy of biologics in patients with psoriasis and concomitant liver disease (Table 1)[1-3].

A 34-year-old female patient presented at the emergency room of Design Hospital with esophageal varix rupture complicated by alcoholic liver cirrhosis. The patient's Child-Pugh score was 9 (class B). A dermatological consultation for psoriasis treatment was performed during treatment for alcoholic liver cirrhosis in the intensive care unit (ICU).

The patient showed fine scaly patches and erythematous scaly plaques on her entire body. Results of a skin biopsy of an erythematous scaly plaque on her right thigh were consistent with psoriasis (Fig. 1A, B). She previously received conventional treatments such as cyclosporine and phototherapy in the past, but the lesions had not improved. Topical calcipotriol/betamethasone dipropionate was applied while the patient was in the ICU, but the lesions persisted (Fig. 1C, D). The patient was then transferred to the general ward and prescribed guselkumab, an interleukin (IL)-23 blocker, because other conventional systemic treatments (e.g., methotrexate and acitretin) are contraindicated in patients with liver abnormalities. The patient's psoriatic lesions improved rapidly upon initiation of guselkumab injections. She achieved Psoriasis Area and Severity Index 90 after the third treatment, and she did not have any symptoms or signs suggesting acute exacerbation of liver cirrhosis (Fig. 1E, F). In addition, no opportunistic or mycobacterial infections, spontaneous bacterial peritonitis, or hepatocellular carcinoma were observed during the 20 weeks of observation.

It is known that T helper 17 cells, which are stimulated by IL-23 and produce IL-17 and IL-22, play a critical role in sustaining chronic inflammation in psoriasis[4]. Guselkumab,

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Corresponding author: Hyun Min Nam, Department of Dermatology, Design Hospital, 390 Gyeonhwon-ro, Deokjin-gu, Jeonju 54910, Korea. Tel: 82-63-240-2955, Fax: 82-63-240-2019, E-mail: namdan@naver.com
ORCID: https://orcid.org/0000-0002-0741-9117

Table 1. Summary of biological medications prescribed in patients with psoriasis and liver diseases

Author (year)	Study design (location)	Patient	Biologics	Adverse events
Begon et al. (2018)[1]	Retrospective observational analysis (France)	Psoriasis + liver cirrhosis (n = 23)	Etanercept Adalimumab Infliximab Ustekinumab	No opportunistic infections No mycobacterial infections No spontaneous bacterial peritonitis No hepatocellular carcinoma Erysipelas (n = 3) Non-severe pneumonia (n = 1) Sepsis of unknown origin (n = 1)
AlMutairi and Abouzaid (2018)[2]	Prospective controlled study (Kuwait)	Psoriasis + chronic viral hepatitis (n = 39)	Ustekinumab Adalimumab Etanercept	No liver failure Transient increase of aminotransferases levels (n = 3)
Vilarrasa et al. (2010)[3]	Retrospective review (Spain)	Psoriasis + liver disease* (n = 32)	Etanercept Efalizumab Infliximab Adalimumab Ustekinumab	No progression of liver disease No liver-related adverse events No progression in HCV RNA counts

HCV: hepatitis C virus, NAFLD: non-alcoholic fatty liver disease. *Patients with HCV infection, fatty liver disease and transient abnormal liver enzymes, NAFLD, or alcoholic liver cirrhosis are included.

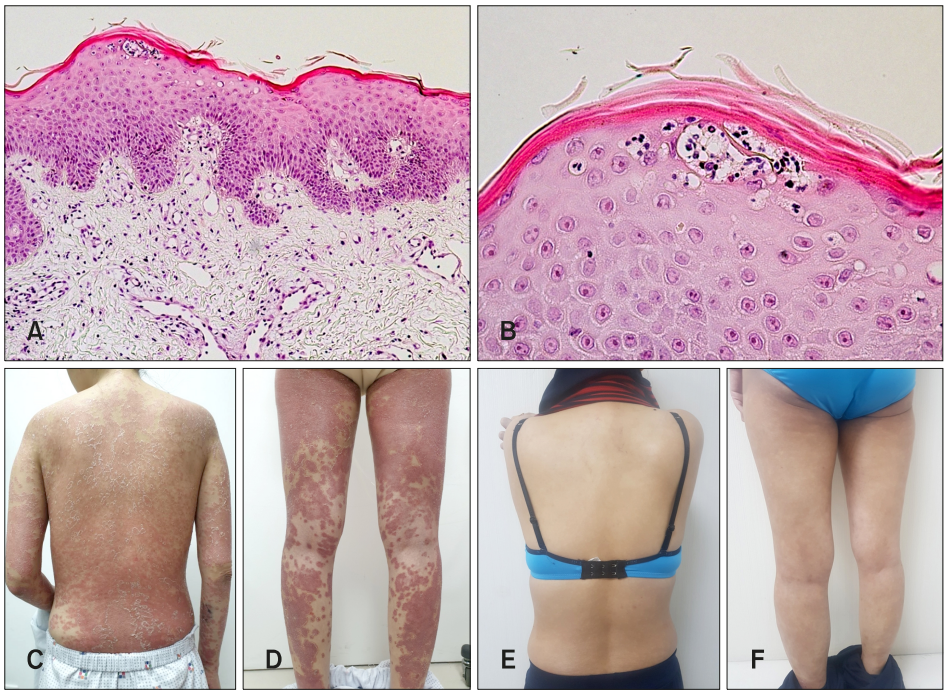

Fig. 1. (A) Histopathologic examination of skin biopsy sample obtained when the patient was admitted in the intensive care unit. It revealed acanthosis, with neutrophils in the hyperkeratotic and exocytotic areas of the epidermis, dilated capillaries, and perivascular lymphohistiocytic infiltration in the upper dermis (H&E, ×100). (B) High-power histologic feature showing spongiform pustules in spinous layer (H&E, ×400). (C, D) Clinical features at baseline when the patient was transferred to the general ward. Fine scaly patches and erythematous scaly plaques were present on the whole body. (E, F) Clinical features after the third treatment of guselkumab. Degrees of erythema, thickness, and scaling improved remarkably. The patient achieved a Psoriasis Area and Severity Index (PASI) 90 after the third treatment of guselkumab (PASI score at baseline, 18.4; PASI score after treatment, 1.6).

a selective monoclonal antibody for IL-23, ameliorates psoriasis symptoms by blocking the T helper 17 pathway. Guselkumab has no contraindications except for hypersensitivity to guselkumab or any excipients, and previous clinical studies have shown no increased risk of serious infections or malignancy[5].

One observational study revealed that IL-12/23 blockers are highly effective in psoriasis patients with alcoholic cirrhosis and do not cause opportunistic infections, mycobacterial infections, and hepatocellular carcinoma[1]. Additionally, persistently high efficacy of biologics was reported despite the ongoing alcohol abuse[1]. Although limited data are available on guselkumab safety in patients with liver insufficiency, the data on safety of IL-12/23 blockers suggest the safety of guselkumab in patients with liver cirrhosis.
In conclusion, our case demonstrates that biologics may be a treatment option for severe psoriasis in patients with concomitant liver cirrhosis in whom conventional treatments are contraindicated or have failed.
We received signed consent form from the patient for the publication of all photographic images.

CONFLICTS OF INTEREST

The authors have nothing to disclose.

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ORCID

Hyun Min Nam, https://orcid.org/0000-0002-0741-9117
Soo Hyeon Noh, https://orcid.org/0000-0002-9705-9214
Bo Ra Lim, https://orcid.org/0000-0003-1717-857X
Do Hyeon Kim, https://orcid.org/0000-0001-7971-5823
Seung Yeon Lee, https://orcid.org/0000-0002-0725-9010
Wang Guk Oh, https://orcid.org/0000-0002-8748-2289

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