

Treatment of Recalcitrant Acrodermatitis Continua of Hallopeau With Brodalumab

Nima Milani-Nejad MD PhD, Jessica Kaffenberger MD
Department of Internal Medicine, Division of Dermatology, The Ohio State University Wexner Medical Center, Columbus, OH

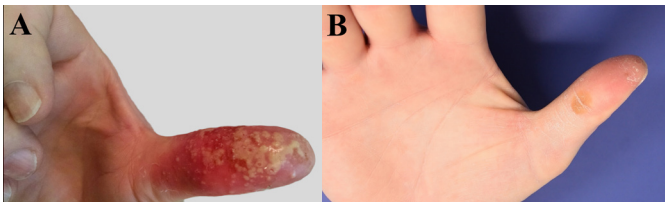
To the Editor: Acrodermatitis continua of Hallopeau (ACH) is a relatively rare chronic disorder with clinical findings of pustules and erythematous plaques on the digits.[1] Although it is a variant of pustular psoriasis, it can be resistant to multiple lines of therapy. We describe for the first time a patient with recalcitrant ACH successfully treated with brodalumab, an interleukin-17 receptor A (IL-17RA) blocking antibody.

Case Report:

A 60-year-old male presented to our clinic with a 20-year history of persistent eruption on his right thumb. The patient indicated that the thumb was extremely painful with constant throbbing exacerbated by pressure and it was difficult for him to even complete activities of daily living due to the pain. Physical examination of the right thumb showed pustules located on a well-demarcated erythematous plaque (Figure 1A) and onychodystrophy of the right thumb nail consistent with a clinical diagnosis of ACH. He previously had an incomplete response to infliximab several years prior to his presentation to our clinic; however, this medication was no longer effective. He failed multiple therapies including narrowband ultraviolet light therapy, topical corticosteroids, topical tazarotene, methotrexate, acitretin, cyclosporine, apremilast, adalimumab, ustekinumab, secukinumab, ixekizumab, and guselkumab.

He was started on brodalumab, an IL-17RA blocking antibody using the recommended dosing for plaque psoriasis (210 mg on weeks 0, 1, and 2 and then every 2 weeks). He had considerable improvement with resolution of the pustules and inflammatory plaque which was sustained at 6-month follow up (Figure 1B).

FIGURE 1. (A) Pustules on a well demarcated erythematous plaque on the right thumb prior to initiation of brodalumab. (B) Considerable improvement after 6 months of brodalumab therapy.



Discussion:

ACH was described by Henri Hallopeau in 1890 and is now considered to be a rare and particularly recalcitrant subtype of pustular psoriasis.[1] It typically presents with erythema, pustules, nail dystrophy, and pain of predominately the fingers and less commonly the toes.[1] Even though the disease is limited only to the digits, it can have a profound impact on quality of life. ACH is typically excluded in clinical trials and without definitive guidelines dermatologists rely on off-label use of medications approved for plaque-type psoriasis. However, as exemplified by our patient, ACH can be particularly resistant to multiple therapies that are typically used for plaque-type psoriasis.

IL-17 pathway is now recognized to have a pivotal role in pathogenesis of psoriasis and both anti-IL17A and anti-IL17RA antibodies have good outcomes in the treatment of psoriasis.[2] Of interest, our patient had no response to secukinumab and ixekizumab which target IL-17A and prevent its binding to the IL-17 receptor.[3] Brodalumab targets the IL-17RA receptor itself and therefore not only blocks the binding of IL-17A but also its isoform IL-17F.[1] Studies have shown increased expression of IL-17A and IL-17F in lesions of palmoplantar pustulosis.[1] This provides a potential explanation of why our patient only responded to brodalumab and not to IL-17A blocking antibodies. Further studies are warranted to determine the roles of isoforms of IL-17 in pathogenesis of ACH.

To our knowledge, this is the first case report of successful response of ACH with brodalumab highlighting the utility of blocking IL-17RA in treatment of recalcitrant cases of this disorder.

Disclosure:

JK is a principal investigator for AbbVie, AnaptysBio, Bristol-Myers, Cara Therapeutics, Celgene, Corrona, Eli Lilly, Janssen, Novartis, Pfizer, Regeneron, Xbiotech.

References:

1. Navarini AA, Burden AD, Capon F, et al. European consensus statement on phenotypes of pustular psoriasis. *J Eur Acad Dermatol Venereol.* 2017.
2. Lynde CW, Poulin Y, Vender R, Bourcier M, Khalil S. Interleukin 17A: toward a new understanding of psoriasis pathogenesis. *J Am Acad Dermatol.* 2014;71:141-150.
3. Lonnberg AS, Zachariae C, Skov L. Targeting of interleukin-17 in the treatment of psoriasis. *Clin Cosmet Investig Dermatol.* 2014; 7:251-259.
4. Murakami M, Hagforsen E, Morhenn V, Ishida-Yamamoto A, Iizuka H. Patients with palmoplantar pustulosis have increased IL-17 and IL-22 levels both in the lesion and serum. *Exp Dermatol.* 2011; 20:845-847.

AUTHOR CORRESPONDENCE

Jessica Kaffenberger MD
E-mail:..... Jessica.Kaffenberger@osumc.edu