

LETTER

Intramatrix methotrexate for treatment of resistant acrodermatitis continua of Hallopeau: An alternative in COVID-19

Dear Editor,

Acrodermatitis continua of Hallopeau (ACH) is a localized form of pustular psoriasis characterized clinically by recurrent eruption of pustular lesions over digits, which extends proximally and over a period of time can result in onychodystrophy and anonychia.¹ Treatment options for ACH are numerous including topical steroids, topical vitamin D analogue, methotrexate, cyclosporine, systemic retinoid, phototherapy, and recent use of biologicals such as IL-17 inhibitor secukinumab, IL-12/23 inhibitor ustekinumab, and anti-TNF alpha infliximab. But in the times of coronavirus disease (COVID-19), prescribing a patient with systemic immunosuppressant such as methotrexate or biologicals might outweigh the benefit as compared to the risk to the patient and might make the patient prone to the infection.²

A 34-year-old female presented to outpatient department with complains of pustulation and pain over right great toe nail unit from 2 years. Lesions were gradually progressing proximally toward the dorsa of great toe and distally toward nail unit resulting in the loss of nail. The past history of treatment with oral antibiotics and topical steroids was present with no improvement. Examination revealed anonychia, pustules over the nail bed, peripheral scaling, and pigmentation over great toe extending up to the proximal nail fold. A nail bed biopsy was performed, which showed hyperkeratosis, parakeratosis, decreased thickness of granular layer, epidermal collection of neutrophils, and psoriasiform hyperplasia with regular elongation of rete ridges with dermis showing dense perivascular collection of lymphocytes, neutrophils, and few mast cells (Figure 1). Histopathological features confirmed the clinical diagnosis of ACH. Patient had received treatment with topical steroids in the past with no improvement. Systemic methotrexate therapy for one toe involvement was not justified as it requires baseline blood parameters with regular monitoring along with the risk of systemic toxicity. Hence, a local, safe, and cheap alternate solution was required. Ampule of 1 mL of 15 mg methotrexate was diluted with 2 mL of sterile distilled water to reach a concentration of 5 mg/mL. The solution of 0.2 mL was injected intramatrix on either sides of right great toe using an insulin syringe. The needle was inserted laterally at an angle of 45° from the proximal nail fold, and the solution was injected into the matrix. An appropriate level of placement was indicated by blanching/yellowish discoloration. Sessions were repeated on monthly basis for a total of four sessions. Patient reported significant improvement with the first session with no appearance of new pustules or scaling. Lesions disappeared by

fourth session completely (Figure 2). Patient was advised follow-up on a monthly basis, and there were no signs or symptoms of relapse for 6 months postcompletion of intramatrix injections.

Methotrexate is a folic acid analogue with anti-inflammatory, anti-proliferative, and immunosuppressive effects. The mechanism of actions of methotrexate can be divided into DHR (dihydrofolate reductase) mediated and non-DHR mediated.³ Methotrexate also promotes apoptosis of activated CD4 T cells and reduces neovascularization.⁴

Intralesional methotrexate has been tried for the treatment of keratoacanthoma,⁵ CD30+ lymphoma,⁶ nail psoriasis,⁷ and resistant case of pyoderma gangrenosum⁸ in the past. Yoo and Kim reported 11 cases of keratoacanthoma who were treated with 0.1 to 0.8 mL of 12.5 to 25 mg/mL methotrexate intralesional at an interval of average 10 days with significant reduction in the size of lesions with an average of 4.3 sessions per patient.⁹ The literature review shows the use of low-dose intralesional methotrexate is a relatively safe procedure and is not associated with any significant adverse effects. This is the first case illustrating the use of intralesional methotrexate for ACH. As the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) has captivated more than 4.9 million people across the globe with more than 40% to 60% patients being asymptomatic, treating recalcitrant cases of ACH intramatrix methotrexate might be a considerable alternative bypassing the systemic adverse effects of immunosuppression while providing optimum results.

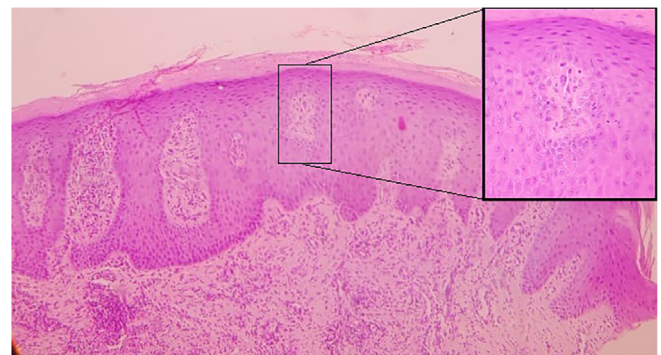


FIGURE 1 200× Histopathological examination showing psoriasiform hyperplasia with hyperkeratosis, thinning of granular layer, intraepidermal neutrophils, and dermal perivascular lymphocytic infiltration (box on the right upper corner shows the magnified image of intraepidermal neutrophilic abscess (Munro's abscess))



FIGURE 2 Sequential improvement in clinical picture with the disappearance of scaling and complete healing of the epidermis

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

A.J. contributed to the diagnosis and case writing of research. S.R. contributed to performance of all tests carried out in research. M.N. contributed to manuscript writing and data collection. K.P. contributed to histopathology reporting. S. P. contributed to guidance for manuscript writing and diagnosis.

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