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Refractory Palmoplantar Pustulosis Achieving Remission with Anti-IL-17A Agent Vunakizumab

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Introduction & Objectives: Palmoplantar Pustolosis (PPP) is a chronic inflammatory skin disease characterized by recurrent sterile pustules localized to the palms and soles, and it is often associated with pain. Patients with PPP experience relapses. However, with the etiology of PP remaining unclear, effective treatment for refractory cases is challenging. Here, we present a case of PPP that achieved remission following treatment with vunakizumab, a monoclonal antibody targeting interleukin-17A (IL-17A).

Materials & Methods: A 41-year-old female presented to the dermatology department with a 6-year history of recurrent vesicular eruptions on her palms and soles, accompanied by pain and pruritus. Physical examination revealed densely distributed vesicles and pustules on the fingers, palmar surfaces and plantar regions. Erythema, fissures and hyperkeratotic plaques were observed on the heels. Previous therapeutic interventions, including topical corticosteroids, oral antihistamines and multiple systemic immunomodulating agents were ineffective. Histopathological evaluation of a skin biopsy indicated palmoplantar pustulosis. Laboratory investigations showed an elevated serum total IgE level but a normal Th2/Th17-associated cytokine profile (IL-17, IL-4, IL-13 and IL-31). Genetic analysis identified no pathogenic mutations in *IL-36RN*. Based on the patient's clinical features and histopathology report, a diagnosis of PPP was established. The patient initiated subcutaneous administration of vunakizumab 120mg every 2 weeks, in conjunction with her consistent use of halometasone/ triclosan cream (0.05%; 1%) twice daily. The treatment effectiveness was assessed using the Palmoplantar Pustulosis Area Severity Index (PPPASI), the Palmoplantar Pustular Physician's Global Assessment (PPP-PGA) and the Dermatology Life Quality Index (DLQI).

Results: At baseline, the patient had a PPPASI score of 11.6, a PPP-PGA score of 4 (severe) and a DLQI score of 20, indicative of profound disease severity and significantly impaired quality of life. After 4 weeks of vunakizumab treatment, her PPPASI score declined to 7.0, PPP-PGA to 3 (moderate), and DLQI to 14. Clinical examination revealed a reduction in vesicles and pustules on the fingers and palms, part of the areas evolved into desquamation. Fissure on the plantar surfaces demonstrated initial improvement. By week 6, further clinical progress was observed. The patient's PPASI score decreased to 5.6, PPP-PGA to 2 and DLQI to 8. Complete resolution of lesions was achieved on the fingers, while only residual pustules persisted on the thenar eminence of the palm. Plantar surfaces, particularly the heels, exhibited reduction in vesicles and pustules, alongside further healing of fissures. The patient reported no adverse events after using vunakizumab.

Conclusion: We report a case of refractory PPP that exhibited significant clinical improvement following 6 weeks of vunakizumab treatment. The patient remains on this therapeutic regimen, with ongoing follow-up to evaluate the treatment's long-term efficacy and safety. The treatment rationale for this case was informed by a randomized controlled trial which demonstrated the efficacy of an IL-17RA inhibitor, brodalumab, in PPP management. While further studies are needed, this case suggests that vunakizumab could potentially be a viable therapeutic choice for refractory PPP.