

Letter

Off-label Use of Secukinumab: A Potential Therapeutic Option for SAPHO Syndrome

To the Editor:

We read the recent article by Wang et al with great interest.¹ The authors described a cohort of 4 patients with SAPHO (synovitis, acne, pustulosis, hyperostosis, and osteitis) syndrome who showed substantial improvement in skin lesions, clinical conditions, and whole-body magnetic resonance imaging before and after treatment with secukinumab without concomitant conventional synthetic disease-modifying antirheumatic drugs (csDMARDs), nonsteroidal antiinflammatory drugs (NSAIDs), or other biologics, and suggested a potential benefit of secukinumab in the treatment of SAPHO syndrome. However, there are some details that need further clarification.

First, SAPHO syndrome is a rare chronic inflammatory disease involving bone, joint, and skin.² Although variable degrees of the efficacy of pharmacological therapies including antibiotics, bisphosphonates, NSAIDs, glucocorticoids, DMARDs, interleukin (IL)-1 receptor antagonist, and anti-tumor necrosis factor (TNF) have been described previously,² there is currently no consensus on the treatment of SAPHO syndrome and different treatment options may lead to different outcomes. Second, recent studies have revealed the potential role of cytokine dysregulation in SAPHO syndrome, such as IL-1 β , TNF- α , IL-8, IL-17, IL-18, and activated neutrophils.³ Blocking these cytokines may be an effective strategy for the treatment of SAPHO syndrome.³ IL-17 is a cytokine produced by Th17 cells, and a rising number of studies have identified a pathogenic role for IL-17 in SAPHO syndrome. For synovitis, IL-17 is effective in peripheral arthritis in the context of spondyloarthritis. For acne, the expression of IL-17 in acne lesions is increased and infiltrated by a large number of IL-17-expressing T cells. In addition, *Propionibacterium acnes* can trigger IL-17 secretion from CD4+ T cells in vitro. For pustulosis, IL-17 expression is increased in the skin of palmoplantar pustulosis. For hyperostosis, IL-17 induces osteoblastogenesis in vitro, whereas in an animal model of SpA, it inhibits new bone formation. For osteitis, inhibition of IL-17 is effective in suppressing spinal inflammation in ankylosing spondylitis (AS).⁴ Secukinumab is a fully human IgG1/ κ monoclonal antibody that specifically binds IL-17A and inhibits its interaction with the IL-17 receptor, thereby reducing IL-17A-mediated inflammatory disease, and has been approved for the treatment of psoriatic arthritis, moderate-to-severe psoriasis (PsO), AS, hypertrophic palmoplantar PsO, and generalized pustular PsO.⁵ Given its potent inhibition of IL-17 expression, secukinumab is being increasingly used off-label for the rheumatic diseases, particularly for those that are refractory to current standard treatment algorithms, including systemic lupus erythematosus, rheumatoid arthritis, TNF receptor-associated

periodic syndrome, and familial Mediterranean fever.^{6,7} Finally, the study by Wang et al¹ does provide an important therapeutic option for patients with SAPHO syndrome using secukinumab, but further observations are needed due to the limitations in sample size and design. In addition, given the complexity and heterogeneity of SAPHO syndrome, identifying possible benefits from secukinumab treatment merits consideration.

In summary, although some of the details in this article need to be further elucidated, this study reveals successful cases of secukinumab in the treatment of SAPHO syndrome and supports the growing interest in the use of secukinumab for SAPHO syndrome.

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The authors declare no conflicts of interest relevant to this article.

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