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Topic: Psoriasis

Prevalence of Candidiasis in Psoriasis Patients Treated With Interleukin-17 Inhibitors: Real-World Data From a Tertiary Center

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Introduction
Interleukin (IL)-17 inhibitors are effective and safe biological agents that we use in the treatment of psoriasis, however, these drugs can cause candida infections. Although real-world data on individual IL-17 inhibitors are available, comparative studies evaluating secukinumab, ixekizumab, and bimekizumab, which licensed in our country, are lacking. This real-world study aims to compare the frequency of candidiasis in patients with psoriasis who are followed up in our clinic and using IL-17 inhibitors with other studies conducted in the world, and to reveal the underlying factors other than these drugs.

Materials and Methods
Psoriasis patients using IL-17 inhibitors who were followed up in our clinic were retrospectively examined. Patients were divided into groups according to the medications they used, clinical features of psoriasis, and other risk factors; if candidiasis was present, treatments received, and responses were investigated.

Results
The study included 94 patients; 34% (n=66) were female and 66% (n=62) were male. The mean age of the patients was 46.4, and the median was 47. 61.7% (n=58) of the patients were using ixekizumab, 22.3% (n=21) were using secukinumab, and 16% (n=15) were using bimekizumab. 14.8% (n=14) of the patients had a history of immunsuppression, the most common cause is diabetes mellitus. Regarding candidiasis prevalence, 9.6% (n=9) of all patients developed candidiasis. Of these patients, 7 were female and 2 were male; the mean age was 53.6, and the median was 60 years. Based on the IL-17 inhibitor used, candidiasis developed in 6.9% (n=4) of patients in the ixekizumab, 4.8% (n=1) in the secukinumab, and 26.7% (n=4) in the bimekizumab group. Five patients developed oral candidiasis, and four patients developed vaginal candidiasis. Patients using ixekizumab tended to develop vaginal candidiasis, while those using bimekizumab tended to develop oral candidiasis. One ixekizumab patient and three bimekizumab patients who developed candidiasis had concomitant diabetes. It was observed that patients generally recovered successfully with topical treatment after developing candidiasis, and therefore it did not cause any disruption in psoriasis treatment.

Conclusions
IL-17 plays a role in neutrophil chemotaxis by binding to epithelial receptors A and F and activating the TRAF6–NF-κB/MAPK/C-EBP pathways via ACT1 (TRAF3IP2), stimulating the release of antimicrobial peptides, defensin, and G-CSF. Disruption of this signaling pathway leads to impaired candida clearance. On the other hand, hereditary disorders in the IL-17 axis can also cause the development of chronic mucocutaneous candidiasis. However, since the main target of IL-17 signaling is the epithelium, oropharyngeal and vulvovaginal candidiasis is most commonly seen as a result of IL-17 inhibition, and no significant increase in the risk of deep systemic infection is detected, and don't need discontinuation

of treatment. In this study, candidiasis rates were consistent with the literature for ixekizumab (3.3-4.9%) and secukinumab (1.7-4.7%), although the rate in the bimekizumab users was higher than expected (7.3-15.4%). This may be due to the small sample size, as other studies with smaller numbers of patients have also reported high candidiasis rates.

The higher prevalence of candidiasis in the bimekizumab arm compared to other interleukin 17 inhibitors, as seen in other studies in the literature, is thought to be a result of bimekizumab's dual inhibition of IL-17 A and F. In our study, candida infections were recorded as adverse events that successfully regressed with treatment and did not disrupt psoriasis treatment.

In conclusion, IL-17 inhibitors are biological agents with a favorable safety profile; however, they could increase susceptibility to candidiasis, by impairing mucocutaneous host defense, which is usually mild and manageable without treatment discontinuation. Patients should be informed about side effects, and treatment should be planned early if candidiasis develops.