

Comparison of IL-17, IL-33 and MMP-3 gene expression levels between patients with psoriasis and psoriatic arthritis and healthy controls

Hatice Reşorlu¹, Rahime Özlem Öztöpuz² & Özlem Coşkun^{2*}

¹Department of Physical Medicine and Rehabilitation,

²Department of Biophysics, Çanakkale Onsekiz Mart University, Faculty of Medicine, Çanakkale, Turkey

Received 11 November 2024; revised 10 February 2025

This study aimed to compare gene expression levels of biomarkers of inflammation, bone damage and cartilage damage (IL-17, IL-33, MMP-3) in psoriasis (PsO) and psoriatic arthritis (PsA) patients with healthy controls and to examine the relationship between changes in expression levels and disease activity. PsO and PsA patients and healthy volunteers were included in the study. Gene expression levels of IL-17, MMP-3 and IL-33 proteins were measured in blood samples. The severity of PsO disease was assessed by PASI, and the severity of PsA disease was assessed by DAS28 CRP and BASDAI. The study included 25 PsO patients (10 women, 15 men), 23 PsA patients (16 women, 7 men) and 26 healthy controls (18 women, 8 men). The disease duration of PsO patients was 12.2 ± 7.9 years and the PASI score was 9.8 ± 6.2 . The disease duration of PsA patients was 9.6 ± 9.1 years, 12 patients had axial, and 11 patients had peripheral features. BASDAI score of axial patients was 3.5 ± 1.5 and DAS28 CRP score of peripheral patients was 3.80 ± 1.8 . The results revealed that IL-17, IL-33 and MMP-3 gene expression levels were higher in PsO and PsA patients than in healthy controls, but these expression levels were not significantly associated with disease activity. However, a significant correlation was found between IL-33 gene expression level and PASI score in PsO patients ($P < 0.001$).

Keywords: Psoriasis, Psoriatic arthritis, IL-17, MMP-3, IL-33, Gene expression