The gingival crevicular fluid levels of interleukin-11 and interleukin-17 in patients with aggressive periodontitis. Ay ZY, Yılmaz G, Özdem M, Koçak H, Sütçü R, Uskun E, Tonguç MO, Kirzioğlu FY. Source

Department of Periodontology, Faculty of Dentistry, Süleyman Demirel University, Isparta, Turkey. zuhalyetkin@yahoo.com

Abstract

BACKGROUND: The balance (ratio) of anti-inflammatory and proinflammatory cytokines is thought to play an important role in the pathogenesis of chronic periodontitis. Moreover, the imbalance of anti-inflammatory/proinflammatory cytokines may modulate disease progression in aggressive periodontitis (AgP). This study aims to investigate the levels of interleukin (IL)-11 and IL-17 and their ratio in gingival crevicular fluid (GCF) in patients with AgP.

METHODS: This study included 20 patients with generalized AgP (GAgP) and 18 healthy controls (HC). For each patient, the values of clinical parameters, such as gingival index, plaque index, probing depth, and clinical attachment level, were recorded. Levels of IL-11 and IL-17 in GCF samples were evaluated using enzyme-linked immunosorbent assay. The values of clinical parameters, cytokine levels, and the ratios of cytokines were evaluated.

RESULTS: The values of all the clinical parameters were significantly higher in the GAgP group than in the HC group (P < 0.001). The total amount and concentration of IL-11 and the concentration of the IL-17 and IL-11/IL-17 ratio were significantly lower in the GAgP group than in the HC group (P < 0.001). The total amount of IL-17 was not significantly different between the groups (P = 0.317).

CONCLUSIONS: The IL-11/IL-17 ratio was decreased in the GAgP group because of the decreased IL-11 levels. The IL-11/IL-17 axis and the link between IL-17 and neutrophil function disorders in AgP should be investigated to clarify the role of the IL-11/IL-17 axis and its balance and imbalance in the pathogenesis of AgP.