Background: The balance (ratio) of anti- and pro-inflammatory cytokines is thought to play an important role in the pathogenesis of chronic periodontitis. Moreover, the imbalance of anti-/pro-inflammatory cytokines may modulate disease progression in aggressive periodontitis (AP). 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 AP.

Methods: Our study included 20 patients with generalized AP (GAP) 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 GAP group than in the HC group (P<0.001). The total amount and concentration of IL-11, the concentration of the IL-17 and IL-11:IL-17 ratio were significantly lower in the GAP 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 GAP 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 AP should be investigated to clarify the role of the IL-11/IL-17 axis and its balance and imbalance in the pathogenesis of AP.