The presence of leptin (OB) and soluble OB receptor (s-OB-R) in gingival tissue extract and gingival crevicular fluid has led the studies investigating the relationship between OB and periodontal diseases. This study aims to investigate the levels of OB and s-OB-R in serum and their presence in gingiva of healthy controls (HC), gingivitis (G), aggressive periodontitis (AP), and chronic periodontitis (CP) patients; and whether correlations exist between clinical and serum parameters, OB and s-OB-R.

Seventy-seven subjects [HC (n = 20), G (n = 20), CP (n = 21), and AP (n = 16)] were included in this study.

After the clinical periodontal parameter recordings and venous blood sampling, gingival tissues obtained. Serum parameters' levels determined with enzyme linked immune sorbent assay; and OB and OB-R in gingiva immunohistochemically. No significant differences were observed
regarding the serum parameters [high sensitivity C-reactive protein (hs-CRP), lipids, OB, and s-OB-R] when the groups were compared (P \( \leq 0.0125 \)). The serum OB has positive correlations with hs-CRP in the G group (P \( \leq 0.05 \)), and s-OB-R has presented significant negative correlations with BOP in HC group (P \( \leq 0.05 \)), with hs-CRP in G (P \( \leq 0.05 \)), and AP groups (P \( \leq 0.05 \)). The positive correlations were observed between the serum OB and HDL and body mass index in the CP group (P \( \leq 0.05 \)). In
all of the tissue samples of all groups, there was positive OB and OB-R immunoreactivity in the gingival epithelium. The gingival tissues contain both OB and OB-R. The serum levels of OB and s-OB-R do not vary between patients and with different periodontal conditions.