Serum lipoprotein-associated phospholipase A² and C-reactive protein levels in association with periodontal disease and hyperlipidemia. Fentoğlu O, Köroğlu BK, Kara Y, Doğan B, Yılmaz G, Sütçü R, Ay ZY, Tonguç MO, Orhan H, Tamer MN, Kırzoğlu FY. Department of Periodontology, Faculty of Dentistry, Süleyman Demirel University, Isparta, Turkey. ofentoglu@yahoo.com

Abstract BACKGROUND:

The aim of this study is to evaluate the levels of serum lipoprotein-associated phospholipase A(2) (Lp-PLA(2)) and high-sensitivity C-reactive protein (hsCRP) in association with periodontal disease and hyperlipidemia.

METHODS:

A total of 123 subjects with hyperlipidemia and 68 systemically healthy controls were included in the study. Subjects with hyperlipidemia were divided into two groups: the suggested-diet (HD) and prescribed-statin (HS) groups and then into three subgroups: the healthy (HDh and HSh), gingivitis (HDg and HSg), and periodontitis (HDp and HSp) groups. Periodontal parameters were recorded and included the plaque index, gingival index (GI), probing depth (PD), clinical attachment level (CAL), and percentage of sites with bleeding on probing (BOP). Fasting venous blood samples were obtained, and serum lipid, Lp-PLA(2), and hsCRP levels were evaluated.

RESULTS:

Median values for the GI, PD, BOP(%), and CAL in the HSg group were statistically significantly higher than those in the HDg and systemically healthy with gingivitis (Cg) groups. The HSp group had higher percentages of BOP compared to those of the chronic periodontitis and HDp groups. The HDg group had higher serum Lp-PLA(2) and hsCRP levels compared to those of the Cg and HSg groups. The ratio of total cholesterol to high-density lipoprotein cholesterol (TC/HDL) was significantly associated with the GI, PD, and BOP(%) in both groups with hyperlipidemia. Serum Lp -PLA(2) and hsCRP levels were significantly correlated with TC/HDL, the GI, PD, and BOP(%) in the HD group.

CONCLUSIONS:

Serum Lp-PLA(2) and hsCRP levels may play an important role in the association between periodontal disease and hyperlipidemia, and the control of these mediators may affect the inflammatory control of patients with hyperlipidemia and periodontal disease.