Abstract

Background: The purpose of this study is to determine the serum levels of malondialdehyde (MDA), as a lipid peroxidation marker, and 8-hydroxydeoxyguanosine (8-OHdG), as an oxidative DNA damage marker, in patients with chronic periodontitis (CP) and hyperlipidemia.

Methods: A total of 74 individuals were divided into four age-and sex-matched groups: 18 patients with hyperlipidemia and CP (HLp), 18 periodontally healthy patients with hyperlipidemia (HLh), 19 systemically healthy individuals with CP (Cp), and 19 systemically and periodontally healthy controls (Ch). Clinical periodontal parameters were measured, and serum lipids, MDA, and 8-OHdG levels were assessed in blood samples.

Results: 8-OHdG, MDA, probing depth, clinical attachment level, and percentage of sites bleeding on probing (BOP) were significantly higher in the HLp group than the Cp group. In the hyperlipidemic group, BOP was significantly correlated with total cholesterol, the ratio of total cholesterol to high-density lipoprotein cholesterol, and 8-OHdG levels. A significant correlation between 8-OHdG and MDA was also observed in the hyperlipidemia group.

Conclusions: In this study, serum MDA and 8-OHdG were found to be highest in the HLp group. The increased levels of MDA and 8-OHdG in HLp patients may be a result of a harmful oxidative status in association with hyperlipidemia and periodontitis.

Keywords

Author Keywords: Chronic periodontitis; deoxyguanosine; hyperlipidemias; lipids; malondialdehyde; oxidative stress