

ANALYSIS OF THE VALUES OF OXIDATIVE STRESS PARAMETERS IN SALIVA OF CHILDREN WITH GINGIVITIS

*Olivera Tričković-Janjić^{1,2}, Tatjana Cvetković¹, Marija Igić¹,
Branislava Stojković^{1,2}, Mila Janjić¹, Gordana Filipović^{1,2}*

University of Niš, Faculty of Medicine, Niš, Serbia¹
Clinic of Dentistry, Niš, Serbia²

Contact: Olivera Tričković-Janjić
Branka Miljkovića br. 34, 18 000 Niš, Serbia
Mail: zoranjjanjić@yahoo.com

Early detection and analysis of the values of the parameters of oxidative stress, malondialdehyde (MDA) and reactive carbonyl groups (RCG) in saliva, as possible biochemical markers in the diagnosis and prognosis of periodontal disease, may be of particular importance in children. For this reason, the aim of this study was to examine the levels of lipoproteins in the saliva of children without gingivitis and with gingivitis, as well as the degree of gingival inflammation.

The testing was conducted in 120 children aged 12.2 years, with permanent dentition. Gingival index by Löe-Silness was used for the gingival estimation. A modified method with thiobarbituric acid was used for the determination of MDA in unstimulated saliva. Colorimetric reaction with 2,4 dinitrophenylhydrazine (2,4 DNPH) was applied for the determination of RCG.

Results of the analysis of the average values of prooxidizer in the saliva of the patients in a study and the control group showed as statistically significantly higher in the patients of the study group, in RCG concentration (UMW=667.5, $z=-4.137$, $p<0.001$) as well as in the level of MDA (UMW=452.5, $z=-5.44$, $p<0.001$). The results of the analysis of the MDA level showed an increase in average values with increasing degree of gingival inflammation with statistical significance between the groups confirmed by the Kruskal-Wallis test ($\chi^2KW=32.45$, $p<0.001$) but not by the Mann-Whitney test. Results of the analysis of concentration of carbonyl groups in patients with varying degrees of gingival inflammation showed an increase with statistically significant differences in the values of this parameter among all groups of patients ($\chi^2KW=45.23$, $p<0.001$) and by the Mann-Whitney test the highest among the patients with healthy gingiva and patients with severe gingival inflammation (UMW=113.00, $z=-4.98$, $p<0.001$).

The presence and increase in the parameters of oxidative stress of malondialdehyde and carbonyl groups in the saliva of children with gingivitis is in accordance with the existence and severity of periodontal disease. These biochemical parameters may be an important diagnostic and prognostic biomarkers of paradontium health state. *Acta Medica Medianae* 2016;55(2):12-18.

Key words: children, gingivitis, malondialdehyde, reactive carbonyl groups