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Association between dental-oral health in young adults and salivary glutathione, lipid peroxidation and sialic acid levels and carbonic anhydrase activity.

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Abstract

The aim of the present study was to evaluate the relationship between salivary oxidative stress and dental-oral health. Healthy young adults, matched for gender and age, with (N = 21, 10 men, mean age: 20.3 +/- 1 years) and without (N = 16, 8 men, mean age: 21.2 +/- 1.8 years) caries were included in this study. The World Health Organization (WHO) caries diagnostic criteria were used for determining the decayed, missing, filled teeth (DMFT) index. The oral hygiene and gingival status were assessed using the simplified oral hygiene index and gingival index, respectively. Unstimulated salivary total protein, glutathione (GSH), lipid peroxidation and total sialic acid levels, carbonic anhydrase activity, and salivary buffering capacity were determined by standard methods. Furthermore, salivary pH was measured with pH paper and salivary flow rate was calculated. Simplified oral hygiene index and gingival index were not significantly different between groups but DMFT scores were significant ($P < 0.01$). Only, GSH values were significantly different ($P < 0.05$) between groups (2.2 and 1.6 mg/g protein in young adults without caries and with caries, respectively). There was a significant negative correlation between DMFT and GSH ($r = -0.391$; $P < 0.05$; Pearson's correlation coefficient). Our results suggest that there is an association between caries history and salivary GSH levels.

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