

Status of lipid peroxidation and antioxidants in subjects with oral leukoplakia

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Citation: R. Sivaraj, et al., Status of lipid peroxidation and antioxidants in subjects with oral leukoplakia. American Journal of Pharmacology and Pharmacotherapeutics.2022, 9:2.

Abstract

Background: Mismatched status of oxidant–antioxidant has been implicated in the pathogenesis of several diseases, including leukoplakia and oral cancer.

Aim: To investigate the status of lipid peroxidation and antioxidants in different stages of leukoplakia.

Materials and Methods: Twenty subjects with leukoplakia of various clinical stages and an equal number of positive and negative controls were selected for the study. The level of thiobarbituric acid reactive substances (TBARS) and the antioxidants- superoxide dismutase, reduced glutathione, glutathione peroxidase and catalase were determined in plasma.

Results: Lipid peroxidation was found to be significantly elevated ($p < 0.001$) while levels of antioxidants ($p < 0.001$) were significantly reduced in leukoplakia as compared with positive as well as negative controls. Accordingly, significant ($p < 0.001$) pattern of progression in TBARS was observed in various clinical stages of leukoplakia. Among antioxidants, glutathione (GSH) was found to be significantly ($p < 0.001$) reduced along the stages on comparison with two control groups.

Conclusions: Glutathione could be important in assessing the severity in terms of leukoplakia and malignant transformation.

Keywords: Leukoplakia, Lipid peroxidation, Oxidative stress, Free radicals, Antioxidants

Received: January 24, 2022; **Accepted:** January 28, 2022; **Published:** February 08, 2022

Biography

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