

Abstract

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Antioxidant status and lipid peroxidation in small intestinal mucosa of children with celiac disease.

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OBJECTIVE: To explain the role of oxidative stress in the pathology of celiac disease.

DESIGN AND METHODS: The activities of antioxidant enzymes and the levels of glutathione and lipid hydroperoxides were measured in the samples of small intestinal biopsies from 39 children with different forms of the disease and in 19 control subjects.

RESULTS: The activities of analyzed enzymes varied significantly between the examined groups. An increase in the activities of superoxide dismutase was observed in patients with active and silent celiac disease, while the activities of glutathione peroxidase and glutathione reductase and the glutathione content were significantly reduced. The level of lipid hydroperoxides was significantly elevated in these groups.

CONCLUSIONS: Oxidative stress is an important factor in the pathogenesis of celiac disease. The antioxidant capacity of celiac patients is significantly reduced, mostly by a depletion of glutathione. Natural antioxidants and appropriate dietary supplements could be important complements to the classic therapy of celiac disease.

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