

Abstract

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Vitamin E levels in patients with celiac disease

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BACKGROUND: Coeliac disease (CD) is a genetically linked immune-mediated enteropathy triggered by the ingestion of gluten-containing grains food. Deficiencies of trace elements and vitamins may be found in patients with untreated CD. No systematic studies have been carried out on vitamin E status in coeliacs. Tocopherol deficiency is implicated in the biological processes leading to malignant cell transformations, neurological complications, brown bowel syndrome and reproductive disorders. Untreated patients with CD have higher incidences of these disorders than in general population.

AIM: The aim of this study was to investigate vitamin E status in patients with coeliac disease.

MATERIAL AND METHODS: We examined retinol plasma level and tocopherol levels both in plasma and in erythrocytes in 18 patients (age: 2-53 years) with active CD and 12 coeliacs (age: 3-36 years) on gluten-free diet without antiendomysium antibodies for at least 2 years. Vitamins were measured by high-pressure liquid chromatography according to the procedure of Driskell.

RESULTS: In untreated patients levels of plasma tocopherol (13.7 +/-3.8 micromol/L vs. 20 +/-7.1 micromol/L; $p<0.02$), erythrocytes tocopherol (1.7 +/-0.45 micromol/L vs. 2.89 +/-0.52 micromol/L; $p<0.001$) and ratio of plasma tocopherol to serum total cholesterol (3.36 +/-0.9 micromol/L vs. 4.24 +/-0.85 micromol/L; $p<0.02$) were significantly lower compared to those on gluten-free diet. In the all patients with active CD, concentrations of tocopherol in erythrocytes were below the norm ($N>2.5$ micromol/L). In untreated patients vitamin A levels did not achieve a significant difference in comparison with the coeliacs on gluten-free diet (1.75 +/-0.57 micromol/L vs. 1.97 +/-0.72 micromol/L; $p>0.05$). The lowest levels of tocopherol (in plasma: 5.7 micromol/L, in erythrocytes: 0.74 micromol/L) and retinol (0.8 micromol/L; $N>0.7$ micromol/L) were detected in the same patient refusing dietetic treatment for more than 10 years.

CONCLUSION: The conventional treatment of CD is gluten-free diet, but monitoring of tocopherol concentrations, especially in erythrocytes, and correction of its deficiency may offer some benefit for patients who fail to adhere strictly to a gluten free-diet or newly diagnosed coeliacs.

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