

Abstract

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Carnitine deficiency in patients with coeliac disease and idiopathic dilated cardiomyopathy.

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BACKGROUND AND AIMS: Idiopathic dilated cardiomyopathy (IDCM) and coeliac disease (CD) are two pathological conditions which may lead, by different mechanisms, to malabsorption of various micronutrients, including carnitine, active in cardiac metabolism. The aim of the present investigation was primarily to evaluate differences in serum concentrations of total carnitine between IDCM patients and patients with IDCM associated with CD and then also to evaluate, in the latter, the effect of a gluten-free diet on serum concentrations of total carnitine.

METHOD AND RESULTS: Serum carnitine was determined by enzymatic spectrophotometric assay in three groups of individuals: group A, 10 patients (5 males, 5 females), mean age 46.5±10.8 years, presenting isolated IDCM; group B, 3 patients (2 males, 1 female), mean age 34±8 years, with IDCM+CD; and group C, 10 healthy subjects (5 males, 5 females), mean age 38.6±11.1 years. All patients with IDCM belonged to class NYHA I-II. Mean concentrations of total serum carnitine in the group of patients with isolated IDCM (group A) were found to be lower than in the controls (group C). The concentrations in patients with IDCM associated with CD (group B) were lower than in the control group and also lower than in the isolated IDCM (group A). After 2 years on a gluten-free diet, patients presenting IDCM associated with CD showed a progressive increase in mean serum carnitine levels compared to values observed prior to the diet.

CONCLUSIONS: Patients presenting IDCM associated with CD show a greater decrease in serum total carnitine levels than patients presenting the isolated form of IDCM. A gluten-free diet, in these patients, leads to a progressive increase in serum levels of this substance.

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