

Abstract

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L-Carnitine in the treatment of fatigue in adult celiac disease patients: a pilot study.

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BACKGROUND: Fatigue is common in celiac disease. L-Carnitine blood levels are low in untreated celiac disease. L-Carnitine therapy was shown to improve muscular fatigue in several diseases.

AIM: To evaluate the effect of L-carnitine treatment in fatigue in adult celiac patients.

METHODS: Randomised double-blind versus placebo parallel study. Thirty celiac disease patients received 2 g daily, 180 days (L-carnitine group) and 30 were assigned to the placebo group (P group). The patients underwent clinical investigation and questionnaires (Scott-Huskisson Visual Analogue Scale for Asthenia, Verbal Scale for Asthenia, Zung Depression Scale, SF-36 Health Status Survey, EuroQoL). OCTN2 levels, the specific carnitine transporter, were detected in intestinal tissue.

RESULTS: Fatigue measured by Scott-Huskisson Visual Analogue Scale for Asthenia was significantly reduced in the L-carnitine group compared with the placebo group ($p=0.0021$). OCTN2 was decreased in celiac patients when compared to normal subjects (-134.67% in jejunum), and increased after diet in both celiac disease treatments. The other scales used did not show any significant difference between the two celiac disease treatment groups.

CONCLUSION: L-Carnitine therapy is safe and effective in ameliorating fatigue in celiac disease. Since L-carnitine is involved in muscle energy production its decreased absorption due to OCTN2 reduction might explain muscular symptoms in celiac disease patients. The diet-induced OCTN2 increase, improving carnitine absorption, might explain the L-carnitine treatment efficacy.

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