JPEN J Parenter Enteral Nutr. 2006 Jan-Feb;30(1):10-5.

Carnitine treatment improved quality-of-life measure in a sample of Midwestern hemodialysis patients.

Steiber AL[1], Davis AT, Spry L, Strong J, Buss ML, Ratkiewicz MM, Weatherspoon LJ.
Author information

Abstract

BACKGROUND:

Previously, we demonstrated that selected groups of hemodialysis patients might be more likely to have abnormalities of carnitine metabolism. The purpose of the present study was to examine the effects of carnitine therapy in these selected groups of hemodialysis patients on quality-of-life measures and erythropoietin dose.

METHODS:

This was a double-blind, randomized, controlled trial, in which 50 hemodialysis patients were treated with either 2 g i.v. carnitine or placebo. The treatment period was for 24 weeks.

RESULTS:

Thirty-four patients (15 in the treatment group) completed the study. The mean age was 69 +/- 15 years, 35% were women, and 44% had diabetes. Mean initial plasma total, free, short-chain acyl and long-chain acyl carnitine concentrations (micromol/L; mean +/- SEM) were 35.9 +/- 1.8, 18.2 +/- 1.1, 11.6 +/- 0.6, and 6.0 +/- 0.3, whereas the plasma acyl-to-free-carnitine ratio was 1.02 +/- 0.05. With respect to the Medical Outcomes Short Form-36 (SF-36), improvements from baseline were noted in the treatment group (n = 13) for role-physical (33.9 +/- 1.9 to 43.2 +/- 3.0, $p < .05$) and the SF-36 physical component summary score (36.1 +/- 2.7 to 39.7 +/- 2.3, $p = .09$) relative to changes in the control group (n = 14). The erythropoietin dose over the 24-week period was reduced from baseline in the treatment group relative to the placebo group (-1.62 +/- 0.91 vs 1.33 +/- 0.79 units erythropoietin/dry weight/hemoglobin concentration, respectively, $p < .05$).

CONCLUSIONS:

After 24 weeks of i.v. carnitine therapy, SF-36 scores were improved and erythropoietin doses were reduced in hemodialysis patients, relative to the control group.