Abstract

Background: The hepatopathy associated with short bowel syndrome (SBS) is a multifactorial disease associated with poor prognosis. Besides intestinal transplantation, no other treatment has been shown effective. The current study evaluated the efficacy of betaine for the treatment of hepatopathy associated with SBS.

Methods: A prospective, unicentric, non-placebo controlled trial was carried out. After initial evaluation, 10g of betaine anhydrous was administrated to SBS patients in two divided doses for three months. The hepatic steatosis was assessed through nuclear magnetic resonance (NMR), the inflammatory response by interleukin-6 (IL-6), tumor necrosis factor- (TNF-) and ferritin, besides the hepatic lesion through hepatic enzymes and bilirubin. Furthermore, the effect of betaine on homocysteine was evaluated as well as its safety and tolerability in this group of patients.

Results: After three months supplementation, patients showed decreased percentage of hepatic fat (p = 0.03) through triphasic NMR examination. There was no significant reduction of serum levels for inflammatory proteins and hepatic lesion markers. Homocysteinemia also did not present significant decrease. The most prevalent side effects were diarrhea and nausea, reported in 62% of the participants; however, these symptoms were transient and not severe enough to justify the treatment interruption. Parenteral nutrition-dependent patients did not present different hepatic lesion degree compared to patients who do not need the prolonged use of it.

Conclusions: Betaine was shown to be a potential agent for the treatment of hepatopathy associated with SBS, which was evidenced by NMR, although the markers for hepatic lesion have not presented significant decrease.

Keywords

Short bowel syndrome, Hepatic steatosis, Betaine, Magnetic resonance, Homocysteine.