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Double-blind randomized controlled trial of glutamine-enriched polymeric diet in the treatment of active Crohn's disease.

Journal of Pediatric Gastroenterology and Nutrition. 30(1):78-84, JAN 2000

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Abstract

BACKGROUND

Glutamine is traditionally considered a nonessential amino acid but may be conditionally essential in patients with catabolic conditions. Glutamine-supplemented foods in these patients have been shown to prevent deterioration of gut permeability, protect against the development of intestinal mucosal atrophy, and improve nitrogen balance. Animal models of inflammatory bowel disease suggest that

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Journal of Crohn's & colitis 2017; 11(4): 390-399.

glutamine-enriched enteral diets may lead to less severe intestinal damage, less weight loss, improved nitrogen balance, and reduced disease activity. The purpose of the current study was to compare the efficacy of a glutamine-enriched polymeric diet with a standard low-glutamine polymeric diet in the treatment of active Crohn's disease.

METHODS

Eighteen children with active Crohn's disease were randomly assigned to receive a 4-week course of either a standard polymeric diet with a low glutamine content (4% of amino acid composition; group S) or a glutamine-enriched polymeric diet (42% of amino acid composition; Group G). The two diets were isocaloric and isonitrogenous with an identical essential amino acid profile. Remission rates were analysed on an intent-to-treat basis. Changes in clinical and laboratory parameters of disease activity were also compared after 4 weeks of nutritional treatment.

RESULTS

Two of the children, both in group G, were withdrawn from the trial because of nontolerance of the diet. There was no difference between the two groups in proportion of patients achieving remission (intent-to-treat basis): 5 (55.5%) of 9 in group S versus 4 (44.4%) of 9 in group G ($p = 0.5$). Improvement in mean paediatric Crohn's disease activity index (PCDAI) was significantly more in group S ($p = 0.002$) but changes in orosomucoid level, platelet count, and weight were not different between the groups.

CONCLUSIONS

The findings suggest that a glutamine-enriched polymeric diet offers no advantage over a standard low-glutamine polymeric diet in the treatment of active Crohn's disease. Rather, it appears to be less effective in improving PCDAI. The reported beneficial effects of glutamine seen in many catabolic states must be viewed with caution when extrapolating to the management of Crohn's disease.

Polymeric diet alone versus corticosteroids in the treatment of active pediatric Crohn's disease: a randomized controlled open-label trial.

Clinical gastroenterology and hepatology : the official clinical practice journal of the American Gastroenterological Association 2006; 4(6): 744-53.

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