

Issue 94

In a nutshell

Dietary treatment can be as effective as steroids in management of Crohn's disease.

It is not so clear what type of diet is most effective, but there is no consistent evidence that an elemental diet is required to achieve these benefits in most cases.

Nutrition support in Crohn's disease

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NUTRITION RESEARCH REVIEW

Study one: Polymeric diet effective

Polymeric diet is just as effective as elemental diet in the treatment of active Crohn's disease in adults, according to research from England.

Subjects: 21 patients with active Crohn's disease.

Method: Randomised controlled trial comparing a polymeric diet with an elemental diet, both in enteral feeding.

Results: Two thirds of the patients completed the treatment (the others suffered treatment failure or intolerance to the polymeric feed). Clinical remission was obtained in 8/10 patients receiving elemental diet and 6/11 patients on polymeric diet (no significant difference between groups).

Reference: Verma S et al. Polymeric versus elemental diet as primary treatment in active Crohn's disease: a randomized, double-blind trial. *Am J Gastroenterol* 2000;95:735-9

Study two : Glutamine does not add any benefit

Another English study failed to show any benefit from adding glutamine to the polymeric diet in children with active Crohn's disease.

Subjects: 18 children with active Crohn's disease.

Method: Randomisation to four week course of either a standard polymeric diet with a low glutamine content (4% of amino acid composition) or one with a high glutamine content (42% of amino acid composition). The two diets were otherwise the same (isocaloric, isonitrogenous, same essential amino acid profile).

Results: Remission occurred in 5/9 patients on standard diet compared with 4/9 in the glutamine enriched diet (no statistical significance).

However, the standard polymeric diet resulted in greater improvement in the mean paediatric Crohn's disease activity index compared with glutamine enriched diet ($p = 0.002$).

Reference: Akobeng AK et al. Double-blind randomized controlled trial of glutamine-enriched polymeric diet in the treatment of active Crohn's disease. *J Pediatr Gastroenterol Nutr* 2000;30:78-84

Comments

There is no doubt that patients with Crohn's disease need careful attention to diet, if only to counter the likelihood of undernutrition. Children and adolescents with Crohn's disease are at risk of retarded growth (particularly males - see the recent publication ¹).

But there has been an active debate for some years on whether nutrition support using a diet low in allergens and/or complex proteins would help in bringing active Crohn's disease into remission.

A further question is whether dietary treatments could be used instead of corticosteroids in treatment, something which would obviously be of particular benefit to children in whom the side-effects of steroids are very worrying.

The reason behind this approach is that intestinal permeability is increased in Crohn's disease, and that large protein molecules crossing the gut wall intact can cause immune reactions that can in turn increase gut inflammation and disease severity.

A number of studies have suggested that dietary treatment can indeed be as effective as steroids, at least in the short term. A meta-analysis of 5 such randomised clinical trials involving 147 paediatric patients published last year reached this exact conclusion ².

What is not as clear is the optimal type of nutritional support. There is no strong evidence to suggest that elemental diet (where protein is broken down to its component amino acids) is essential, compared with polymeric diet.

Glutamine was tried because in other situations it has been shown to help counter increased gut permeability and improve nitrogen balance. However, these recent results do not confirm that hypothesis. Other researchers have looked at using antioxidant and omega-3 fatty acid enriched formula, but once again there are as yet no conclusive results on the clinical benefits of this.

For the clinician who is treating a patient with Crohn's disease, it is clear that nutrition support will be an important part of management. But for the moment, we cannot say for certain which formulation is going to be the best for the individual patient.

References:

1. Sentongo TA et al. Growth, body composition, and nutritional status in children and adolescents with Crohn's disease. *J Pediatr Gastroenterol Nutr* 2000;31:33-40
2. Heuschkel RB et al. Enteral nutrition and corticosteroids in the treatment of acute Crohn's disease in children. *J Pediatr Gastroenterol Nutr* 2000;31:8-15

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