

Small intestinal absorption and tolerance of enteral nutrition in acute colitis

Enteral nutrition is not widely accepted in the management of severe colitis, partly because of the reported impaired absorption in the small intestine.¹ Transit of food through the small intestine, however, is prolonged in patients with active ulcerative colitis,² which should enhance small bowel absorption by increasing the time of contact between food and small bowel mucosa.

We have re-evaluated small intestinal absorption in patients with severe colitis and examined the tolerance of enteral nutrition as assessed by stool output, symptoms, and clinical outcome.

Patients, methods, and results

Of the nine consecutive patients admitted to our unit between April 1985 and August 1986 who fulfilled criteria for severe non-specific colitis,³ seven had total ulcerative colitis and two Crohn's colitis. The last two patients had no radiological evidence of small bowel disease.

On day 1 oral fluids and food were withdrawn and fluid balance maintained intravenously. On day 2 the intravenous infusion was stopped, a fine bore nasogastric tube introduced, and Fortison Standard solution infused continuously at 40 ml/hour on day 2 and 80 ml/hour from days 3 to 7. Throughout the study all patients received 16 mg prednisolone sulphate intravenously four times a day and their stool output was collected. Clear water was allowed from day 3 onwards but all other food and drink were prohibited until enteral feeding was finished. From day 8 patients were allowed an ordinary diet. A 5 g xylose test was carried out on days 3 and 7.⁴ The fat content of stools passed from day 3 to day 8 was measured. Patients scored the severity of seven important symptoms on a visual analogue scale on alternate days. Results were analysed by Wilcoxon's rank sum test.

In eight of nine patients xylose absorption was normal. On day 3 the mean one hour blood xylose value was 1.1 (SEM 0.1) mmol/l and mean five hour urinary output 28% (SEM 3%) with almost identical results in every patient on day 7. In the one patient with subtotal Crohn's colitis the one hour blood xylose value (0.56 mmol/l) and five hour urinary excretion (17%) were reduced. Faecal fat excretion was normal in all patients (median 9 (range 5-14) mmol/day).

Clinical course during steroid treatment and with enteral nutrition from day 2 to day 7. Figures are means

	Day				
	1	3	5	7	10
Stool weight (g)	740	430*	340**	270***	370
Stool frequency	7.9	5.7*	4.5****	3.9****	4.3
Anorexia score	8.1	6.0	0.9	0.5	0
Urgency score	7.2	3.0	1.5	0.8	0.5
Pain score	7.0	5.0	2.0	2.0	1.2
Tenesmus score	5.8	4.0	2.0	1.0	0.8
Erythrocyte sedimentation rate (mm in first hour)	54	—	—	39	—
Albumin (g/l)	28	—	—	32*	—
Weight loss (%)	10.0	—	—	7.0*	—

Significance of differences from day 1: * $p < 0.05$, ** $p < 0.02$, *** $p < 0.01$, **** $p < 0.001$. All symptom scores showed significant improvement by day 3 to at least $p < 0.05$.

During enteral feeding there was a significant reduction in daily stool weight and frequency when compared with the starvation period of day 1 (table). After starting an ordinary diet there was a small but insignificant rise in stool output. A significant improvement was seen in all seven symptoms between day 1 and day 7. The preceding weight loss was reversed and serum albumin concentration increased.

Comment

The daily intake on enteral feeding was 80 g fat, 80 g protein, and 8.4 MJ (2000 kcal) energy, which, given the recorded anorexia, was certainly more than would be consumed in the first few days as normal food. Both fat and xylose were absorbed normally. This normal small intestinal function together with slow small bowel transit² explains the satisfactory tolerance of enteral nutrition. The initial high stool outputs during starvation show that in severe ulcerative colitis the diarrhoea is secretory, and as inflammation improved in response to steroids stool output fell rapidly despite feeding. Concomitant with the fall in stool output the symptoms of urgency, tenesmus, and pain had largely resolved by day 7. All patients remitted without surgery, the mean inpatient stay being 21 days.

Oral feeding has already been shown to have no adverse effect on clinical

outcome.⁵ The nutritional improvement in our study was comparable to that achieved by parenteral nutrition.⁵ Reports of malabsorption in ulcerative colitis or fears of making diarrhoea worse should not prevent doctors using this cheaper and safer route of nutritional supplementation, and starvation need no longer be a routine feature of protocols for the management of severe colitis.

- 1 Salem SN, Truelove SC. Small intestinal and gastric abnormalities in ulcerative colitis. *Br Med J* 1965;ii:827-31.
- 2 Rao SSC, Read NW, Holdsworth CD. Gastrointestinal transit and stool output in the pathophysiology of diarrhoea in ulcerative colitis (UC). *Clin Sci* 1986;71:41P.
- 3 Truelove SC, Witty LJ. Cortisone in ulcerative colitis. Final report on a therapeutic trial. *Br Med J* 1955;iii:1041-8.
- 4 Heaney MR, Culank LS, Montgomery RD, Sammons HG. Evaluation of xylose absorption as measured in blood and urine: a one hour blood xylose screening test in malabsorption. *Gastroenterology* 1978;75:393-400.
- 5 Dickinson RJ, Ashton MG, Axon ATR, Smith RC, Yeung CK, Hill GL. Controlled trial of intravenous hyperalimentation and total bowel rest as an adjunct to the therapy of acute colitis. *Gastroenterology* 1980;79:1199-204.

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Effect of fear of AIDS on sharing of injection equipment among drug abusers

Because drug users who inject are a high risk group for the acquired immune deficiency syndrome (AIDS)¹ there have been calls to provide them with sterile injection equipment to eliminate the need to share syringes and thus reduce the spread of AIDS.^{2,3} There is, however, no evidence that this measure will be effective because little is known of current injection practices and how they have changed since the risk of AIDS became imminent.

Patients, methods, and results

A questionnaire investigating the injection practices of drug abusers was completed anonymously by all of the 232 drug users attending three London drug dependence treatment units in January 1987.

Sex was recorded for 219 respondents, of whom 140 (64%) were men. Age was recorded in 222 cases: 78 (35%) were aged 20-29, 115 (52%) were aged 30-39, and 6 (3%) were aged under 20. Two of the respondents (1%) were known to be carriers of the AIDS virus, but most had not been tested.

Of the 232 respondents, 205 were receiving treatment, which for 184 patients included a prescription for methadone; 27 were undergoing pretreatment assessment. In all, 204 respondents (89%) were using drugs (excluding alcohol and cannabis and including prescribed methadone), of whom 90 (44%) did not inject at all, 51 (25%) injected only occasionally, and 63 (31%) took drugs mainly or exclusively by injection. Only 20 respondents had never injected drugs. The table shows the extent to which injection equipment had been and was being shared by the 212 who injected drugs. Many who had formerly shared equipment no longer did so, and although 64 still allowed others to use their syringes, only 19 used other people's dirty equipment.

Of 150 respondents who thought that they had received sufficient information about AIDS, 124 (83%) had consequently changed their drug using habits, including 35 who had stopped injecting and 52 who had stopped sharing. Of the 205 receiving treatment, 160 (78%) thought that this had helped them to make beneficial changes in their drug using habits. Most (198; 85%) thought that stopping injecting would be easier if treatment was available more quickly. Though 105 (45%) believed that providing syringes would encourage non-injectors to start injecting, 109 (47%) disagreed. Twenty one (21%) of the 99 respondents who were not regular injectors admitted that they would start injecting if sterile equipment was freely available.

Comment

Despite the risk of AIDS a hard core of drug abusers continue to share syringes. There are two overlapping groups: those who use syringes after someone else and those who allow others to use their syringes. The