

Issue 109

In a nutshell

A meta-analysis shows that there is no advantage to keeping patients fasting for the first 24 hours after feeding.

Other studies support the use of enteral rather than parenteral feeding after major surgery, wherever possible.

Enteral feeding after surgery

Arbor Clinical Nutrition Updates 2001 (Nov);109:1-2 ISSN 1446-5450

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NUTRITION RESEARCH REVIEW

Study one: Enteral vs fasting

There is no advantage to keeping patients fasting for the first 24 hours after gastrointestinal surgery. In fact early enteral feeding may well have clinical benefits. These are the conclusions by the British authors of a meta-analysis published last month.

Subjects and studies: A meta-analysis was carried out using data from 11 randomised, controlled trials. In all the trials one group was started on enteral feeding within 24 hours after elective gastrointestinal surgery, and in the control group patients were fasted ('nil by mouth'). These studies involved a total of 837 patients.

Method: In 6/11 studies, the enteral feeding was directly into the small bowel, in 5/11 it was by mouth.

Results: Early feeding reduced the risk of any type of infection (see table), with the greatest reduction being in the frequency of wound infections.

There was a reduction in the mean number of days spent in hospital in the early fed group (reduced by 0.84 days in the group fed early, 95% CI: 0.36-1.33 days, p=0.001).

There were non-statistically significant trends to reduced risk among the early fed group of: postoperative death and anastomotic dehiscence (the coming apart of the surgically closed ends of bowel after some bowel has been removed).

On the negative side, there was a higher likelihood of vomiting in the early fed group.

Reference: Lewis SJ et al. Early enteral feeding versus "nil by mouth" after gastrointestinal surgery: systematic review and meta-analysis of controlled trials. BMJ. 2001 Oct 6;323(7316):773-6.

Study two: Enteral vs parenteral feeding: no difference

Enteral feeding has no advantage over parenteral feeding in terms of mortality and major operative complications of abdominal surgery, according to a recent Italian study.

Subjects: 241 malnourished patients undergoing major elective abdominal surgery.

Method: Randomly assigned to receive post-operative enteral or parenteral nutrition.

Results: There was no significant difference in either post-operative major complications or mortality between the two groups.

Reference: Pacelli F. et al. Enteral vs parenteral nutrition after major abdominal surgery: an even match. Arch Surg 2001;136:933-6

Table: Relative risk of complications: enteral feeding vs fasting

	Relative risk	95% CI	Signif.
Infection	0.72	(0.54- 0.98)	p=0.036
Vomiting	1.27	(1.01- 1.61)	p=0.046

Study three: Enteral feeding has advantages

Enteral nutrition has several advantages over parenteral nutrition in post-operative care of patients operated on for gastrointestinal cancer, according to research from another Italian group.

Subjects: 257 patients with intra-abdominal or oesophageal cancer.

Method: Randomised to receive either early enteral or parenteral nutrition until oral intake reached at least 800kcal/day.

Results: There was no significant difference between the two groups in relation to either infectious or noninfectious complications, nor in relation to length of hospital stay or mortality.

More patients on parenteral nutrition reached the target goal for energy intake of 25 kcal/kg/day than those on enteral nutrition (enteral 79% vs parenteral 98% $p < 0.001$).

Advantages of enteral nutrition were:

- fewer electrolyte abnormalities (parenteral 14% vs enteral 4% $p < 0.01$)
- faster recovery of intestinal oxygen tension (43 vs 31mm Hg at day 7, $p < .001$)
- lower cost (\$25 vs. \$90.60/day)

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Reference: Braga M. et al. Early postoperative enteral nutrition improves gut oxygenation and reduces costs compared with total parenteral nutrition. Crit Care Med 2001;29:242-8

Comments

Patients undergoing surgery are at high risk for nutritional deficiency and that this can affect their clinical outcome. This includes rate of complications, length of hospital stay and short term mortality.

Some of the reason for this nutritional deficiency is the lower intake of these patients immediately after surgery. In part this is because such patients may often lack the interest or the ability to eat hearty meals at that time.

But in part it may also be due to a reluctance by the treating doctor to encourage the patient to eat.

Traditionally doctors may order 'nil by mouth' because of their concern about intestinal ileus, and the possible complications of vomiting (including lung inhalation). Another worry has been that the stress of digestion will break down surgical joins in the gut wall after resection.

The first study we summarised here suggests that there is little reason to continue with this kind of conservative approach to early post-operative feeding. Whilst the authors recommend further and larger studies be done, it seems that there may be value in doctors taking a more proactive approach to maintaining nutritional intake of their surgical patients immediately post-operatively.

Once the decision is made to feed, the question is: by which means? It is interesting that in 5 of the 11 trials included in the meta-analysis patients were fed by mouth rather than directly into the small bowel.

Comparing enteral with parenteral feeding, the second two studies summarised above both conclude that there is little to distinguish these two methods of nutrition support when it comes to overall morbidity and post-operative complications.

However, you can make comparisons on many different parameters. One of the most important parameters is certainly cost, and on that basis enteral feeding has a distinct advantage over parenteral.

Quite a number of other papers have been published on this issue over the last two years. The focus of these studies has included benefits to immune function (from so-called "immunonutrition") and on medium term morbidity and mortality (i.e. over several months)

Not all trials have had positive results. But it is fair to say that the overall trend of the results is that giving enteral or parenteral nutrition support in the early post-operative period does have clinically significant benefit.

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