Enteral or parenteral feeding after total gastrectomy: prospective randomised pilot study

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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
Enteral versus parenteral feeding after total gastrectomy in patients with gastric carcinoma.

Type of intervention
Post-treatment feeding management.

Economic study type
Cost-effectiveness analysis.

Study population
Patients with gastric carcinoma undergoing macroscopically curative total gastrectomy.

Setting
Secondary care (University hospital). The economic study was conducted in Tampere, Finland. The price year was not given.

Dates to which data relate
Effectiveness and cost data were collected during the three-year period 1992-95.

Source of effectiveness data
Effectiveness data were derived from a single study.

Link between effectiveness and cost data
Costing was undertaken prospectively on the same patient sample as that used in the effectiveness analysis.

Study sample
29 patients undergoing curative total gastrectomy for gastric cancer were randomised to receive enteral feeding by nasojejunal tube (13) and parenteral nutrition by central venous catheter (16).

Study design
This was a prospective randomised pilot study carried out in a single centre. Patients were followed up until discharge for a median of 11 days (range: 4 - 45). There was no loss to follow up.

Analysis of effectiveness
The analysis was based on intention to treat. The main health outcomes used in the analysis were: postoperative complications, serum C-reactive protein (CRP) and albumin concentrations, and postoperative abdominal symptoms (diarrhoea, abdominal distension, and nausea). Post-operative mortality rates were also considered. The two groups were comparable in terms of age, sex, and tumour site.

**Effectiveness results**
One patient in the enteral feeding group discontinued the study on day 1, but was not excluded from the results.

Differences in postoperative complications between the groups were not statistically significant (p=0.7).

Oesophagojejunal leaks developed in one patient in each group, and one patient (6%) in the parenteral group died on day 45 due to infective complications following an oesophagojejunal leak.

Infective complications occurred in 3 (23%) in the enteral group and 5 (31%) in the parenteral group.

Serum CRP concentration on day 6 was lower in the enteral feeding group than in the parenteral feeding group (32 (16) g/l compared to 61 (41) g/l; p=0.02)).

Enteral feeding was well tolerated.

Diarrhoea developed earlier in the enteral than in the parenteral group (days 3-5, compared to 5-7, respectively) but there was a tendency to an increased risk of diarrhoea in the parenteral group.

There were no catheter occlusions, dislocations, or accidental removals in the enteral feeding group and no puncture complications, catheter sepsis, or catheter dysfunction in the parenteral group.

**Clinical conclusions**
Early enteral nasojejunal feeding after total gastrectomy is safe and well tolerated.

**Measure of benefits used in the economic analysis**
The authors did not provide any measure of benefits.

**Direct costs**
Direct health service costs were considered, namely the total cost of feeding; including infusions, cannulas and catheters. Resource quantities were provided but no cost items were reported in the paper. Price dates were not given. Discounting was not applied because of the short time frame of the cost analysis.

**Statistical analysis of costs**
Not performed.

**Indirect Costs**
Not considered.

**Currency**
Finish marks (Fmk) (conversion to US dollars ($) performed).

**Estimated benefits used in the economic analysis**
Not applicable.
Cost results
The total cost of feeding for 5 days in the parenteral feeding group was more than four times higher than the cost for the enteral feeding group; Fmk1,905 ($405) compared to Fmk447 ($95).

Synthesis of costs and benefits
Not applicable.

Authors' conclusions
Enteral nasojejunal feeding is safe and well tolerated after total gastrectomy, and is cheaper than parenteral nutrition.

CRD COMMENTARY - Selection of comparators
The reason for the choice of the comparator (parenteral feeding after total gastrectomy) is clear, as it is widely used in the authors' setting. You, as a database user, should consider if this applies to your own setting.

Validity of estimate of measure of benefit
As this was a pilot study the results are based on a very small sample. The findings suggest that further randomised trials with appropriate sample size are needed in order to assess the effectiveness of early enteral versus parenteral feeding after total gastrectomy.

Validity of estimate of costs
The contents of the enteral and parenteral feeding formulas are given in great detail and the cost of cannulas and catheters are also considered in calculating the cost of feeding. No justification was provided as to why these costs only were included in the analysis. Costs may not be generalisable to other settings or countries.

Other issues
The authors acknowledge that there are few reports of early feeding after total gastrectomy for cancer, and that the results of this study are only preliminary.

Implications of the study
Future studies are needed in order to assess the cost-effectiveness of early feeding after total gastrectomy for cancer.

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