Elective conventional colectomy in the era of laparoscopic surgery
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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
Elective conventional colectomy combined with primary anastomosis and the aggressive postoperative care used for laparoscopic surgery. The new protocol consisted of outpatient bowel preparation, hospital admission on the day of surgery and intravenous metoclopramide starting before the operation and continuing every 6 hours, with diet starting at 24 hours after intervention.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Patients undergoing elective conventional colectomy. Patients excluded from the study were those who had peritonitis, obstruction, closure of loop colostomy, or emergency laparotomy for colonic bleeding.

Setting
Hospital. The study was carried out in Detroit, Michigan, USA.

Dates to which data relate
Effectiveness and resource use data for the intervention group were collected between August 1994 and February 1995. The corresponding data for the control group were collected in 1994. The price year was not stated.

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
A total of 24 consecutive patients undergoing elective conventional colectomy with primary anastomosis formed the intervention group, whilst an additional group of 30 consecutive patients undergoing conventional colectomy in the 7 months immediately before the intervention period were used as the historical control. No power calculations were reported.
Study design
This was a prospective case series with a historical control. The duration of follow-up was not stated, although results for the period after hospital discharge were presented.

Analysis of effectiveness
It was not clear whether the analysis was based on intention to treat or on treatment completers only. The main health outcomes used in the analysis were: nasogastric tube length of stay (NG), time to average bowel movement (BM) and postoperative length of stay (LOS) (early extubation and discharge were considered to be beneficial for the patient). Complication rates, hospital mortality and postoperative emergency room visits and readmissions to the hospital were also documented. Both groups were comparable in age, indications for operation, type of operation and operative time.

Effectiveness results
In the study group, the NG tube was removed within 24 hours of operation. In the control group, 27 patients had the NG tube stay for an average of 3.3 days, and only 3 had their NG tube removed within 24 hours. Bowel movement occurred on an average of 2.9 days (range: 2 - 5 days) post-operatively in the study group versus 4.6 days (range: 2 - 8 days) in the control group (p<.001). The average postoperative LOS was 3.9 days in the study group versus 7.4 days in the control group (p<.001). The total hospital stay was significantly less in the study group: 4 days, versus 8.1 days in the control group (p<.001). Complication rates, mortality and postoperative emergency room visits had between-group differences with a p value >0.05.

Clinical conclusions
The use of metoclopramide preoperatively seems to block triggering factors leading to ileus.

Measure of benefits used in the economic analysis
The measure of benefits in the economic analysis was the reduction in time before bowel movement, and postoperative hospital stay.

Direct costs
Hospital charges were used to approximate costs. Although the length of hospital stay variable was analysed separately from the costs, the elements considered in estimating the costs were not stated. Price dates were not provided. The data on charges were derived from actual data for the patients included in the clinical study.

Statistical analysis of costs
Student’s t test was used for the analysis of mean differences between groups.

Currency
US dollars ($).

Sensitivity analysis
No sensitivity analysis was performed.

Estimated benefits used in the economic analysis
Bowel movement occurred on average 2.9 days (range: 2 - 5 days) post-operatively in the study group versus 4.6 days (range: 2 - 8 days) in the control group (p<.001). The average postoperative LOS was 3.9 days in the study group versus 7.4 days in the control group (p<.001).
Cost results
Hospital charges were $14,586 for the intervention group and $18,450 for the control group, (p<0.066).

Synthesis of costs and benefits
Since the intervention emerged as the dominant strategy, costs and benefits were not combined.

Authors’ conclusions
By implementing the new protocol, hospital costs and length of stay for elective conventional colectomy were reduced without compromising patient care.

CRD COMMENTARY - Selection of comparators
The reason for the choice of the comparator is clear, as this was a widely used technique 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
It is not clear whether or not the data have been used selectively to prove a particular point. Also, the duration of follow-up was not reported. The conclusions of this study could be overturned by the results of the follow-up.

Validity of estimate of costs
No details of cost estimation were given and it is, therefore, difficult to determine whether any important items were omitted. Moreover, the price year was not stated, and only the length of hospital stay was analysed separately from the costs.

Other issues
The conclusions of this study should be viewed with caution. The generalisability of the results is uncertain.

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None stated.

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