
Systematic review of enhanced recovery programmes in colonic surgery

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CRD summary

This review compared fast track (FT) peri-operative care with traditional care for elective segmental colonic resections. The authors concluded that FT programmes appear to be safe and shorten hospital stay after elective colorectal surgery, but further research is required. Given the few studies identified and methodological shortcomings in those available, these conclusions were appropriate and are likely to be reliable.

Authors' objectives

To investigate the evidence for fast track (FT) peri-operative care compared with traditional care (TC) for elective segmental colonic resections.

Searching

MEDLINE, EMBASE and the Cochrane Library were searched up to December 2005 for papers reported in English, Dutch or German; the search terms were reported. The references of relevant papers were checked and experts in the field were contacted.

Study selection

Study designs of evaluations included in the review

Randomised controlled trials (RCTs) and controlled clinical trials (CCTs) with a prospective intervention were eligible for inclusion.

Specific interventions included in the review

Studies comparing a multimodal FT peri-operative care programme with TC were eligible for inclusion. The studies were required to report the use of at least 4 of 17 predefined elements to be defined as an FT programme. The FT interventions in the included studies ranged from having 4 to 12 elements (out of a possible 17). All studies reported using accelerated mobilisation and post-operative feeding as part of the intervention but other components varied between the studies.

Participants included in the review

Studies of patients undergoing elective segmental colonic resection for malignant or benign diseases were eligible for inclusion. The mean age of the participants ranged from 51 to 72 years in the FT group and from 42 to 74 years in the TC group.

Outcomes assessed in the review

Trials reporting the following outcomes were eligible for inclusion: American Society of Anaesthesiologists or Physiological and Operative Severity Score for the Enumeration of Mortality and Morbidity score, type of resection, primary hospital stay (PHS) or overall hospital stay (OHS), readmission rate, morbidity and mortality. PHS was defined as the number of days in hospital after surgery. OHS was defined as PHS plus any hospital readmissions within 30 days of surgery.

How were decisions on the relevance of primary studies made?

Three authors independently conducted the searches and selected the studies. Any disagreements were resolved through discussion.

Assessment of study quality

Study quality was assessed using a checklist developed by the Dutch Cochrane Collaboration. This appeared to include items on allocation concealment, blinding, similarity of the groups at baseline, whether a consecutive series of patients

was used, and the comparability of other treatments. Three authors independently assessed quality.

Data extraction

The relative risk (RR) and 95% confidence interval (CI) were estimated for dichotomous outcomes of interest, while the weighted mean difference (WMD) was estimated for continuous outcomes. The authors did not state how many reviewers performed the data extraction.

Methods of synthesis

How were the studies combined?

RCTs and CCTs were pooled in separate meta-analyses and an overall estimate was also obtained. A random-effects model was used where there was moderate heterogeneity, and a fixed-effect model where heterogeneity was low. Where pooling was not possible, the studies were reported in a narrative synthesis.

How were differences between studies investigated?

In addition to pooling RCTs and CCTs separately, statistical heterogeneity was investigated using the chi-squared and I-squared statistics.

Results of the review

Three RCTs and three CCTs were included (n=512).

A number of methodological limitations were identified in the included studies. None of the studies reported allocation concealment and none were blinded. Two of the CCTs used a retrospective control group and in one of these the control group was from a different hospital. It was noted that they were small trials and might have been underpowered to detect an effect.

PHS was statistically significantly shorter following FT care compared with TC (WMD -1.56 days, 95% CI: -2.61, -0.50; 5 studies). There was evidence of moderate heterogeneity (I-squared 53%). The studies for OHS could not be pooled because of missing data. The three studies that reported this outcome found a significantly shorter OHS in the FT group than in the TC group. There was no statistically significant difference between FT and TC in readmission rate (RR 1.17, 95% CI: 0.73, 1.86; 6 studies). In the pooling of CCTs the direction of the treatment effect was in favour of TC, whereas for the RCTs it was in favour of FT care. There was significantly less morbidity with FT care than with TC (RR 0.54, 95% CI: 0.42, 0.69; 6 studies). Mortality was not increased with FC (4 studies). Data on clinical outcome parameters (gut function, pulmonary function, pain, fatigue and quality of life) were also available in the paper.

Authors' conclusions

FT programmes appear to be safe and shorten hospital stay after elective colorectal surgery. However, owing to the limited evidence, further research is required to confirm the favourable results and their broader applicability in colonic surgery.

CRD commentary

The review addressed a clear research question using defined inclusion criteria. Appropriate sources were searched for studies, though the language restrictions might have led to the loss of relevant data; losses might also have occurred given that the authors did not report searching for unpublished studies. Appropriate measures were used to reduce error and bias in the study selection and quality assessment processes; it was unclear whether similar methods were used for the data extraction. The methodological quality of the included studies was assessed and their limitations discussed. The statistical pooling seemed appropriate: RCTs and CCTs were considered separately, which was appropriate given the risk of bias and possible overestimation of the treatment effect in CCTs. The authors' conclusions are appropriately cautious given the limitations of the evidence available.

Implications of the review for practice and research

Practice: The authors did not state specific implications for practice.

Research: The authors stated that multicentre RCTs are required, as well as further research to identify the critical elements of an FT programme.

Bibliographic details

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