Meta-analysis of the need for nasogastric or nasojejunal decompression after gastrectomy for gastric cancer

CRD summary
The authors concluded that routine decompression appeared to be unnecessary, as evidence on associations with earlier recovery of bowel function, shorter hospital stay, reduced anastomotic leakage and fewer pulmonary complications was lacking. This review was based on small number of small-sized studies with quality concerns. Methodological limitations in the review process mean that the reliability of the conclusions is unclear.

Authors' objectives
To determine whether nasogastric or nasojejunal decompression is needed after gastrectomy for gastric cancer.

Searching
MEDLINE, EMBASE and The Cochrane Library were searched (from January 1920 to November 2007) for relevant studies in any language. Search terms were reported. Reference lists of selected papers were scanned for additional articles of interest.

Study selection
Randomised controlled trials (RCTs) that compared patients with or without nasogastric or nasojejunal decompression following gastrectomy for gastric cancer were eligible for inclusion in the review. The average age range of included patients was 53 to 63 years; most had undergone total gastrectomy and received antibiotic prophylaxis. The included outcomes were: time to first flatus; time to starting oral diet; length of hospital stay (days); percentages of anastomotic leakage; pulmonary complications; morbidity; and mortality.

The authors stated neither how the papers were selected for the review nor how many reviewers performed the selection.

Assessment of study quality
Trial quality was assessed using the Jadad scale. Trials that scored more than 2 out of a possible 5 points were considered high quality. The authors did not state how many reviewers performed the validity assessment.

Data extraction
Data were extracted on the outcomes of interest as the odds ratio (OR) for dichotomous variables and the weighted mean difference (WMD) for continuous variables. Study authors were contacted for additional information, where necessary. Two independent reviewers performed the data extraction. Disagreements were resolved by discussion.

Methods of synthesis
Odds ratios and weighted mean differences and their 95% confidence intervals (CI) were pooled in a fixed-effect or random-effects meta-analysis, depending on the level of heterogeneity. Sensitivity analysis was conducted by removing trials from the analysis to identify sources of heterogeneity. Statistical heterogeneity was measured using the X^2 test and the I^2 statistic. Publication bias was assessed in a funnel plot.

Results of the review
Five RCTs (n=717) were included in the review. Sample sizes ranged from 74 to 237 patients. The mean Jadad score was 3; limitations arose from justification of the sample size, absence of allocation concealment and double-blinding, and the subjectivity of reporting return of gastrointestinal function.

The pooled analysis of three RCTs showed that time to flatus was shorter in the group without decompression (WMD 0.16, 95% CI -0.02 to 0.34 days, p=0.081). Pooled analysis of the same three RCTs showed that time to starting oral diet was shorter in the group without decompression (WMD 0.43, 95% CI 0.23 to 0.62 days, p<0.001). There was no
statistically significant heterogeneity in either analysis.

There were no significant differences between patients who did or did not receive decompression for the other outcomes assessed: anastomotic leakage \(p=0.610\); pulmonary complications \(p=0.161\); length of hospital stay \(p=0.153\); morbidity rates \(p=0.442\); and mortality rates \(p=0.650\). There was no significant heterogeneity in any of the analyses. Results for anastomotic leakage were similar when stratified for subtotal and total gastrectomy. There were no reported adverse events that related to tube insertion, pneumothorax and oesophageal perforation in any of the included studies. Sensitivity testing for outcomes deemed to be the most important (anastomotic leakage, pulmonary complications and morbidity) did not substantially change the original results.

The funnel plot did not show evidence of publication bias.

Authors' conclusions
Routine decompression appeared to be unnecessary, as evidence was lacking that nasogastric or nasojejunal decompression was associated with earlier recovery of bowel function, shorter hospital stay, reduced anastomotic leakage and fewer pulmonary complications after gastrectomy for gastric cancer.

CRD commentary
The review question was clear and supported by well-defined inclusion criteria for intervention, study design and participants. The search strategy included some relevant sources for published studies. However, it appeared that no specific attempts were made to locate unpublished material, so relevant studies may have been missed. Attempts were made to minimise language bias. There was no evidence of publication bias. An appropriate trial quality assessment tool was used and (despite all trials reaching the specified level for high quality) the authors drew attention to specific limitations in their discussion of results. The absence of reporting on how studies were selected and assessed for quality meant that potential for reviewer errors and biases could not be ruled out. Study details were reported, methods of synthesis were appropriate and heterogeneity was assessed. This review is based on a small number of small-sized studies with some quality concerns. This, together with concerns about the transparency of the review process, means that the extent to which the authors' conclusions are reliable is unclear.

Implications of the review for practice and research
Practice: The authors stated that routine decompression appeared to be unnecessary.
Research: The authors did not state any implications for research.

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