Systematic review of intraoperative colonic irrigation vs. manual decompression in obstructed left-sided colorectal emergencies
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CRD summary
The authors concluded that manual decompression was comparable to colonic irrigation for primary anastomosis in obstructed left-sided colorectal emergencies with no significant increase in mortality, leak or infection rates. The conclusions are not reliable given multiple limitations in the review processes and the small number of studies and participants reviewed.

Authors' objectives
To compare the safety of manual decompression and intraoperative colonic irrigation in obstructed left-sided colorectal emergencies.

Searching
MEDLINE, EMBASE and Cochrane Central Register of Controlled Trials (CENTRAL) were searched from 1980 to February 2007 for full paper articles in English-only publications. Search terms were reported. Reference lists of identified articles were handsearched.

Study selection
Randomised controlled trials (RCTs), prospective comparative and descriptive trials that evaluated intra-operative irrigation or manual decompression and primary anastomosis were eligible for inclusion. Only adult patients who underwent emergency surgery for obstructed left-sided colorectal lesions were considered. Primary outcomes included 30-day mortality, anastomotic leak rates and postoperative wound infection. Studies that focused on patients who underwent stenting were excluded, as were studies without clearly defined criteria for patient selection, study design and outcome measures.

Most patients had obstructed left-sided colorectal cancer. Characteristics of the patients studied were not fully reported. Outcomes considered included 30-day mortality rates, anastomotic leak rates and infection rates.

Two reviewers independently assessed studies for eligibility. Agreement between reviewers was reached before studies were included.

Assessment of study quality
Quality of the included studies was assessed according to the adequacy of: definition of participant eligibility criteria; prospective data collection; definition of outcome measures; and intention-to-treat analysis.

Two reviewers independently assessed study quality.

Data extraction
Data on the proportion of patients with outcome events (anastomotic leaks, mortality, wound infection) in colonic irrigation and manual decompression groups were extracted. Data were entered into a predefined data sheet.

The authors state neither how the data were extracted for the review nor how many reviewers performed the data extraction.

Methods of synthesis
Results from one RCT and one prospective comparative trial were summarised separately and presented using forest plots. Results from the prospective case-series studies were pooled (composite series) and grouped into intraoperative
irrigation and manual decompression groups. Pooled risk ratios (RRs) and 95% confidence intervals (CIs) were calculated.

**Results of the review**

Seven trials (n=449 patients) were included in the review: one RCT (n=49 patients); one prospective comparative trial (n=35 patients); and five prospective descriptive case series (n=365 patients: three studies assessed colonic irrigation, n=110 patients and two studies assessed manual decompression, n=255 patients). Results of the quality assessment were not reported.

**Anastomotic leak:**

There was no significant difference between colonic irrigation and manual decompression groups in the risk of anastomotic leakage in one RCT (RR 0.21, 95% CI 0.01 to 4.12; n=49 patients) and one prospective comparative study (RR 0.12, 95% CI 0.01 to 2.19; n=35 patients).

The pooled results from five case-series studies (composite series) showed that manual decompression was associated with a significantly lower risk of anastomotic leakage compared to colonic irrigation (RR 6.18, 95% CI 1.67 to 22.86; n=365 patients).

**Wound infection:**

There was no significant difference between colonic irrigation and manual decompression groups in the risk of wound infection in one RCT (RR 0.78, 95% CI 0.19 to 3.13; n=49 patients)

There was no significant difference between colonic irrigation and manual decompression groups in the risk of wound infection in the composite series (RR 1.58, 95% CI 0.85 to 2.93; n=365 patients)

**30-day mortality:**

There was no significant difference between colonic irrigation and manual decompression groups in the risk of mortality in one RCT (RR 0.52, 95% CI 0.05 to 5.38; n=49 patients) and one prospective comparative study (RR 2.55, 95% CI 0.11 to 58.6; n=35 patients).

The risk of mortality was significantly lower in the manual compression group in the composite series (RR 6.18, 95% CI 1.67 to 22.86; n=365 patients).

**Authors' conclusions**

Manual decompression was comparable to colonic irrigation for primary anastomosis in obstructed left-sided colorectal emergencies with no significant increase in mortality, leak or infection rates.

**CRD commentary**

The review question and exclusion criteria were clearly stated. Three databases were searched for English-only publications, which raised the possibility of language bias. No attempts were made to search for unpublished papers and only full papers were included, hence publication bias cannot be ruled out. Efforts were made to minimise reviewer error and bias in study selection and quality assessment, but not explicitly for data extraction. Quality assessment results were not reported. Statistical combination and presentation of results took into account differences in study designs. The conclusions appeared to reflect the evidence presented, but are not reliable given multiple limitations in the review processes and the small number of studies and participants reviewed.

**Implications of the review for practice and research**

**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated that further large multicentre RCTs of safety of colonic irrigation and manual decompression on anastomotic leak rates and mortality in obstructed left-sided colorectal emergencies were needed.
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