

# Laparoscopic lavage versus surgical resection for acute diverticulitis with generalised peritonitis: a systematic review and meta-analysis

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**Abstract** This systematic review and meta-analysis investigates current evidence on the therapeutic role of laparoscopic lavage in the management of diverticular peritonitis. A systematic review of the literature was performed on PubMed until June 2016, according to preferred reporting items for systematic reviews and meta-analyses guidelines. All randomised controlled trials comparing laparoscopic lavage with surgical resection, irrespective of anastomosis or stoma formation, were analysed. After assessment of titles and full text, 3 randomised trials

fulfilled the inclusion criteria. Overall the quality of evidence was low because of serious concerns regarding the risk of bias and imprecision. In the laparoscopic lavage group, there was a statistically significant higher rate of postoperative intra-abdominal abscess (RR 2.54, 95% CI 1.34–4.83), a lower rate of postoperative wound infection (RR 0.10, 95% CI 0.02–0.51), and a shorter length of postoperative hospital stay during index admission (WMD = -2.03, 95% CI -2.59 to -1.47). There were no statistically significant differences in terms of postoperative mortality at index admission or within 30 days from intervention in all Hinchey stages and in Hinchey stage III, postoperative mortality at 12 months, surgical reintervention at index admission or within 30–90 days from index intervention, stoma rate at 12 months, or adverse events within 90 days of any Clavien–Dindo grade. The surgical reintervention rate at 12 months from index intervention was significantly lower in the laparoscopic lavage group (RR 0.57, 95% CI 0.38–0.86), but these data included emergency reintervention and planned intervention (stoma reversal). This systematic review and meta-analysis did not demonstrate any significant difference between laparoscopic peritoneal lavage and traditional surgical resection in patients with peritonitis from perforated diverticular disease, in terms of postoperative mortality and early reoperation rate. Laparoscopic lavage was associated with a lower rate of stoma formation. However, the finding of a significantly higher rate of postoperative intra-abdominal abscess in patients who underwent laparoscopic lavage compared to those who underwent surgical resection is of concern. Since the aim of surgery in patients with peritonitis is to treat the sepsis, if one technique is associated with more postoperative abscesses, then the technique is ineffective. Even so, laparoscopic lavage does not appear fundamentally inferior to traditional surgical resection and

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