

Statement from the Regional HTA Centre of Region Västra Götaland, Sweden

Laparoscopic peritoneal lavage for patients with perforated diverticulitis

Question at issue:

Is laparoscopic surgery with peritoneal lavage a better method for treatment of perforated diverticulitis, Hinchey grade III (purulent peritonitis), than open surgery with resection, regarding redo surgery rates, morbidity, mortality, stoma rate, and quality of life?

PICO (Patient, Intervention, Comparison, Outcome)

- P = Adult patients with perforated diverticulitis (Hinchey grade III). Diagnosed by: fluid or free gas in CT, inflammatory process (colon) + laparoscopy, or clinical examination + laparoscopy.
I = Peritoneal lavage + drainage.
C = Peritoneal lavage + drainage + resection, with or without stoma.
O1 = Mortality.
O2 = Redo surgery rate/need of redo surgery.
Quality of life, need for colostomy/ileostomy, morbidity.

Summary of the health technology assessment:

Method and patient category:

Diverticulosis (outpocketings of the colon wall) can be complicated by inflammation and perforation of the colon, whereby peritonitis may develop in the more serious cases, due to accumulation of pus or intestinal contents in the peritoneal cavity. The prevalence is 4/100,000 people/year, corresponding to approximately 60 cases annually in Region Västra Götaland, Sweden. If left untreated, the condition is often fatal, and standard treatment is usually open surgery with removal of the affected part of the intestine, with placement of stoma, drainage, and medication with antibiotics. This procedure is associated with relatively high costs, long hospitalization, and need of several care episodes to restore intestinal continuity. The new method means that the patient instead is treated by laparoscopy with lavage and drainage of the peritoneal cavity.

Level of evidence:

Seven original articles fulfilling the PICO were identified. Two of these studies included some form of controls and were assessed using checklists and form, together with five case-series, the scientific basis for this report. In addition, two systematic reviews have been commented.

The current HTA-report concludes that:

- In two controlled studies, mortality was reported to zero in the laparoscopy group versus 0-10% (n.s.) for open surgery (very low scientific support, GRADE ⊕000)
- In two controlled studies, morbidity was reported to 11-26% in the laparoscopy group versus 23-42% (n.s.) for open surgery (very low scientific support, GRADE ⊕000)
- No studies with quality of life as outcome measure were identified.
- In two controlled studies, need of redo surgery was reported to 0-3% in the laparoscopy group, versus 0-8% (n.s.) for open surgery (very low scientific support, GRADE ⊕000) – excluding elective surgery.
- In two controlled studies, persistent stoma was reported to zero in the laparoscopy group, versus 0-40% (eight out of 20 patients) for open surgery (very low scientific support, GRADE ⊕000).
- Five case-series including 180 patients, reported low mortality (0-3%), and morbidity (4-20%), with 0-19% repeated surgeries, and no stoma.

Risks:

In the evaluated studies, laparoscopic treatment is reported to be associated with low risks. However, the external validity of the case-series is low, and data from larger controlled trials is absent.

Ethical aspects:

Considering the present level of knowledge, it seems ethically questionable to introduce a new treatment with promising, but not yet proven efficiency and cost-effectiveness, to routine practice. The new treatment may be less cost-, and resource-consuming than currently used standard treatments, why displacement effects are less probable.

Economical aspects

There is not enough data available for economic assessment. But if the differences that are reported in two controlled studies are correct, the costs might be reduced.

Concluding remarks

The scientific support is very low (GRADE ⊕000) for treatment of perforated diverticulitis (Hinchey grade III) with laparoscopy, peritoneal lavage, and drainage instead of current standard treatment with resection, stoma, and drainage, for the studied outcome measures. A Nordic randomized controlled trial is ongoing, and three additional European studies are planned. It is important that this method at present is only used in controlled trials in order to improve the knowledge base.

On behalf of the Regional HTA Centre of the Region Västra Götaland in Sweden

Göteborg, Sweden, 2010-02-24.

Christina Bergh, Professor, MD.

Head of Regional HTA Centre of Region Västra Götaland, Sweden.