Comparison of laparoscopy and laparotomy for endometrial cancer

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CRD summary
The authors concluded that laparoscopy had short-term advantages and seemingly equivalent long-term outcomes and in experienced hands might be a feasible alternative to laparotomy for endometrial cancer. The authors’ conclusions reflect the evidence presented but the lack of detail in relation to trial quality makes it difficult to evaluate their reliability.

Authors' objectives
To compare the safety and efficacy of laparoscopy and laparotomy on clinical outcomes among patients with endometrial cancer.

Searching
MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials (CENTRAL) and the Specialized Register of the Cochrane Gynaecological Cancer Review Group were searched between 1966 and June 2011. Search terms were reported. No language restrictions were applied. Reference lists of relevant trials were handsearched. Investigators of relevant ongoing trials were contacted.

Study selection
Randomised controlled trials (RCTs) that compared laparoscopic and laparotomy were eligible for inclusion. Primary outcomes were overall, disease-free and cancer-related survival. Secondary outcomes were efficacy results (operation time, blood loss, length of hospital stay, pelvic and para-aortic lymph node yield) and safety results (intraoperative complications and postoperative complications). Studies had to report at least one of these outcomes to be included.

The included studies were conducted in Australia, Turkey, Germany, Italy, USA and Netherlands. Mean patient ages ranged from 54.9 to 67 years. Mean body mass index of patients ranged from 24.4 to 32.1 kg/m². Seven out of eight trials included only patients with stage 1 disease.

The authors did not state how many reviewers assessed studies for inclusion.

Assessment of study quality
Study quality was assessed using a Jadad scale. Key criteria assessed included: randomisation, blinding and withdrawals or drop-outs. Trials with a Jadad score of at least 3 were considered high quality.

The authors did not state how many reviewers evaluated study quality and how disagreements were resolved.

Data extraction
Two authors independently extracted outcome data on an intention-to-treat basis using a data abstraction form; disagreements were resolved by discussion between two reviewers or involvement of a third reviewer.

Methods of synthesis
Pooled odds ratios (ORs) and standardised mean differences (SMDs) with 95% confidence intervals (CIs) were calculated using random-effects models (DerSimonian Laird method). Statistical heterogeneity was assessed using $\chi^2$ and $I^2$. Publication bias was assessed using funnel plots and by the Harbord test. Cumulative meta-analysis and sensitivity analysis were performed for intraoperative complications.

Results of the review
Eight RCTs were included (3,599 participants, range 52 to 2,516). Six trials had a Jadad score of 3 and single trials scored 1 and 2 points.

No significant differences were observed between laparoscopy and laparotomy groups in overall, disease-free or cancer-related survival (three RCTs).
Laparoscopy compared to laparotomy was associated with more intraoperative complications (OR 1.33, 95% CI 1.03 to 1.73; seven RCTs), fewer postoperative complications (OR 0.59, 95% CI 0.46 to 0.75; eight RCTs), longer operative time (SMD 0.80, 95% CI 0.46 to 1.15; four RCTs), lower blood loss (SMD -2.29, 95% CI -3.67 to -0.91; three RCTs) and shorter hospital stay (SMD -2.60, 95% CI -3.47 to -1.72; three RCTs).

No significant differences were observed between groups in pelvic or para-aortic lymph node yield (two RCTs).

There was evidence of heterogeneity for perioperative time (p=0.012), blood loss (p=0.000), para-aortic lymphadenectomy (p=0.037) and length of hospital stay (p=0.001). No evidence of publication bias was found.

**Authors’ conclusions**
Laparoscopy had short-term advantages and seemingly equivalent long-term outcomes and in experienced hands might be a feasible alternative to laparotomy for endometrial cancer.

**CRD commentary**
The review addressed a clearly defined question. Major electronic databases were searched without any language restrictions, which minimised the risk of publication bias. Data extraction was done in duplicate, which minimised risks of reviewer error and bias; it was unclear whether similar processes were used in study selection and quality assessment so the possibility of error and bias could not be excluded. Study quality was assessed using the Jadad scale which did not assess allocation concealment and risk of bias. The decision to combine study results using random-effects meta-analysis was appropriate because of evidence of heterogeneity for some outcomes.

The authors’ conclusions reflect the evidence presented but the lack of detail in relation to trial quality makes it difficult to evaluate their reliability.

**Implications of the review for practice and research**
The authors did not state any implications for practice or research.

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