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[Intervention Review]

Surgical approach to hysterectomy for benign gynaecological disease

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ABSTRACT

Background

The four approaches to hysterectomy for benign disease are abdominal hysterectomy (AH), vaginal hysterectomy (VH), laparoscopic hysterectomy (LH) and robotic-assisted hysterectomy (RH).

Objectives

To assess the effectiveness and safety of different surgical approaches to hysterectomy for women with benign gynaecological conditions.

Search methods

We searched the following databases (from inception to 14 August 2014) using the Ovid platform: Cochrane Central Register of Controlled Trials (CENTRAL); MEDLINE; EMBASE; Cumulative Index to Nursing and Allied Health Literature (CINAHL) and PsycINFO. We also searched relevant citation lists. We used both indexed and free-text terms.

Selection criteria

We included randomised controlled trials (RCTs) in which clinical outcomes were compared between one surgical approach to hysterectomy and another.

Data collection and analysis

At least two review authors independently selected trials, assessed risk of bias and performed data extraction. Our primary outcomes were return to normal activities, satisfaction, quality of life, intraoperative visceral injury and major long-term complications (i.e. fistula, pelvi-abdominal pain, urinary dysfunction, bowel dysfunction, pelvic floor condition and sexual dysfunction).

Main results

We included 47 studies with 5102 women. The evidence for most comparisons was of low or moderate quality. The main limitations were poor reporting and imprecision.

Vaginal hysterectomy (VH) versus abdominal hysterectomy (AH) (nine RCTs, 762 women)

Return to normal activities was shorter in the VH group (mean difference (MD) -9.5 days, 95% confidence interval (CI) -12.6 to -6.4, three RCTs, 176 women, $I^2 = 75%$, moderate quality evidence). There was no evidence of a difference between the groups for the other primary outcomes.

Laparoscopic hysterectomy (LH) versus AH (25 RCTs, 2983 women)

Return to normal activities was shorter in the LH group (MD -13.6 days, 95% CI -15.4 to -11.8; six RCTs, 520 women, $I^2 = 71%$, low quality evidence), but there were more urinary tract injuries in the LH group (odds ratio (OR) 2.4, 95% CI 1.2 to 4.8, 13 RCTs, 2140 women, $I^2 = 0%$, low quality evidence). There was no evidence of a difference between the groups for the other primary outcomes.

LH versus VH (16 RCTs, 1440 women)

There was no evidence of a difference between the groups for any primary outcomes.

Robotic-assisted hysterectomy (RH) versus LH (two RCTs, 152 women)

There was no evidence of a difference between the groups for any primary outcomes. Neither of the studies reported satisfaction rates or quality of life.

Overall, the number of adverse events was low in the included studies.

Authors' conclusions

Among women undergoing hysterectomy for benign disease, VH appears to be superior to LH and AH, as it is associated with faster return to normal activities. When technically feasible, VH should be performed in preference to AH because of more rapid recovery and fewer febrile episodes postoperatively. Where VH is not possible, LH has some advantages over AH (including more rapid recovery and fewer febrile episodes and wound or abdominal wall infections), but these are offset by a longer operating time. No advantages of LH over VH could be found; LH had a longer operation time, and total laparoscopic hysterectomy (TLH) had more urinary tract injuries. Of the three subcategories of LH, there are more RCT data for laparoscopic-assisted vaginal hysterectomy and LH than for TLH. Single-port laparoscopic hysterectomy and RH should either be abandoned or further evaluated since there is a lack of evidence of any benefit over conventional LH. Overall, the evidence in this review has to be interpreted with caution as adverse event rates were low, resulting in low power for these comparisons. The surgical approach to hysterectomy should be discussed and decided in the light of the relative benefits and hazards. These benefits and hazards seem to be dependent on surgical expertise and this may influence the decision. In conclusion, when VH is not feasible, LH may avoid the need for AH, but LH is associated with more urinary tract injuries. There is no evidence that RH is of benefit in this population. Preferably, the surgical approach to hysterectomy should be decided by the woman in discussion with her surgeon.

PLAIN LANGUAGE SUMMARY

Surgical approach to hysterectomy for benign gynaecological diseases

Review question

Cochrane authors evaluated which is the most effective and safe surgery for hysterectomy in women with benign gynaecological disease.

Background

Hysterectomy for benign gynaecological disease, mostly abnormal uterine bleeding, prolapse or uterine fibroids, is one of the most frequent gynaecological procedures (30% of women by the age of 60; 590,000 procedures annually in the USA). It can be performed through several approaches. Abdominal hysterectomy involves removal of the uterus through an incision in the lower abdomen. Vaginal hysterectomy involves removal of the uterus via the vagina, without an abdominal incision. Laparoscopic hysterectomy involves 'keyhole surgery' through small incisions in the abdomen. The uterus may be removed vaginally or, after morcellation (cutting it up), through one of the small incisions. There are various types of laparoscopic hysterectomy, depending on the extent of the surgery performed laparoscopically compared to that performed vaginally. More recently, laparoscopic hysterectomy has been performed robotically. In robotic surgery, the operation is done by a robot, while the (human) surgeon steers the robot from a chair in the corner of the operating room. It is important to be well informed about the relative benefits and harms of each approach to make best informed choices for each woman needing hysterectomy for a benign disease.

Study characteristics

We analysed 47 randomised controlled trials (RCTs). A RCT is a type of study in which the people being studied are randomly allocated one or other of the different treatments being investigated. This type of study is usually the best way to evaluate whether a treatment is truly effective, i.e. truly helps the patient. A systematic review systematically summarises the available RCTs on a subject.

A total of 5102 women participated. Comparisons were vaginal versus abdominal hysterectomy (nine trials, 762 women), laparoscopic versus abdominal hysterectomy (25 trials, 2983 women), laparoscopic versus vaginal hysterectomy (16 trials, 1440 women) and

laparoscopic versus robot-assisted hysterectomy (two trials, 152 women); in addition there were studies in which three comparisons were made (four trials, 410 women). There were also studies included in which different types of laparoscopic hysterectomies were compared, including single-port versus multi-port (three trials, 203 women), total laparoscopic hysterectomy versus laparoscopic-assisted vaginal hysterectomy (one trial, 101 women) and mini-laparoscopic versus conventional laparoscopic hysterectomy (one trial, 76 women). The main outcomes were return to normal activities, satisfaction, quality of life and surgical complications.

Key results

We found that vaginal hysterectomy resulted in a quicker return to normal activities than abdominal hysterectomy. There was no evidence of a difference between them for our other main outcomes.

Laparoscopic hysterectomy also resulted in a quicker return to normal activities than abdominal hysterectomy. However, laparoscopic hysterectomies had a greater risk of damaging the bladder or ureter. There was no evidence of a difference between laparoscopic and vaginal hysterectomy or between laparoscopic and robot-assisted hysterectomy for our main outcomes.

We conclude that vaginal hysterectomy should be performed whenever possible. Where vaginal hysterectomy is not possible, both a laparoscopic approach and abdominal hysterectomy have their pros and cons and these should be incorporated in the decision-making process.

The evidence is current to August 2014.

Quality of the evidence

The evidence for most comparisons was of low or moderate quality. The main limitations were poor reporting of study methods and wide confidence intervals around the estimate of effect.