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[Intervention Review]

Perioperative interventions in pelvic organ prolapse surgery

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ABSTRACT

Background

Pelvic organ prolapse (POP) is a common condition, with a significant proportion of women requiring surgical treatment. While the evidence supporting the surgical management of pelvic organ prolapse is well established, the evidence for perioperative interventions remains porous. The main goal of perioperative interventions is to reduce the rate of adverse events while improving women's outcomes following surgical intervention for prolapse.

Objectives

To compare the safety and effectiveness of a range of perioperative interventions versus other interventions or no intervention (control group) at the time of surgery for POP.

Search methods

We searched the Cochrane Incontinence Group Specialised Register, which contains trials identified from CENTRAL, MEDLINE, two major international clinical trials registers, and handsearching of journals and conference proceedings (searched 30 April 2024). We also contacted researchers in the field.

Selection criteria

We included randomised controlled trials (RCTs) of women undergoing surgical treatment for symptomatic POP that compared a perioperative intervention related to POP surgery versus no treatment or another intervention.

Data collection and analysis

We used standard methodological procedures recommended by Cochrane. Our primary outcomes were awareness of prolapse, repeat surgery for prolapse and objective failure at any site. We also measured adverse events and patient-reported outcomes. We used the GRADE approach to assess the certainty of the evidence.

Main results

This review includes 49 RCTs that compared 19 different intervention groups versus a control. The trials were conducted in 15 countries, and involved 5657 women. The certainty of the evidence ranged from low to moderate. Most interventions could not be blinded, thus introducing a risk of bias.

POP surgery with or without pelvic floor muscle training (PFMT): seven RCTs with 1032 women

There may be no clinically relevant difference in awareness of prolapse following POP surgery with or without PFMT (odds ratio (OR) 1.07, 95% confidence interval (CI) 0.61 to 1.87; 1 study, 305 women; low-certainty evidence). This suggests that if 20% of women are aware of prolapse after surgery without PFMT, 13% to 31% are likely to be aware after POP surgery with PFMT. Similarly, there may be no clinically relevant difference in repeat surgery for prolapse with or without PFMT (OR 0.86, 95% CI 0.23 to 3.26; 1 study, 316 women; low-certainty evidence). Additionally, there may be no clinically relevant difference in objective failure at any site with or without PFMT (OR 1.24, 95% CI 0.67 to 2.29; P = 0.49; 1 study, 307 women; low-certainty evidence). Finally, there may be no clinically relevant difference in patient-reported outcomes measures with or without PFMT, including Pelvic Floor Distress Inventory-20 (PFDI-20) scores (mean difference (MD) -4.11, 95% CI -8.97 to 0.76; I^2 = 0%; 3 studies, 512 women; low-certainty evidence), Urinary Distress Inventory (UDI) (MD -0.23, 95% CI -4.59 to 4.14; I^2 = 81%, 3 studies, 289 women; low-certainty evidence), Pelvic Organ Prolapse - Distress Inventory (POP-DI) (MD 0.00, 95% CI -1.22 to 1.22; I^2 = 0%; 2 studies, 143 women; low-certainty evidence) and Colorectal Anal Distress Inventory (CRADI) (MD -1.70, 95% CI -7.91 to 4.51; I^2 = 96%; 3 studies, 291 women; low-certainty evidence).

POP surgery with in-dwelling catheter (IDC) removal before 24 hours versus at 24 hours postoperatively: five RCTs with 478 women

There was probably no clinically relevant difference in urinary tract infections (UTIs) between women with IDC removal before 24 hours versus at 24 hours postoperatively (OR 0.63, 95% CI 0.37 to 1.08; I^2 = 61%; 4 studies, 381 women; moderate-certainty evidence). Similarly, there may be no clinically relevant difference in the number of women discharged with a catheter between the two groups (OR 0.80, 95% CI 0.22 to 2.95; 1 study, 64 women; low-certainty evidence). Furthermore, there may be no clinically relevant difference in the length of stay (days) between women with IDC removal before 24 hours versus at 24 hours postoperatively (MD 0.00, 95% CI -0.10 to 0.11; I^2 = 45%; 3 studies, 181 women; low-certainty evidence). Finally, there may be little to no difference in total catheter days between the two groups (MD 0.10, 95% CI -0.64 to 0.84; 2 studies, 124 women; low-certainty evidence).

POP surgery with IDC removal day at more than 24 hours postoperatively versus at 24 hours: two RCTs with 277 women

Women may be more likely to have a large increase in UTI risk if they had an IDC for longer than one day (OR 9.25, 95% CI 3.60 to 23.75; I^2 = 0%; 2 studies, 274 women; low-certainty evidence). This suggests that if 4% of women get a UTI with IDC removal at 24 hours, 12% to 47% will get a UTI with IDC removal at more than 24 hours following POP surgery. Similarly, having an IDC for longer than 24 hours probably increases the length of hospital stay (MD 1.18, 95% CI 0.92 to 1.44; 2 studies, 274 women; moderate-certainty evidence). Finally, having an IDC for longer than 24 hours may result in a large increase in total catheter days (MD 2.45, 95% CI 2.14 to 2.76; 1 study, 197 women; low-certainty evidence).

There were no clinically relevant differences between study groups in the few available results for the following interventions at the time of POP surgery: with or without bowel preparation, short-acting versus long-acting bupivacaine, with or without vasoconstrictors, with chlorhexadine 2% vaginal preparation versus other vaginal antiseptic solutions, with or without vaginal packing, with restricted versus liberal postoperative activity instructions, with or without vaginal oestrogen, and with or without cranberry supplementation.

Authors' conclusions

There remains a paucity of data on perioperative interventions in POP surgery. We were unable to establish a clinically meaningful reduction in adverse events or increase in patient satisfaction across most of the perioperative interventions. Women may be more likely to have a large increase in UTI risk if they have an IDC for longer than one day.

PLAIN LANGUAGE SUMMARY

What are the treatment options before, during and after pelvic organ prolapse surgery and do they work?

Key messages

- Women undergoing surgery for pelvic organ prolapse may be offered various treatments meant to reduce surgical complications, improve outcomes, or both.
- In general, there is limited evidence to strongly recommend any treatment.
- However, women's risk of developing a urinary tract infection may be 3 to 8 times greater if they have an in-dwelling catheter (to drain urine) for more than 24 hours after surgery.

What is pelvic organ prolapse?

Pelvic organ prolapse (POP) occurs when one or more pelvic organs (vagina, uterus, small intestine, bladder, rectum) bulge or protrude into the vagina. The support structures suspending the pelvic organs can weaken, leading to POP. This is usually caused by vaginal childbirth, ageing and obesity. POP can cause a range of issues for women, including leakage of urine or faeces, pressure symptoms and painful sex, seriously reducing quality of life.

When having surgery for POP, what additional treatments are available?

Surgery is one way to manage POP. Surgery aims to restore normal anatomy by suspending organs in their usual position. POP surgery can offer life-changing outcomes for women. But experts are divided about the usefulness and potential harms of various treatments

undertaken prior to, during or following prolapse surgery. These treatments aim to reduce the rate of possible complications or improve prolapse repair surgical outcomes.

What did we want to find out?

Complications can occur during surgery (e.g. damage to the bowel) and after (e.g. urinary tract infection (UTI)). We wanted to determine which treatments prior to, during or following POP surgery can reduce these complications.

POP surgery ideally repairs the prolapse and improves the symptoms. We also wanted to determine which treatments best help achieve this goal.

What did we do?

We searched for studies that compared prolapse surgery with and without treatments undertaken prior to, during or following surgery, for women 18 years of age and older. We compared and summarised the results of the studies and rated our confidence in the evidence, based on factors such as study methods and sizes.

What did we find?

We found 49 studies involving 5657 women, with studies undertaken in 16 countries. They evaluated 19 different types of treatment, which we grouped into 12 main comparisons for analysis. The studies did not measure many of the outcomes we were interested in. Overall, there was limited evidence to strongly recommend any treatment.

Pelvic floor muscle training (PFMT)

PFMT aims to strengthen the pelvic floor muscles and increase the support provided for any descending organs. There may be little to no difference between women who did PMFT prior to surgery and those who did not in their awareness of their prolapse: if 20% of women are aware of their prolapse after surgery without PFMT, 13% to 31% may be aware of it after surgery with PFMT. Similarly, there may be little or no difference in the need for repeat surgery, the likelihood of the prolapse recurring, and women's self-reported quality of life with or without PFMT.

In-dwelling catheter

Following surgery for POP, women are temporarily fitted with an in-dwelling catheter: a soft, flexible tube placed into the bladder to drain urine. Two studies compared the effects of removing the catheter at 24 hours versus later (1 study at 48 hours after surgery; 1 study at 4 days after). Women with a catheter in place for longer than 24 hours may have a large increase in the risk of having a UTI: if 4% of women get a UTI with catheter removal at 24 hours after surgery, 12% to 47% may get a UTI when catheter removal occurs more than 24 hours after surgery. Similarly, having a catheter for longer than 24 hours probably increases the length of hospital stay and may result in a large increase in the total number of days with a catheter. Neither study measured our primary outcomes.

Other treatment comparisons

The remaining 35 studies compared the effects of having prolapse surgery with or without a wide range of treatments, including:

- bowel preparation (emptying patients' bowels before surgery);
- short- versus long-acting pain relief medicine;
- vasoconstrictors (medicine that narrows blood vessels at the operating site);
- vaginal antiseptic treatments;
- cranberry supplements (for UTI prevention);
- vaginal oestrogen (used to optimise vaginal health before surgery).

In general, the studies found little to no difference in outcomes between the two groups for all these treatments.

Limitations of the evidence

There is limited strong evidence for POP treatments before, during or after surgery because most of the women, as well as the researchers and doctors, knew which treatment was being given. This might have affected how the results were reported or measured. Additionally, many studies did not measure outcomes we were interested in.

How current is this evidence?

This review updates our previous review. The evidence is current to April 2024.