

Targeted Update

Surgery for women with endometrioma prior to assisted reproductive technology

This is a **Targeted Update** of one of the comparisons of the Cochrane Review

Benschop L, Farquhar C, van der Poel N. Interventions for women with endometrioma prior to assisted reproductive technology. Cochrane Database of Systematic Reviews 2010, Issue 11. Art. No.: CD008571. DOI: 10.1002/14651858.CD008571.pub2.

Latest search was performed: **23 February 2015**

Results of the search, list of new references, details of updates to methods, study characteristics, risk of bias assessments, and details of data analyses can be found in the [Supplementary material](#).

This **Targeted Update** document was prepared by Hanna Bergman¹, Dennis T Kahn¹, and Karla Soares-Weiser². Data were taken from the previously published full review and from results of the updating process carried out by Hanna Bergman¹, Dennis T Kahn¹, and Artemisia Kakourou¹. The abstract was adapted from the previously published full review.

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What's a Targeted Update?

Targeted Updates are two to three-page documents that use the Cochrane Review as their foundation, but focus on updating only one or two important comparisons, and the seven most relevant outcomes. They include an updated Summary of Findings table and Abstract, and use Cochrane methodology. The full search results, risk of bias assessments, analyses, and references do not form part of the Targeted Update, but are available as supplementary information. Targeted Updates are intended for use by policy makers.

What's the context for this Targeted Update?

The topic for this Targeted update was identified by the Cochrane Gynaecology and Fertility Group editorial base as being in need of an update.

What's new?

This Targeted Update identified no new studies for pre-treatment surgery compared to expectant management. There is a lack of evidence in this area and further RCTs are required, especially for those measuring live birth and adverse outcomes.

Up-to-date as of February 2015.

The Targeted update '*GnRH agonists for women with endometrioma prior to assisted reproductive technology*' covers another treatment from the same Cochrane review.

It is uncertain whether pre-treatment aspiration surgery compared with expectant management affects miscarriage rate.

There is a lack of evidence for live birth; no studies reported on this outcome.

Background

Endometrioma is a cyst of endometriosis in the ovaries. As assisted reproductive technology (ART) cycles involve oocyte pickup from the ovaries, endometrioma may interfere with the outcome of ART.

Objectives

To determine the effectiveness and safety of surgery for improving reproductive outcomes among women with endometrioma, prior to undergoing ART cycles.

Search methods

Cochrane Menstrual Disorders and Subfertility Group Specialised Register of trials, CENTRAL (The Cochrane Library), EMBASE, MEDLINE, CINAHL, trial registers for ongoing and registered trials (February 2015), and trials registers (ClinicalTrials.gov and WHO ICTRP) for ongoing and registered trials (April 2015) were searched.

Selection criteria

Randomised controlled trials (RCTs) of any surgical treatment or expectant management for endometrioma prior to ART were included. The primary outcomes were live birth and adverse outcomes (such as miscarriage, ectopic pregnancy, multiple pregnancies, ovarian

hyperstimulation syndrome, or ovum pick up pain or infection).

Data collection and analysis

The trials were independently identified and assessed for risk of bias by two reviewers. Outcomes were expressed as Peto odds ratios (OR) with 95% confidence intervals (CI).

Main results

No new studies were identified in this Targeted Update, but two studies with 190 participants were included in the original review for this comparison.

One of the included studies compared cystectomy with expectant management up until the time of ART, but at oocyte retrieval endometrioma was aspirated. This may have had an effect on the receptivity of the endometrium and the implantation of the embryos. The other study compared aspiration with expectant management.

The two included trials were adequately randomised and all randomised participants were included in the analyses. However, there was a high risk of reporting bias, as both studies failed to report on the primary outcome live birth. The studies were not blinded but

outcomes are not likely to be affected by performance or detection bias.

The evidence on miscarriage rate following pre-treatment aspiration surgery compared with expectant management was of low quality and estimates are imprecise (OR 0.97, 95% CI 0.23 to 4.15). No trials reported on other adverse outcomes.

The evidence on clinical pregnancy following aspiration surgery (OR 1.29, 95% CI 0.45 to 3.64) as well as cystectomy surgery (OR 1.15, 95% CI 0.52 to 2.55) compared with expectant management was of low quality and estimates are imprecise.

Implications and conclusions

There is a lack of evidence on live birth with surgery compared with expectant management for women with endometrioma prior to ART. The evidence on miscarriage or clinical pregnancy following surgery compared with expectant management was downgraded due to imprecision (few, small studies, and very wide confidence intervals) and was consequently considered of low certainty, and estimates are imprecise. Further RCTs of pre-treatment surgery of endometrioma in women undergoing ART are required, especially studies measuring live birth rate and adverse outcomes.

Summary of Findings: Surgery for women with endometrioma prior to assisted reproductive technology

Patients and setting: Women with endometrioma undergoing assisted reproductive technology. Studies were set in Greece, Iran, Turkey, and the USA.

Comparison: Pre-treatment surgery (aspiration or cystectomy) versus expectant management.

Outcome	Plain language summary	Absolute effect		Relative effect (95% CI) N ^o of participants & studies	Certainty of the evidence (GRADE)
		Expectant management	Surgery		
Live birth	No studies reported on this outcome.				
Miscarriage - Aspiration vs expectant management	The evidence on miscarriage following aspiration compared with expectant management was of low quality, and estimates are imprecise.	100 per 1000	97 per 1000	OR 0.97 (0.23 to 4.15) Based on data from 81 participants in 1 study	⊕⊕○○ LOW ^{1,2}
		Difference 3 fewer per 1000 patients (95% CI: 75 fewer to 216 more per 1000 patients)			
Clinical pregnancy – Aspiration vs expectant management	The evidence on clinical pregnancy following aspiration compared with expectant management was of low quality, and estimates are imprecise.	200 per 1000	244 per 1000	OR 1.29 (0.45 to 3.64) Based on data from 81 participants in 1 study	⊕⊕○○ LOW ^{1,2}
		Difference: 44 more per 1000 patients (95% CI: 99 fewer to 276 more)			
Clinical pregnancy – Cystectomy ³ vs expectant management	The evidence on clinical pregnancy following cystectomy compared with expectant management was of low quality, and estimates are imprecise.	317 per 1000	348 per 1000	OR 1.15 (0.52 to 2.55) Based on data from 109 participants in 1 study	⊕⊕○○ LOW ^{1,2}
		Difference: 31 more per 1000 patients (95% CI: 122 fewer to 225 more per 1000 patients)			

CI= confidence interval; OR=Odds ratio

¹Design (-0): Studies were not blinded. However, blinding was most likely not possible as the intervention was surgery and the outcome is not likely to be affected by performance and detection bias.

²Imprecision (-2): One small study, and the 95% CI around the pooled estimate of effect includes both appreciable benefit and appreciable harm, as well as no effect.

³ The control group received expectant management up until ART, but at the time of oocyte retrieval during ART, endometrioma were aspirated. This may have had an effect on the receptivity of the endometrium and the implantation of the embryos.