Does surgery prior to Artificial Reproductive Treatment (ART) affect IVF/ICSI outcomes in women with endometrioma and/or deep infiltrating endometriosis (DIE)?
A result from meta-analysis and systematic review

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Introduction
The presence of endometriosis is known to be detrimental to fertility. Many patients with endometrioma and/or DIE may eventually require ART to achieve a pregnancy. Strategies on improving the reproductive outcome in women with endometrioma and/or DIE are limited to the use of GnRH agonist down regulation prior to the ART cycles (Sallam et al) or surgery. Recent ESHRE guidance has not been able to provide definitive guidance (ESHRE 2013). Nevertheless, surgical treatment prior to ART is widely practiced.

Review questions
Does women with endometrioma and/or DIE have poorer IVF/ICSI outcomes when compared to those without disease?
Does surgery prior to ART affect IVF/ICSI outcomes in women with endometrioma and/or DIE?
Does variation of surgical techniques influence IVF/ICSI outcomes?

Previous reviews
We searched all published and unpublished studies from 1980-2014. We included participants who had surgical management of endometrioma and/or DIE prior to ART. The quality of each paper was assessed and scored according to Newcastle-Ottawa Assessment scale. All suitable data were extracted and analysed using RevMan.

Methodology
We searched all published and unpublished studies from 1980-2014. We included participants who had surgical management of endometrioma and/or DIE prior to ART. The quality of each paper was assessed and scored according to Newcastle-Ottawa Assessment scale. All suitable data were extracted and analysed using RevMan.

Type of studies
Observational studies 14.
They have participants with endometrioma and/or DIE underwent IVF/ICSI.
They have at least one control group for comparison whether or not they have received surgical treatment prior to IVF/ICSI.

Type of participants
Participants must have had endometrioma and/or DIE diagnosed by laparoscopy or imaging tests such as ultrasound and magnetic resonance imaging. DIE is diagnosed using accepted classifications (Meuleman 2011, Haas 2011, Keckstein 2009).

Subgroup analysis
Subgroup analysis was included to compare those who have women with surgical intervention prior to IVF/ICSI compared to those who did not receive surgical intervention for endometrioma and DIE separately.

Impact of DIE on IVF/ICSI outcomes
In women with DIE, those who had surgical resection of the lesion has higher pregnancy rate (OR 1.2, 95% CI [1.1, 1.4]).

Effect of surgical treatment in women with endometrioma to IVF/ICSI outcomes
The study also showed no difference in number of mean oocytes retrieved whether or not women with DIE have coexisting endometrioma.

Conclusions
Women with endometrioma or DIE have similar IVF/ICSI outcomes compared to those without disease.
There is no evidence of benefit for surgical treatment of endometrioma before ART.
More studies are required to further elucidate if surgery prior to ART for women with DIE is beneficial, as surgery on endometrioma before ART may not improve reproductive outcomes compared to those without disease.

References