

Coexisting gynaecological conditions in the relationship between endometriosis and adverse pregnancy outcomes.

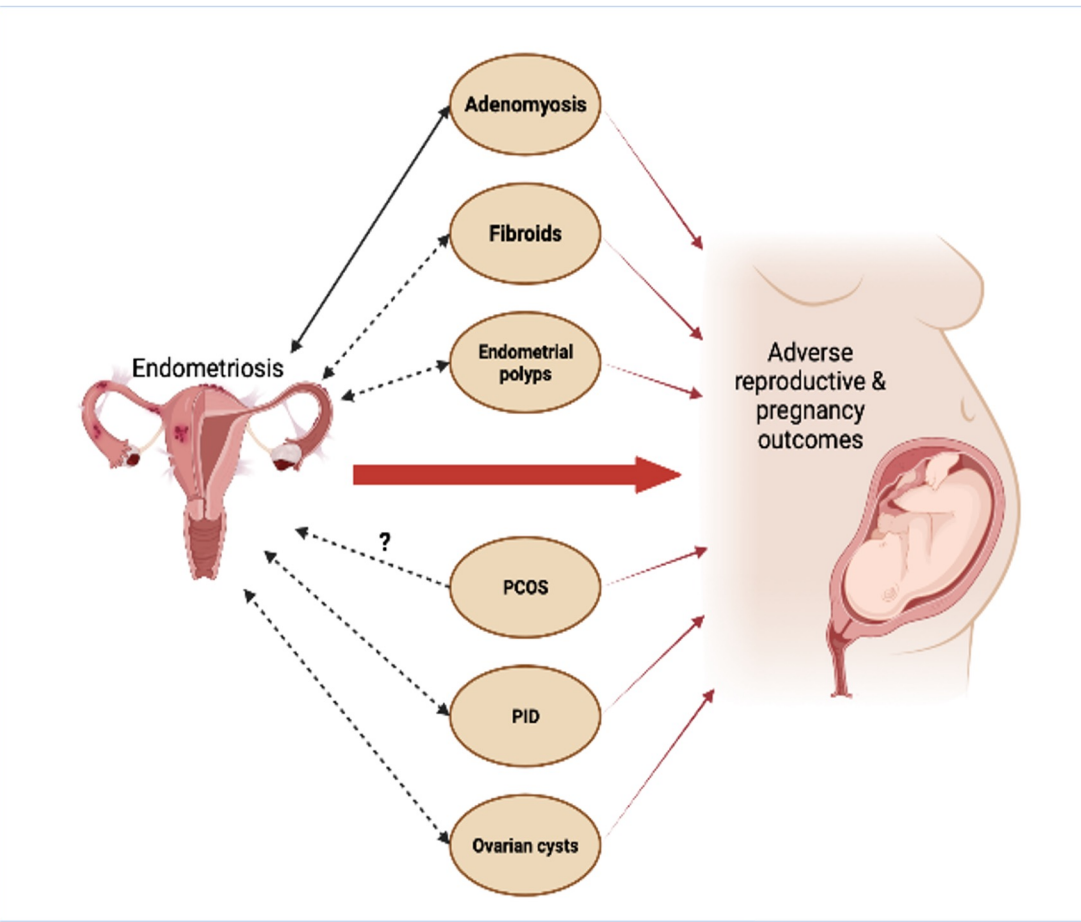
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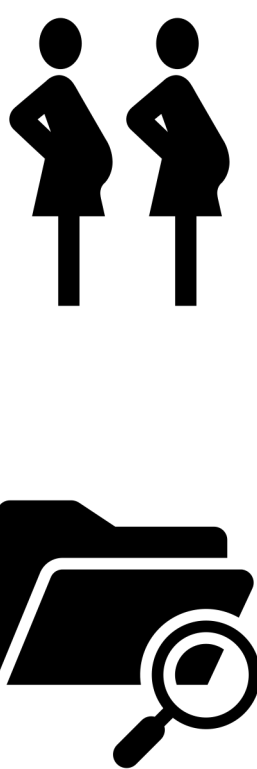
Introduction

- Endometriosis is a chronic and debilitating condition which can affect the entire reproductive life course of women and increases the risk of pregnancy complications.
- The presence of a coexisting gynaecological condition is hypothesised to worsen the relationship between endometriosis and pregnancy outcomes further.
- This review aimed to investigate if an increased risk exists with comorbidity, and if so, to quantify this risk.



Method

- Prospectively registered systematic review and meta-analysis (PROSPERO id: CRD42022307527).
- MEDLINE and Embase searched from inception to June 2022.
- Search terms included endometriosis and six coexisting benign gynaecological conditions; adenomyosis, fibroids, endometrial polyps (EPs), polycystic ovarian syndrome (PCOS), benign ovarian cysts (BOC) and pelvic inflammatory disease (PID).
- Grading of Recommendations, Assessment, Development and Evaluation (GRADE) tool used to assess the quality of evidence with the risk of bias in non-randomised studies of interventions (ROBINS-I) tool incorporated.
- 2 independent reviewers involved in article screening and data extraction.
- Meta-analysis performed on Review manager using the random effects model.
- Primary outcome: livebirth rate. Secondary outcomes: conception rate and miscarriage rate.



Results

- Pregnancy outcomes reported in 14 studies (coexisting adenomyosis n=11; EPs n=3).
- 12 (n=9 adenomyosis, n=3 EP) included in the quantitative synthesis (fig 1).
- Livebirth rate reported in 3 studies. Meta-analysis not possible due to significant heterogeneity.
- Women with endometriosis only had a significantly higher conception rate (OR 2.36, 95% CI 1.68-3.30, P<0.0001) compared to women with coexisting adenomyosis (fig 2).
- Women with endometriosis only had lower conception rates (OR 0.51, 95% CI 0.32-0.81, P=0.005) compared to infertile women with coexisting EPs who had also undergone hysteroscopic polypectomy (fig 3).
- There was no difference in the miscarriage rate between the two groups for either coexisting condition (adenomyosis: OR 0.62, 95% CI 0.28-1.41, P=0.26; EPs: OR 1.15, 95% CI 0.51-2.63, P=0.73) (fig 2,3).
- There were no pregnancy outcomes reported for coexisting fibroids, PCOS, BOC or PID.

Fig 4. GRADE evidence table

Outcome/n studies	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Certainty
Adenomyosis -Conception rate (n=9) -Miscarriage rate (n=4)	Very serious	Not serious	Not serious	serious	none	Very low
Endometrial polyps -Conception rate (n=3) -Miscarriage rate (n=3)	Very serious	Not serious	Not serious	Serious/not serious	none	Low-very low

Fig 1. PRISMA flowchart

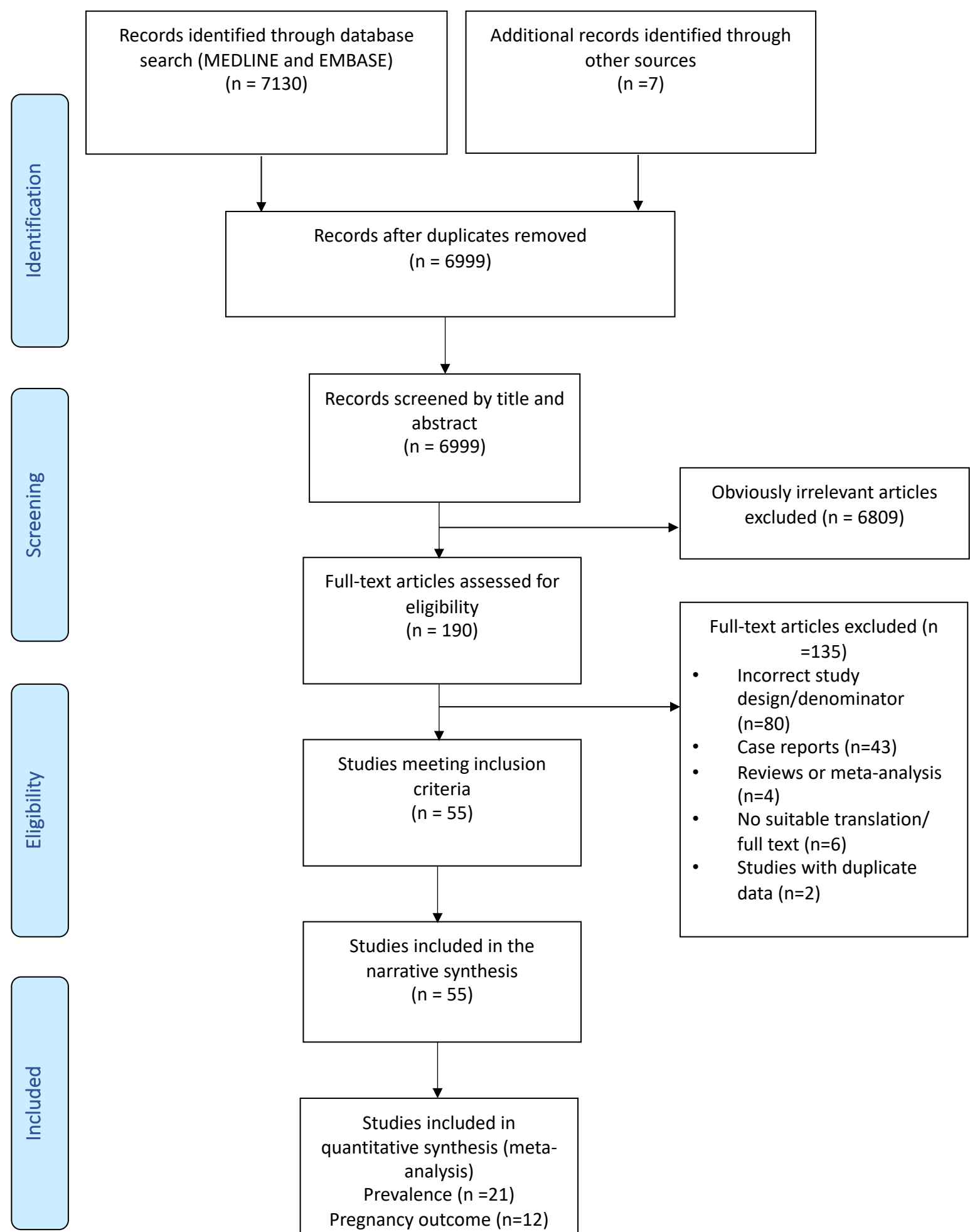


Fig 2. Forest plots for pregnancy outcomes comparing endometriosis only vs endometriosis & adenomyosis

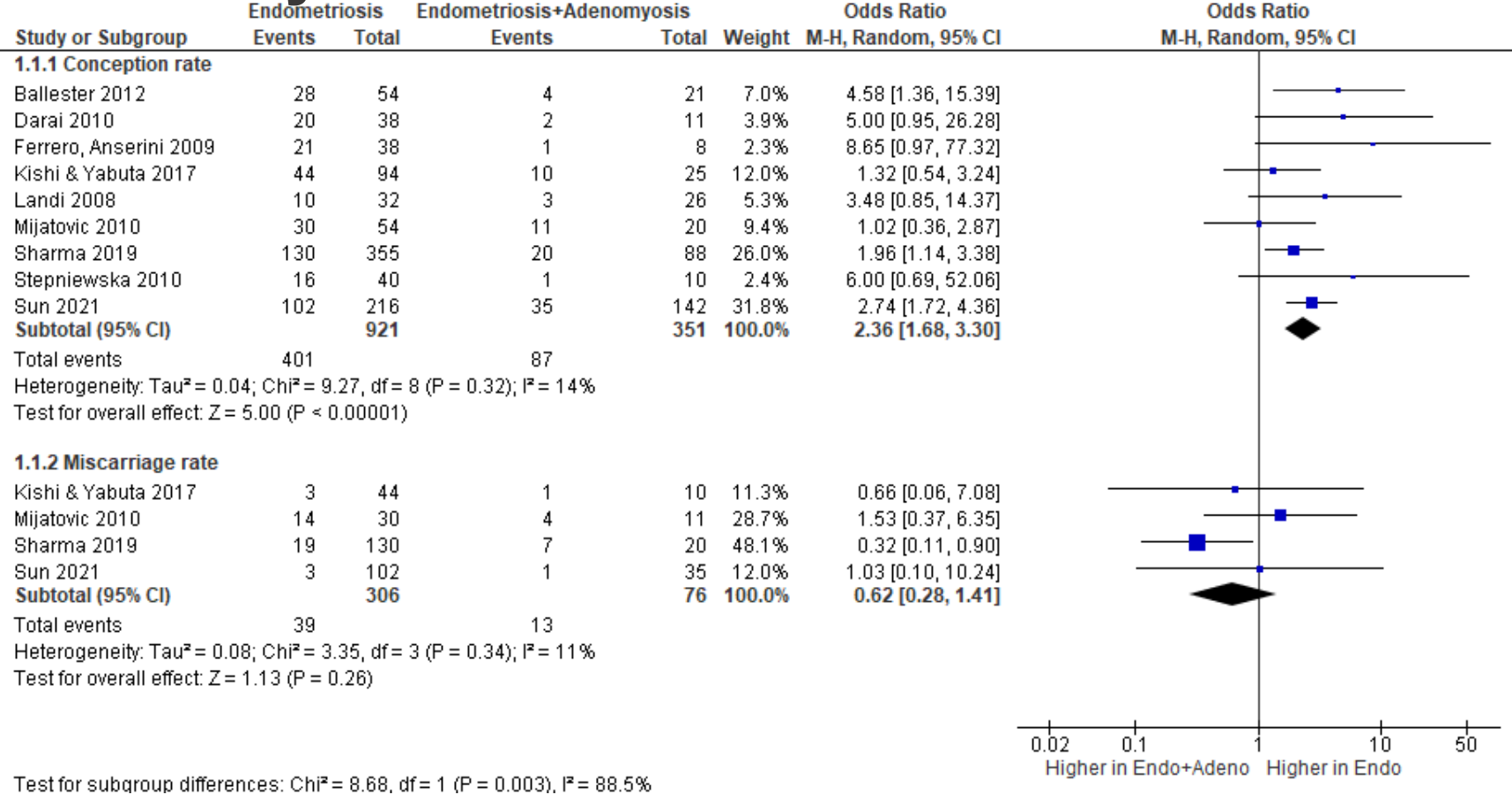
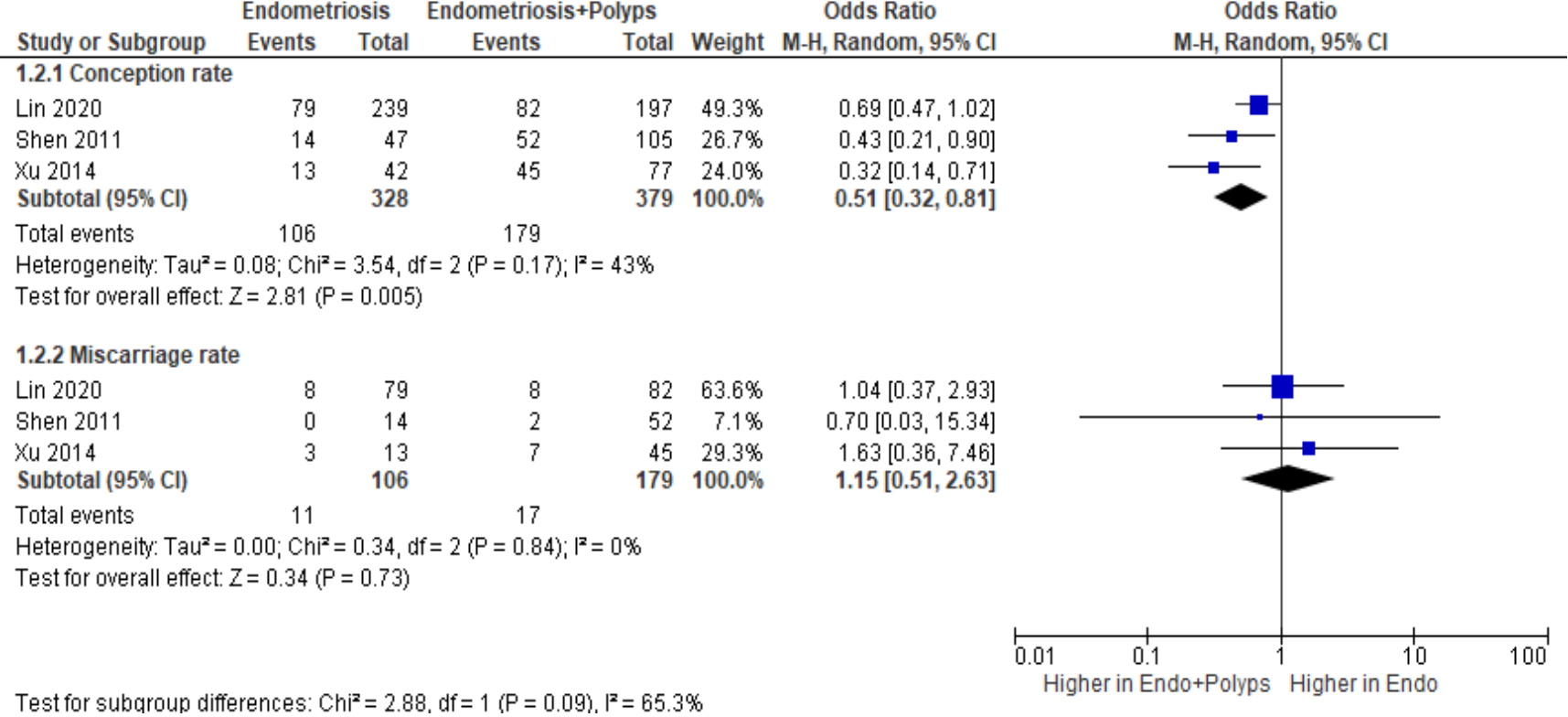


Fig 3. Forest plots for pregnancy outcomes comparing endometriosis only vs endometriosis & EPs



Conclusion

- Women with endometriosis and coexisting adenomyosis have lower conception rates compared to those with endometriosis only.
- Infertile women with endometriosis and coexisting EPs (excised) appear to have higher conception rates compared to those with endometriosis alone.
- This may be attributed to the removal of the mechanical interference caused by EPs which was likely the cause of their infertility in the first instance.
- The quality of evidence is low (fig 4) and the meta-analyses underpowered by study number and size.
- Future high-quality studies are required to make robust conclusions.

References:

Surrey, E. S. *et al.* (2018) 'Risk of Developing Comorbidities Among Women with Endometriosis: A Retrospective Matched Cohort Study', *Journal of women's health* (2002). J Womens Health (Larchmt), 27(9), pp. 1114–1123. doi: 10.1089/jwh.2017.6432.
Horton, J. *et al.* (2019) 'Reproductive, obstetric, and perinatal outcomes of women with adenomyosis and endometriosis: A systematic review and meta-analysis', *Human Reproduction Update*. Oxford University Press, 25(5), pp. 593–633. doi: 10.1093/humupd/dmz012.