

Endometrial scratch injury before intrauterine insemination: Is it time to re-evaluate its value? Evidence from a systematic review and meta-analysis of randomized controlled trials.

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Context: Systematic review and meta-analysis.

Objective: To assess the impact of endometrial scratch injury (ESI) on the outcomes of IUI-stimulated cycles.

Methods: The review was reported following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Two reviewers performed the literature search and independently judged the methodological quality of studies included in meta-analysis using the Cochrane Collaboration's tool for bias risk assessment. The body of evidence was assessed using GRADE methodology.

Patients: Infertile women undergoing one or more IUI-stimulated cycles.

Interventions: Randomized controlled trials (RCTs) were identified by searching electronic databases. We included RCTs comparing ESI (i.e. intervention group) during the course of IUI-stimulated cycle (C-ESI) or during the menstrual cycle preceding IUI-treatment (P-ESI) with controls (no endometrial scratch). The summary measures were reported as odds ratio (OR) with 95% confidence-interval (CI).

Main Outcome Measures: Clinical-pregnancy rate, ongoing-pregnancy rate, multiple-pregnancy rate, ectopic-pregnancy rate, miscarriage rate.

Results: Eight trials were included in the meta-analysis, embedding a total number of 1871 IUI cycles. ESI was associated with higher clinical-pregnancy rate (OR 2.27; $p < 0.00001$) and ongoing-pregnancy rate (OR 2.04 $p = 0.004$) in comparison to controls. No higher risk of multiple pregnancy (OR 1.09; $p = 0.88$), miscarriage (OR 0.80; $p = 0.60$) and ectopic pregnancy (OR 0.82; $p = 0.80$) was observed in patients receiving ESI. Subgroup analysis based on ESI timing showed higher clinical pregnancy rate (OR 2.57) and ongoing pregnancy rate (OR 2.27) in patients receiving C-ESI and no advantage in patients receiving P-ESI.

Conclusions: Available data suggest that ESI, performed once preferably during the follicular phase of the same cycle of IUI with the employ of flexible aspiration catheters, may improve clinical-pregnancy rate and ongoing-pregnancy rate in IUI cycles. ESI does not appear to increase the risk of multiple pregnancy, miscarriage and ectopic pregnancy.

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