Intrauterine administration of human chorionic gonadotropin (hCG) for subfertile women undergoing assisted reproduction

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Background
• Most women undergoing assisted reproduction treatment will reach the stage of embryo transfer (ET) but the proportion of embryos that implant following ET has remained small over the last 20 years.
• Human chorionic gonadotropin (hCG) is a hormone synthesised and released by the syncytiotrophoblast and has fundamental role in embryo implantation and early stages of pregnancy.
• Intrauterine administration of synthetic or natural hCG via an ET catheter during a mock procedure around the time of ET is a novel approach that has recently been suggested to improve the outcomes of assisted reproduction.
• Objective: to investigate whether the intrauterine administration of hCG around the time of ET improves the clinical outcomes in subfertile women undergoing assisted reproduction.

Methods
• Comprehensive literature search of the Cochrane Gynaecology and Fertility Group (CGF) Specialised Register, Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE, CINAHL, PsycINFO and registers of ongoing trials (from inception until 10th November 2015) in consultation with the Cochrane Gynaecology and Fertility Group (CGF) Trials Search Co-ordinator.
• All randomised controlled trials (RCTs) evaluating intrauterine administration of hCG around the time of ET were included in this review irrespective of language and country of origin.
• Two authors independently selected studies, assessed risk of bias and extracted data from studies and attempted to contact the authors where data were missing.
• The statistical analysis was performed using Review Manager (RevMan 5.3) in accordance with the Cochrane Handbook for Systematic Reviews of Interventions. Evidence quality was assessed using GRADE methods.

Results
• 12 RCTs investigating the effect of intrauterine administration of hCG for 4038 subfertile women undergoing assisted reproduction were included.
• 57% increase in live birth rate for women having cleavage stage ET with a hCG dose of ≥ 500 IU compared to no hCG. No effect for other subgroups.
• 41% increase in clinical pregnancy rate for women having cleavage stage ET with a hCG dose of ≥ 500 IU compared to no hCG. No effect for other subgroups.

Conclusion
• The pregnancy outcome for cleavage stage transfers using a hCG dose of ≥ 500 IU is promising.
• A definitive large clinical trial with live birth as the primary outcome is recommended.