The reproductive outcome following Atosiban administration around the time of embryo transfer: a systematic review and meta-analysis

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Background

• Poorer IVF outcomes have been reported consistently in the presence of uterine contractions at the time of embryo transfer (ET), but no specific treatment is currently used in clinical practice to counteract their effects.

• Oxytocin is a hormone produced by the hypothalamus and released by the posterior pituitary. Its main role involves generating uterine contractions during and after childbirth.

• Atosiban is the best known oxytocin antagonist and it is commonly used (licensed) to delay premature labour by halting uterine contractions.

• Objective: to investigate whether the use of Atosiban around the time of ET improves reproductive outcomes in subfertile women undergoing assisted reproduction.

Methods

• The review protocol was published under the Cochrane Gynaecology and Fertility Group (CGF) in October 2016 (Article Number: CD012375).

• The comprehensive literature search of the CGF Specialised Register, Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE, CINAHL, PsycINFO and registers of ongoing trials (from inception until 26th January 2017) was performed in consultation with the CGF Trials Search Co-ordinator.

• All randomised controlled trials (RCTs) evaluating administration of Atosiban around the time of ET were included in this review irrespective of language and country of origin.

• Review Manager (RevMan 5.3) was used for statistical analysis in accordance with the Cochrane Handbook for Systematic Reviews of Interventions.

Results

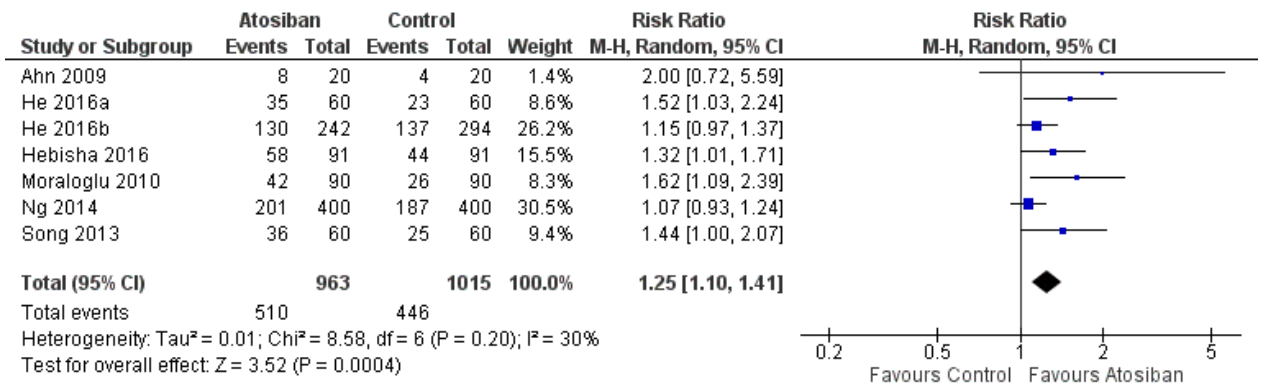
• Seven moderate quality RCTs met the inclusion criteria and were meta-analysed. There were 963 women in the intervention group and 1015 women in the control group.

Live birth

• One study reported similar live birth rates between the Atosiban and control groups (RR 1.046, 95% CI 0.874 to 1.253, n = 800, p = 0.612, low quality evidence).

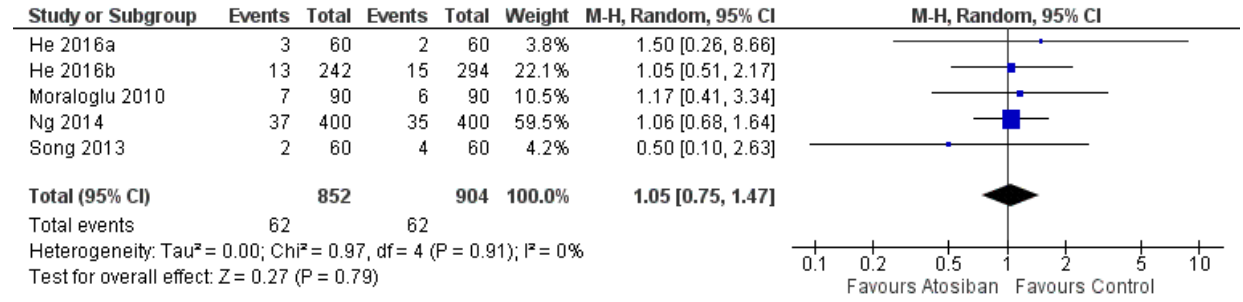
Clinical pregnancy

• Atosiban increased the clinical pregnancy rate (RR 1.25, 95% confidence interval (CI) 1.10 to 1.41, seven RCTs, n = 1978, I2 = 30%, p < 0.0004, moderate quality evidence).



Miscarriage

• Atosiban did not influence the miscarriage rate (RR 1.05, 95% CI 0.75 to 1.47, five RCTs, n = 1756, I2 = 0%, p = 0.79, moderate quality evidence).



• None of the RCTs reported differences in **adverse events** between the study groups.

Conclusion

• Administration of Atosiban around the time of embryo transfer increased the clinical pregnancy rate and did not influence the miscarriage rate, but there are insufficient data related to live birth. Future research should aim to establish the optimal regime and identify the patient groups that could benefit the most from Atosiban around embryo transfer. The primary outcome must be live birth.

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