

Pregnancy and neonatal outcomes following letrozole use in frozen–thawed single embryo transfer cycles

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STUDY QUESTION: Are pregnancy and neonatal outcomes following letrozole use comparable with natural and HRT cycles in patients undergoing single frozen–thawed embryo transfer (FET)?

SUMMARY ANSWER: Letrozole use was significantly associated with higher rates of clinical pregnancy, clinical pregnancy with fetal heart beat and live birth, and with a lower rate of miscarriage, compared with natural and HRT cycles.

WHAT IS KNOWN ALREADY: Letrozole is the most commonly used aromatase inhibitor for mild ovarian stimulation in ART. However, the effect of letrozole on pregnancy and neonatal outcomes in FET are not well known.

STUDY DESIGN SIZE, DURATION: A retrospective cohort study was conducted using data from the Japanese national ART registry between 2012 and 2013.

PARTICIPANTS/MATERIALS SETTING METHODS: A total of 110 722 single FET cycles with letrozole ($n = 2409$), natural ($n = 41 470$) or HRT cycles ($n = 66 843$) were included. The main outcomes were the rates of clinical pregnancy, clinical pregnancy with fetal heart beat, miscarriage and live birth. Adjusted odds ratios and relative risks (RRs) were calculated using a generalized estimating equation adjusting for correlations within clinics.

MAIN RESULTS AND THE ROLE OF CHANCE: The rates of clinical pregnancy, clinical pregnancy with fetal heart beat, and live birth were significantly higher, while the rate of miscarriage was significantly lower in the letrozole group compared with the natural and HRT groups. In blastocyst stage transfers, the adjusted RRs for clinical pregnancy with fetal heart beat of letrozole compared with natural and HRT cycles were 1.48 (95% CI: 1.41–1.55) and 1.62 (95% CI: 1.54–1.70), respectively. Similarly, the adjusted RRs of letrozole for miscarriage compared with natural and HRT cycles were 0.91 (95% CI: 0.88–0.93) and 0.84 (95% CI: 0.82–0.87), respectively. Neonatal outcomes were mostly similar in letrozole, natural and HRT cycles.

LIMITATIONS REASONS FOR CAUTION: Important limitations of this study included the lack of information concerning the reasons for selecting the specific FET method, parity, the number of previous ART failures, embryo quality and the dose and duration of letrozole intake.

WIDER IMPLICATIONS OF THE FINDINGS: These results suggest that letrozole use may improve clinical pregnancy, clinical pregnancy with fetal heart beat, and live births and reduce the risk of miscarriage in patients undergoing single FET cycles.

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