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Fresh versus frozen-thawed embryo transfer in IVF: A review of the perinatal outcomes

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Fresh embryo transfer (ET) may be associated with poorer perinatal outcomes due to altered implantation, decidualization, and placentation in pregnancies after a controlled ovarian stimulation. Lower risks of preterm birth, small for gestational age (SGA) and low birth weight (LBW) were found in pregnancies after frozen embryo transfer (FET) compared with singletons conceived after fresh ET.

Study question: In patients undergoing assisted reproduction techniques with FET, are there differences in perinatal outcomes versus those with fresh ET?

Methods: Systematic review and meta-analysis of cohorts studies, Case-control studies, RCT. An electronic literature search in Pubmed, MEDLINE and Cochrane Central Register of Controlled Trials was performed. Main outcomes: Preterm birth, LBW, Very low birth weight, Large for gestational age (LGA), SGA, Mean gestational age, Mean Birth weight, Perinatal mortality, Macrosomia, Preeclampsia, Placenta Accreta, Placenta Previa.

Results: A cohort of 151706 pregnancies conceived after FET versus 404263 with a fresh ET was evaluated. 29 studies met inclusion criteria. FET is associated

with a lower risk of preterm birth (OR = 0.88 95% CI 0.80-0.97), SGA (OR = 0.61 95% CI 0.58-0.64), LBWR (OR = 0.71 95% CI 0.67-0.76) and VLBW (OR = 0.75, 95% CI: 0.66-0.87). Singleton pregnancy after FET was associated with higher LGA rate (OR = 1.63, 95% CI: 1.57-1.69), Macrosomia rate (OR = 1.82, 95% CI: 1.74-1.89), Pregnancy-induced hypertension (OR: 1.82; 95% CI: 1.24-2.68), Preeclampsia (OR 1.32, 95% CI 1.07, 1.63) and Placenta accreta (OR: 3.51; 95% CI: 2.04-6.05)

Conclusion: Obstetric outcomes observed in pregnancies arising from ART may differ among fresh and FET cycles. When evaluating to perform a fresh embryo transfer or a freeze-all cycle, these differences observed in obstetric outcomes between fresh and FET should be taken into account. The adverse obstetric outcomes after FET observed in this study emphasize that the freeze-all policy should not be offered to all the patients. This study is useful to advise patients about the safety in the perinatal results of IVF with FET, and it should be offered to those with a clear indication of the benefits of such strategy.

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