

# 54: OBSTETRICAL OUTCOMES FOLLOWING FRESH IN VITRO FERTILIZATION/INTRACYTOPLASMIC SPERM INJECTION (IVF/ICSI) AND DIFFERENT METHODS OF ENDOMETRIAL PREPARATION FOR FROZEN EMBRYO TRANSFER

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## Background

Adverse obstetrical outcomes associated with IVF/ICSI are well established. As use of FET has become more widespread, evidence has emerged that FET is associated with adverse outcomes of its own, including a higher incidence of large-for-gestational age (LGA) infants and preeclampsia. Available studies have focused on embryo and patient factors, however none have accounted for the endometrial preparation protocol and resulting fluctuations in the hormonal environment at the time of implantation and in the first trimester.

## Objective

To examine the impact of different endometrial preparation protocols for FET on obstetrical outcomes.

## Design

Retrospective cohort study.

## Material and Methods

Eligible patients who underwent IVF/ICSI and FET treatment between January 1, 2014 and December 31, 2016 at an academic fertility clinic were included in our study. Research ethics board approval was obtained. All FET cycles used one of four methods of endometrial preparation - natural cycle(NC), hormone replacement using oral estradiol(HRT-O), HRT using vaginal estradiol(HRT-V), mild controlled ovarian stimulation(COS). Mean birthweight and gestational age at delivery were compared using Kruskal-Wallis test. Incidence of hypertensive disorders of pregnancy was compared using Fisher's exact test.

## Results

2223 cycles resulting in 576 live births were included. Mean birthweight (grams  $\pm$  standard deviation [SD]) was significantly different between groups - fresh IVF/ICSI 3216  $\pm$  602 (n=271), NC 3269  $\pm$  693 (n=134), HRT-O 3562  $\pm$  788 (n=29), HRT-V 3328  $\pm$  707 (n=137), and COS 2988  $\pm$  173 (n=5), P=0.006. Groups did not differ in terms of mean gestational age at delivery or incidence of hypertensive disorders of pregnancy.

## Conclusions

Method of endometrial preparation for embryo transfer is associated with differences in mean birthweight. Further analysis is required to determine whether these differences can be attributed to the hormonal milieu produced by different methods of endometrial preparation or other aspects of the embryo transfer cycle.

## Support

None