

O-117 Tuesday, October 9, 2018 11:15 AM

THE USE OF ATMOSPHERIC O₂ CONCENTRATION DURING EMBRYO CULTURE UNTIL DAY 3 OF DEVELOPMENT, DOES NOT AFFECT OBSTETRIC AND PERINATAL OUTCOMES.

P. Gamiz,^a M. Rendon,^b J. M. de los Santos,^a J. Remohi,^c A. Navarro,^d V. Serra,^c M. J. De Los Santos. ^a IVF Laboratory, IVI-RMA, Valencia, Spain; ^b Andrology, Marques Barcelona, Barcelona, Spain; ^c Medical, IVI-RMA, Valencia, Spain; ^d UAGI, Fundacion IVI, Valencia, Spain.

OBJECTIVE: It is widely accepted that low O₂ tension is necessary for optimization of blastocyst culture in IVF and pregnancy rates. However we previously published that when culturing embryos till day 3, pregnancy outcomes seem to be not affected. Long term effect on the use of atmospheric O₂ till day 3 has not been described yet. Therefore we wanted further investigate the impact of culturing embryos at high O₂ tension during in vitro culture in obstetric and perinatal outcomes.

DESIGN: Randomized clinical trial NCT 01532193 comparing embryo culture in a atmosphere 5.5% CO₂, 6% O₂, and 88.5% N₂, versus a dual gas system of 5.5% CO₂ in air including a total 1125 eligible cycles for the study, which were all randomly allocated to one of the two study groups.

MATERIALS AND METHODS: After considering the different embryo transfer cancellation reasons, 1013 patients reached embryo transfer. After the publication of the primary end points that were pregnancy rates. Obstetrics and neonatal outcomes were also examined. Data presented are mean \pm SD or numbers (%). The differences in outcomes between groups were tested by Student T-test for continuous variables and Fisher test for binomial variables. Risk Ratios with 95% CI were also calculated based on standard error over Poisson regression estimation.

RESULTS: Culturing embryos under atmospheric O₂ until day 3 of embryo development, did not impair live birth rates nor neonatal outcomes. No differences were found in terms of mean live births (1.32 \pm 0.494 vs. 1.26 \pm 0.438), birth weight (3196 \pm 654 vs. 3212 \pm 530), female/male ratio (41.23% vs. 38.78%), gestational age (GA) (38.9 \pm 2.94 vs. 39.1 \pm 2.25), percentage of preterm birth (1.75% vs. 2.04%), small for GA (7.02% vs. 8.84%), large for GA (14.04% vs. 12.24%), head circumference (34.1 \pm 1.61 vs. 34.2 \pm 1.85), apgar 10 (8.965 \pm 0.487 vs. 9.84 \pm 0.448). Neither maternal hypertension nor diabetes during pregnancy resulted to reach statistical differences between groups. FERTILITY & STERILITY_ e51

CONCLUSIONS: The use of high O₂ tension till day 3 of embryo development did not negatively affect the live birth rate nor the obstetric and perinatal outcomes in egg donation program.