

P01. Transferring a morula embryo can interfere in implantation of a blastocyst?

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Objective: To compare the results of in vitro fertilization (IVF)/intracytoplasmic sperm injection (ICSI) cycles in women with good prognosis, when they were electively transferred, a blastocyst stage embryo (group 1) versus a blastocyst stage and a morula stage embryo (group 2).

Methods: 35 transfers from January/2014 to January/2018 were included, these occurred in na assisted reproduction center. Selection criteria: Patients in first or second treatment for IVF/ICSI less than 35 years old, with body mass index <30kg/m² who used their own oocytes with normal ovarian reserve (baseline of antral follicles ≥11) and recipients without age restriction. Cases of severe male fator (spermatic concentration below 1million/ml) were excluded. The transfer was realized on fifth day of embryonic development. Luteal phase support was performed with micronized progesterone 600mg/day vaginally and estradiol 6mg/day orally, started the day after eggs collection. The receivers used 6mg/day of estradiol valerate orally, beginning on first day of menstrual cycle and 600mg/day of micronized progesterone, vaginally, for five days before embryo transfer. Were evaluated: mean age of women under 35 years who used their own oocytes and donors; pregnancy rate (βHCG positive); pregnancy loss rate and ongoing pregnancy rate (fetus alive at 12th week of pregnancy).

Results: Between group 1 (n=24) and 2 (n=11), mean age of women under 35 who used their own oocytes were 33(±1.6) and 31(±1.8) years old and for donors were 34(±0.5) and 29(±0) years old, for both groups, respectively. Pregnancy rate was 50% (12/24) for group 1 and 18% (02/11) for group 2 (p=0.02). Pregnancy loss rate was 17% (02/12) for group 1 and 50% (01/02) for group 2 (p=0.07). Ongoing pregnancy rate was 42% (10/24) for group 1 and 9% (01/11) for group 2 (p=0.01).

Conclusion: The analysis of our data shows that transfer another embryo with a slower development with a blastocyst, with the intention of increase pregnancy rates, can actually worsen the results. There is a worldwide trend about extending embryo culture by fifth or sixth day, then these data should be validated in a larger number of cases. The reason for an embryo with slower development impact on development of another embryo with normal development should be evaluated. We emphasize that the results were extracted from cases with good prognosis and can not be extrapolated to other cases.

P-02. Amino acids supplementation in culture of cumulus-oocyte complexes: does it matter?

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Objective: Oviduct and uterine fluids contain significant levels of free amino acids which play important roles in oocyte and embryo metabolism. In fact, studies on different mammalian species have revealed impaired embryo development when embryo culture takes place in media lacking amino acids. Despite the great interest that amino acid supplementation in embryo culture media has received, few studies have addressed the amino acids supplementation in COC or oocyte culture media. In this sense, several fertility centers choose media which are not supplemented with amino acids, commonly cheaper, for the first steps of IVF. So, does the culture of cumulus-oocyte complexes (COCs) after oocyte pick-up (OPU) in media supplemented with amino acids improve embryonic development and clinical outcomes?

Methods: Prospectively randomized study was performed on 1075 COCs retrieved from 89 cycles (87 patients) between September 2017 and December 2017. The rates of maturation, fertilization, good quality at cleavage stage, blastocyst formation, good quality blastocyst and implantation were analyzed. Patients under 40 (26 - 39) years old treated by ICSI with controlled ovarian stimulation were randomly divided into 2 groups. After OPU, COCs were cultured for 3 hours in HTF Medium (Irvine Scientific, USA) or Continuous Single Culture Medium (Irvine Scientific, USA) matching the conditions of No Supplementation (A) and Amino Acids Supplementation (B) respectively. Thereafter, only Continuous Single Culture Medium (Irvine Scientific, USA) was used for oocyte/embryo culture until day-6 in both groups.

Results: Groups A and B were similar regarding age (34.1±3.4 vs. 34.7±3.4; p=0.3820), BMI (24.2±4.0 vs. 24.0±4.3; p=0.8037), Anti-Müllerian Hormone levels (1.7±1.5 vs. 2.1±1.8; p=0.2738) and gonadotrophin dose during controlled ovarian stimulation (1648.6±691.9 vs. 1590.3±633.3; p=0.6794) respectively. Also, there were no statistical differences between groups A and B concerning number of follicles (16.6±11.9 vs. 16.3±10.3; p=0.8697), number of COCs (12.6±9.1 vs. 11.5±10.3; p=0.5460), maturation rate (81.3% vs. 83.1%; p=0.4734), fertilization rate (75.0% vs. 66.9%; p=0.3868), good quality at cleavage stage rate (61.2% vs. 60.5%; p=0.8689), blastocyst formation rate (61.9% vs. 57.6%; p=0.3074) and good quality blastocyst rate (36.2% vs. 33.3%; p=0.6503) respectively. Finally, 22 (50%) group A cycles and 20 (44.4%) group B cycles had fresh embryo transfers, resulting in similar implantation rates between the two groups (A=37.0% vs. B=40.6%; p=0.8062).

Conclusion: Several studies have argued that the exact composition of media is often not disclosed properly by the manufacturers. Therefore, the absence of amino acids in HTF Medium is questionable. Moreover, new data related to delivery rates and outcomes from frozen embryos need to be taken into account. Our study suggests that media without amino acids supplementation can be used harmlessly for COCs culture, which highlights the significant physiological role of cumulus cells preventing homeostatic stress in vitro. To our knowledge, this is the first study to assess the impact of amino acids supplementation in human COCs culture.