DAY OF EMBRYO VITRIFICATION DOES NOT CONTRIBUTE TO MITOTIC ERRORS OR ONGOING PREGNANCY RATES OF EMBRYOS FOLLOWING DAY 3 BIOPSY: A RETROSPECTIVE STUDY ON 166 ICSI CYCLES.

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Abstract Body

Objetive: The aim of the study was to compare survival rate after warming, developmental potential and aneuploidy rate of blastocysts.
Design: A retrospective observational study.
M&M: A total of 166 ICSI cycles between July-2012 and April-2014 undergoing vitrification Day 2 (VitD2) or Day 3 (VitD3). Group VitD2 comprised 81 cycles with 395 embryos were vitrified on day 2 (mean age: 39.6±3.2 years), whereas VitD3 group comprised 86 cycles with 481 analyzed embryos (mean age: 39.5±3.4 years). Embryos were vitrified using Cryotop® (KITAZATO). VitD2 embryos were warmed one day before biopsy while VitD3 embryos were warmed between 4-6 hours before biopsy. Biopsies were performed for aneuploidy screening on D3 using laser technology (OCTAX). Comprehensive chromosomal analysis was performed by arrays CGH (©BlueGenome). Chromosomally normal embryos were transferred in hormonal replaced cycle Statistical comparisons were performed using Fisher's exact test and t-Student test ($p<0.05$).
Results: Significantly more embryos were vitrified on D2 compared with D3 (90.5 [IC95%:88.21-92.79] *vs* 70.6 [IC95%:67.4-73.8]). No differences were observed with regards of percentage of embryos suitable for biopsy 68.5 [IC95%:63.9-73.1] of VitD2 group compared with 61.6 [IC95%: 57.2-65.9] of VitD3 group. Neither the percentage of aneuploidy embryos per biopsied embryo, or per fertilized oocyte were affected (80.3 [IC95%:75.9-84.6] *vs* 76.4 [IC95%:72.2-80.6]; 75.7 [IC95%:71.0-80.4] *vs* 87.2 [IC95%:83.8-90.5] respectively). Moreover, despite clinical pregnancy rates were significantly higher in VitD2 group compared with VitD3 (47.7 [IC95%:32.9-62.4] *vs* 63.0 [IC95%:49.1-76.9]) the ongoing pregnancy rates were similar between both groups (43.2[IC95%: 28.5-57.5] *vs* 43.5 [IC95%: 29.1-57.8])
Conclusion: It seems that vitrification of D2 embryos do not contribute on mitotic error rates after D3 biopsy. Since vitrification D3 embryos was equally safe as D2 and yields similar clinical outcome; in case of necessity and if D3 biopsies will be performed, vitrification on D2 can be applied since it allows better lab organization than D3.