COMPLETE ZONA PELLUCIDA REMOVAL DOES NOT AFFECT THE CLINICAL OUTCOME OF VITRIFIED-WARMED HUMAN BLASTOCYST TRANSFER

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Introduction: The relatively low implantation rates of embryos resulting from IVF have been attributed at least in part to impaired hatching. Total removal of the zona pellucida (ZP) may increase the implantation rate. In this study the clinical outcomes after complete ZP removal blastocyst transfer were analysed. Objective: To evaluate clinical outcome achieved after mechanical removal of the ZP from vitrified-warmed human blastocyst. Design: Prospective randomized controlled study. Methods: 476 embryos obtained from 431 patients, aged between 23 and 49 years (the average age was 34.2 and 33.7 years old - in control group) undergoing vitrified blastocyst transfer programme which were divided in two groups: with total ZP removal (230 blastocyst) before transfer and intact vitrified-warmed blastocyst transfer (246 blastocyst). After warming the experimental group of blastocysts undergone partial mechanical opening (70-90% of circumference of ZP) and then mechanical pipetting to ZP was removed. Statistical analysis were assessed by Student's and X 2 -tests. Results: Embryos without ZP implanted showed the similarly rate as a control embryos (43.5% vs. 48.6%). The clinical pregnancy was also similarly in the ZP–free group and the control group (35.9% vs. 39.6%). Progressive clinical pregnancy was similar in both groups (32.1% vs. 34.2%). All clinical outcome was not statistically different from the study and control groups, including subgroups of patient ≤36 years and >36 years old. Conclusions: I t was found that the complete mechanical removal of ZP in vitrified/thawed human blastocysts 1-3 hours prior to embryo transfer does not produce a visible effect on clinical outcomes. All the estimated indicators (clinical pregnancy rate, multiple pregnancies, embryos implanted, progressive clinical pregnancy rate, ectopic pregnancy rate, misbirth before 12 weeks) were similar in the total ZP-removal and control groups and did not have statistically significant differences. Supported by: This work was supported by Russian Science Foundation grant (project №14-50-00029).