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IMPROVEMENT IN REPRODUCTIVE OUTCOME THROUGH ARTIFICIAL OOCYTE ACTIVATION ON FERTILIZATION FAILURE CASES: A COHORT STUDY.

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OBJECTIVE: To demonstrate the effect of assisted oocyte activation (AOA) on reproductive outcomes after previous fertilization failure (FF) cycle associated to a male factor.

DESIGN: Retrospective Cohort Study.

MATERIALS AND METHODS: We described the outcome from 273 oocytes from 66 patients who underwent first attempt of ICSI without AOA, TABLE 1. Outcomes by insemination method ICSI IVF P-value High quality total blastulation rate y Mean (SD) (n[702 cycles) 28% (28) (n[381 cycles) 37% (32) <0.05 High quality total blastulation rate -Split group y Mean (SD) (n[94 cycles) 43% (29) (n[94 cycles) 49% (31) <0.05 First cycles only ICSI IVF P-value High quality total blastulation rate y Mean (SD) (n[365 cycles) 32% (29) (n[251 cycles) 43% (32) <0.05 High quality total blastulation rate Split-group y Mean (SD) (n[78 cycles) 44% (32) (n[78 cycles) 50% (33) <0.05 y(# day 5 High quality blast + # day 6 High quality blast)y (# 2pn - # trans on day 3) FERTILITY & STERILITY_ e221 getting either fertilization failure or low percentage of fertilization (<30%) and were compared with 620 oocytes from the same cohort of patients (84 cycles) in which a new attempt (48 with one cycle and 18 patients with two cycles) were performed with AOA. Study period included between April 2013 and September 2016. The injection of the oocytes by AOA was carried out by injecting the spermatozoa together with a previous phase of buffered media with Ica (1/3 of pipette in 40x magnification microscope). Later, they were kept for ten minutes in the incubator with fertilization media and Ica in a 37 _ C, 6%CO2 atmosphere. Embryo culture was carried out in standard incubator under culture conditions of 37_C, 6% CO2, 5% O2 atmosphere. Fertilization, pregnancy, implantation and abortion rates were analysed and compared in both groups by X2, t-Student and ANOVA tests when were needed.

RESULTS: Statistically significant differences were found in favor to AOA group vs. control according to normal fertilization rate (51.3% vs 15%), ongoing pregnancy rate (47.2% vs. 15.4%), implantation rate (30.5% vs.7.7%) as well as cancellation rate per cycle (20.9% vs 57.6%).

CONCLUSIONS: Our findings described in a remarkable population of patients that through the use of AOA, in those cases with either total failure or very low fertilization rate, is significantly enhanced the reproductive success. The improvement is a consequence of an increase in the fertilization rate and the number of viable embryos available for the cycle. Our results are demonstrating the utility of this technique after previous fertilization failure as an alternative to be offered to our patients.