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Abstract RNV PICSI

Title: Sperm selection with hyaluronic acid (PICSI) improves LBR in IVF treatments.

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Objective: The goal of any IVF cycle is to achieve a newborn (LB) at home. Most of the assisted reproduction techniques focused on achieving treatment success approach it at the oocyte and embryo stage. However, it has been demonstrated that sperm selection technique PICSI (physiologic intracytoplasmic sperm injection) avoids immature spermatozoa selection before microinjection. Sperm immaturity is linked, among other things, with aneuploidy incidence in the embryos. The purpose is to assess whether the use of PICSI technique improves LBR and the effect on embryo development (embryo morphokinetics).

Design: Intermediary analysis about LBR from an ongoing prospective, randomized and triple-blinded trial. In this project a total of 260 infertile couples undergoing oocyte donation were included, 125 in the PICSI group and 135 in the control.

Materials and Methods: PICSI technique can identify immature spermatozoa from a sperm sample to select only mature spermatozoa through HA (hyaluronic acid) receptors binding ability. A total of 1394 embryos were analyzed: 742 PICSI group vs. 652 Control. Spermatozoa were incubated in AH drops and were selected before microinjection in PICSI group samples. In both groups, zygotes were cultured in a time- lapse incubator (Embryoscope).

Results: The LBR rate was higher in the PICSI group vs. the Control: 69% and 64% respectively. Significant differences were found in morphokinetic parameters (in hours) between groups (sig< 0.05) when 3 analyses were performed. Embryos leading to LB cycle's results were: tPNa (8.92h vs. 9.31h), t2 (28.26h vs. 27.71h), t3 (38.47h vs. 37.67h), t9+ (75.67h vs. 78.38h), tSB (101.48h vs. 102.75h), PICSI group and Control, respectively. Differences were also found between the transferred embryos: tPB2 (3.38h vs. 3.94h), tPNa (8.20h vs. 9.09h), tPNf (23.17h vs. 23.79h). And a third, more specific analysis, was performed between transferred- LB embryos and transferred-non-LB: t5 (52.62h vs. 50.61h), t6 (55.45h vs. 53.50h), t7 (58.70h vs. 56.67h), PICSI group and Control, respectively.

Conclusions: The higher LBR in PICSI group in comparison with the Control encourages us to continue with this study of cohort embryos and to inquire in the differences found in embryo development after sperm selection with HA. The use of the PICSI technique could help to improve the LBR, especially in male infertility cases.

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