

SELECTION OF NON-APOPTOTIC SPERMATOZOA BY MAGNETIC ACTIVATED CELL SORTING IMPROVES PREGNANCY RATES IN INTRAUTERINE INSEMINATION. PRELIMINARY DATA

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INTRODUCTION: Several molecular features are involved in sperm function; one important process with a role in fertilization is sperm apoptosis, which is detectable by the externalization of the phosphatidylserine (PS). Annexin-V (AV) specifically binds to PS enabling the development of Magnetic activated cell sorting (MACS) as a novel sperm preparation technique that eliminates apoptotic spermatozoa (AS) based on this property. Our aim was to determine the clinical relevance of MACS removal of AS in the result of intrauterine insemination.

MATERIAL AND METHODS: Semen specimens (SS) (n=49) were prepared by swim up(SU) in the control group(CG). In the study group (SG) (n=49) SU was followed by incubation with AV-conjugated Micro Beads to retrieve AV-negative (non apoptotic sperm, NAS) to be employed, while AS remain retained under a magnetic field. TPM before and after SU, in AS and NAS, pregnancy rates (PR) and ongoing pregnancy rates (OPR) were compared by T-tests, and X2 tests. Data are expressed in means and percentages.

RESULTS: Significant statistically differences were not found in TPM in raw SS (85.45(95%CI66.43-104.47) vs.59.76 (95%CI51.57-67.97)) and after SU (8.14(95%CI7.28-9.00) vs.7.31 (95%CI6.32-8.30)) in SG in CG respectively. In SG, TPM in NAS was 6.5(95%CI5.85-7.19) and AS was 1.9(95%CI1.66-2.20). After MACS, TMP recovery rate was 84.13%. TMP inseminated in CG(after SU), with NAS in SG were comparable, PR was significantly increased in SG 26.53%(95%CI17.60-35.46)vs.6.12%(95%CI1.27-10.97) and also OPR 20.40%(95%CI12.25-28.55)vs.4.1%(95%CI0.09-8.11)(p=0.01 and 0.02, respectively).

CONCLUSIONS: In spite of the fact that there is not difference regarding inseminated TMP in both groups MACS technology provide a clear trend to better PR and OPR. Nevertheless, this improvement needs to be confirmed increasing the sample size.