

DIAGNOSTIC AND PREDICTIVE VALUE OF SPERM MRNA PROFILE

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Problem: There are limited data on the impact of influence molecular profile of spermatozoa on embryo quality. The spermatozoa carries 400 types of mRNA and it is not really known what are their functions. The embryo grows out of interaction of an oocyte and spermatozoa. Necessity of revealing predictors competence of gametes for revealing of an embryo with the maximum potential to implantation is conclusive. For more objective selection of the most perspective in respect of the further development of an embryo the morphological characteristics of gametes should be supplemented with the data about their molecular profile.

Purpose: We conducted the pilot research which purpose was to define the prognostic importance of studying of an expression sperm mRNA to predict development of a quality embryo for optimization the programs of assisted reproductive technologies.

Methods: Polymerase-Chain-reaction in real time was performed on ejaculate sperm samples of 56 infertile couples to determinate mRNA expression (PRM1 and PRM2) and fertilin-beta (ADAM2). The relationship between sperm mRNA expression and outcomes of infertility treatment by IVF/ICSI was investigated too.

Results: The expression of mRNA of fertilin-beta (ADAM2) while pregnancy persists (n=10) is higher than in miscarriage (n=13) and negative result (n=33), p=0,025 and p=0,032 respectively. For protamine mRNA expression was observed such correlation.

Conclusion: Investigation of fertilin-beta (ADAM2) and protamine (PRM1 and PRM2) mRNA expression in sperm in quality definition of spermatozoa allows to predict development of an embryo with high potential to implantation and can be used in clinical practice.