

9th Yazd International Congress and Student Award on Reproductive Medicine with 4th Congress of Reproductive Genetics

Poster Presentations

P-101

Association between mir-335-5p and mir-424-5p microRNA expression and semen quality of men with different infertility factors

Keshtkar Z, Ghasemian F, Mashayekhi F.

Department of Biology, Faculty of Sciences, University of Guilan, Rasht, Iran.

Email: z.keshtkar.76@gmail.com

Background: Approximately 20-30% of infertility cases are due to male infertility. MicroRNAs are small non-coding single stranded RNA molecules (22 nucleotides). Today, microRNAs have been used as noninvasive diagnostic biomarkers in male infertility.

Objective: The aim of this study is the evaluation of expression level of mir-424-5p and mir-335-5p in normozoospermia and their alterations in different groups of infertile men.

Materials and Methods: In this study, semen samples of couples referred to in vitro fertilisation center with male infertility factors were used. The samples were divided into different groups of asthenozoospermia, azoospermia, normozoospermia, oligozoospermia, teratozoospermia and oligoasthenoteratozoospermia. Part of the semen samples were considered for evaluation of *mir-424-5p* and *mir-335-5p* microRNA expression and *bcl2*, *caspase3* and *bax* genes using

Real Time-quantitative polymerase chain reaction. Also, a part of the same semen samples were used to assay sperm quality, including evaluation of sperm chromatin integrity, chromatin condensation and evaluation of sperm viability.

Results: The percentage of sperm viability and normal chromatin integrity in oligozoospermia men and the percentage of normal chromatin integrity in asthenozoospermia groups increase slightly. Instead, oligoasthenoteratozoospermia group has dramatic decrease in normal chromatin condensation (about 35%) and normal chromatin integrity (about 30%) compared to normal group (normozoospermia). Beside these exceptions other infertility factors shows modest decline than control. In this study, also changes in *mir-335-5p* and *mir-424-5p* microRNA expression was detected, and its association with decline sperm quality found.

Conclusion: In general, there is a correlation between sperm quality and the expression of semen biomarkers. So that, they can demonstrate the type of male infertility. Moreover, the different microRNA expression of normal and abnormal semen samples may enable the direct diagnosis of semen abnormalities.

Key words: Male infertility, Spermatogenesis, miRNA, Non-invasive, Spermatozoa.