

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

Poster Presentations

P-8

Effects of nicotinic acid and Folic acid on sperm motility, Viability and DNA integrity in oligospermia men during cryopreservation

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Background: Sperm freezing is an important technique for treating infertility and maintaining sperm, but because of the increased production of reactive oxygen species (ROS), threats such as chromatin damage and sperm DNA, threaten sperm motility and consequently reduce fertility. Antioxidants are important compounds to minimize the deleterious effects of freezing sperm and maintaining fertility potential.

Objective: The aim of this study was to investigate the effect of nicotinic acid and folic acid antioxidants on the sperm motility, survival and deoxyribonucleic acid of oligospermia men during cryopreservation.

Materials and Methods: For this purpose, 25 semen samples of Oligospermia men who referred to the

Fertility and Infertility Center of Shahid Beheshti Hospital in Isfahan province were randomly taken into sterile containers and after fluidization, sperm parameters including morphology, motility, and concentration, life and quality of chromatin and their DNA were Measure according to WHO criteria. Then, each sample was divided into 4 parts with freeze-dried medium for freezing: antioxidant-free (control group), 50 nM folic acid, 10 mM nicotinic acid, 50 nM folic acid + 10 mM nicotinic acid. After freezing, the samples were thawed and reexamined for sperm parameters.

Results: Our study showed that the process of freezing sperm by damaging the spermatozoa and cell membrane, resulted in decreased motility and competence of sperm to fertilize with oocytes and decrease the fertility potential of males ($p < 0.001$).

Conclusion: The use of folic acid and nicotinic acid antioxidants during sperm freezing reduces the harmful effects of free radicals created during the freezing process and helps preserve the fertility potential of Oligospermia men ($p < 0.001$).

Key words: Folic Acid, Nicotinic Acid, Deoxyribonucleic Acid, Oligospermia, Cryopreservation.