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Poster Presentations

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Is there any association between sperm telomere length and teratospermia?

Fattahi M¹, Maghsudlu M², Sheikha MH³.

1. Department of Medical Genetics, Shahid Sadoughi University of Medical Sciences, Yazd, Iran.

2. Department of Medical Genetics, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran.

3. Research and Clinical Center for Infertility, Shahid Sadoughi University of Medical Sciences, Yazd, Iran.

Email: sheikhha@ssu.ac.ir

Background: Causes of male infertility are abundant and multifactorial including anatomic, endocrine, metabolic and genetics problems. Numerical and morphological sperm defects are categorized in several groups, among them, teratospermia is characterized by the presence of spermatozoa with abnormal morphology over 85% in semen which are frequently incompetent in fertilization function. Genetic factors have long been considered in this field and one of the most recent issues is alteration in sperm telomeres, which are nucleoprotein structures protecting the end of eukaryotic chromosomes, and its contribution to male infertility. In the present study comparison of the sperm telomere length (STL) between teratospermia and normal semen specimen was on the agenda, since to our knowledge direct association between telomere length and teratospermia had not been evaluated previously.

Objective: To investigate if there is any differences

between telomere length of teratospermia and normal sperms in men of a similar age span.

Materials and Methods: The total of 60 semen specimens were obtained and categorized in teratospermia and normal samples from Arak Fertility Clinic, Markazi province, Iran. Teratospermia feature of samples was approved by specialists. After genomic DNA extraction, STL was surveyed by the use of quantitative real time PCR (qPCR) and data were analyzed with the help of statistical software.

Results: In order to statistically evaluate the relative telomere length in specimens, telomere to single copy gene (T/S) ratio was calculated for teratospermia and normal specimens. The results significantly indicate that relative telomere length in normal samples are nearly three times longer than this in teratospermia samples ($p < 0.05$).

Conclusion: Amongst various biological factors that affect semen quality, genetic alterations are known as considerable actors. Recently telomeres alterations have been in the spotlight. Several recent studies have reported the suggestive relationship between STL and male infertility. Our results, in line with other previous studies, indicate that the length of telomeres in teratospermia is shorter than that of normal sperm and this alteration might be one of the factors that contribute in incompetency of this kind of sperms. Further investigations on defining relevant molecular processes are highly recommended.

Key words: Telomere length, Teratospermia, Sperm, Male infertility.