



Evaluation of expression level of *BRDT* gene in testis tissues of infertile men referred to ROYAN Institute

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Introduction:

Spermiogenesis stage of spermatogenesis is including to many epigenetics events leading to sperm chromatin condensation. Through this condensation sperm chromatin undergoes drastic changes from nucleo-histone structure to nucleo-protamine structure, many factors are involved in this epigenetics process such as BRDT. In the post-meiotic phase of spermatogenesis, BRDT protein binds to hyperacetylated histones and aids to their general removal from DNA and their final replacement by protamine.

Aim:

According to the role of sperm chromatin condensation in fertility and the important role of *BRDT* gene in this condensation, the expression analysis of *BRDT* gene in testis tissues of infertile men was aimed in this study.

Material and methods:

The study included total of 30 infertile men who referred to ROYAN Institute. This samples distributed into 3 groups: obstructive azoospermia (positive control), complete maturation arrest at second spermatocyte/spermatid level and Sertoli cell syndrome (negative control). Samples of testicular tissues extracted by TESE/microTESE procedures performed in an attempt to obtain sperm, also for this respect, consent was obtained from participants. Quantitative expression data were obtained by real-time PCR technique using specific primer pair for *BRDT* gene.

Results:

Our study showed *BRDT* gene expression level was significantly higher in obstructive azoospermia group compared to complete maturation arrest and Sertoli cell only syndrome groups ($p \leq 0.05$).

Conclusion:

The finding in this study declared an association between low level of *BRDT* gene expression and spermatogenesis failure and male infertility.

Keywords:

Spermatogenesis, Epigenetics, *BRDT* gene.