

Study of sperm DNA damage rate in men with -308 polymorphism of *TNF- α* gene

Abstract

Background: The tumor necrosis factor alpha (*TNF- α*) gene codes a cell signaling protein (cytokine) which is involved in systemic inflammation and is one of the cytokines that make up the acute phase reaction. The association of this gene polymorphisms on male fertility status is controversial.

Objective: The aim of the study was to evaluate the effect of -308 polymorphism of *TNF- α* gene on some parameters of sperms and semen in Iranian infertile men.

Materials and Methods: 210 men with infertility (Asthenospermia, oligospermia, oligoasthenospermia) and 120 control participants we enrolled in this case-control study. We detected sperm DNA damage rate with sperm's DNA staining in men with -308 polymorphism of *TNF- α* gene.

Results: We observed a significant high frequency of A allele of this polymorphism among oligoasthenospermia men ($P=0.01$).we observed high-frequency sperm DNA damage rate ($P\leq 0.0001$) in sperm samples of men with AA genotype of *TNF- α* polymorphism .

Conclusion: As a result of stress oxidative increase we saw high sperm DNA damage in these patients

Keywords: Male infertility, *TNF- α* polymorphism, sperm DNA damage.