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## BSTR-35

### Oxidative Status Markers in the Diagnosis of Pathospermia

**T SHKURAT<sup>1</sup>, T SHERCHKOVA<sup>1</sup>, A ALEXSANDROVA<sup>1</sup>, K SAVIKINA<sup>2</sup>, A NEVEDOMSKAYA<sup>1</sup>, L GUTNIKOVA<sup>1</sup>, S LOMTEVA<sup>2</sup>, E MASHKINA<sup>1</sup>**

<sup>1</sup>*Southern Federal University, Russia,* <sup>2</sup>*Center for Human Reproduction and IVF, Russia*

#### **Background & Hypothesis:**

The main mechanism of male reproductive disorders is oxidative stress causing the generation of reactive oxygen species. The purpose of this study was to investigate the interactions between different allelic variants of the antioxidant defence system genes and male infertility.

#### **Methods:**

The materials for the study consisted of 88 semen samples. Allelic variants of catalase gene (*C1167T*; *rs769217*) and superoxide dismutase gene (*G7958A*; *rs4998557*) were identified by using allele-specific polymerase chain reaction.

#### **Results:**

There were no associations between mutant alleles and suppression of the spermatogenesis. But in a result of combined evaluation, the significant correlation between a combination of these alleles and suppression of the spermatogenesis was found (OR: 11.7; 95% CI, 1.34-35, 734; *P* = 0.0077). Investigations reveal the negative effects of reactive oxygen radicals on the quality of sperm, such as breaches on the flagellum and acrosome, lesion of the cytoplasmic membrane symmetry, and increased fragmentation of deoxyribonucleic acid.

#### **Discussion & Conclusion:**

Based on the literature and results of our study, we suggest that polymorphic variants of antioxidant defence systems can lead to insufficient function of superoxide dismutase and catalase, which in turn will lead to the overproduction of reactive oxygen species. This process can cause idiopathic male infertility. This study was carried on the equipment of Center for collective use "High Technology" and supported by the federal assignment No 6.703.2014/K from Russian Ministry of Science and Education.