BSTR-29

The *hOGG1 Ser326Cys* Polymorphism and Pathospermia

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Background & Hypothesis:
Increasing the intensity of free radical processes is seen as the leading cause of damaging the processes of spermatogenesis. 8-Hydroxyguanine is a mutagenic base lesion produced by reactive oxygen species. Oxidative stress generates 8-hydroxy-2'-deoxyguanine (8-oxodG), which can structurally modify DNA. *hOGG1* gene located on chromosome 3 encodes a DNA glycosylase/apurinic-apyrimidinic lyase that catalyses the excision and removal of 8-oxodG adducts. In the past years, the *hOGG1 Ser326Cys* polymorphism has attracted widespread attention.

Methods:
The study included 118 patients with various forms of pathospermia. Genomic DNA was isolated from spermatozoa. A DNA fragment containing part of the 5′ untranslated region and the full region of exon 1 was amplified with the primers: Forward, *5'-AGG AGG TGG AGG AAT TAA GT-3'* and reverse, *5'-GGC TTC TCA GGC TCA GTC A-3'*.

Results:
The analysis revealed that oligospermic men presented *hOGG1 326 S/S* genotypes less frequently than normospermic men (P <0.001), whereas the *hOGG1 326 C* allele were significantly increased in oligospermic men (P <0.005). Asthenospermic men *hOGG1 326 S / S* genotype increased more than that of men with normospermia. Men with reduced sperm mobility had reduced the frequency of the mutant allele *hOGG1 326 C* compared with normospermia (0.12 and 0.17, respectively).

Discussion & Conclusion:
Our results suggest that *hOGG1 Ser326Cys* polymorphism is associated with quantitative indicators of semen and not with sperm motility. This study was carried out using the equipments at the centre for collective use of high technology and supported by the federal assignment №6.703.2014/K from Russian Ministry of Science and Education.

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