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Glutathione S-transferase M1 and T1 polymorphism in men with idiopathic infertility

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ABSTRACT. Male infertility is a heterogeneous disorder, with various genetic and environmental factors that contribute to the impairment of spermatogenesis. Genetic causes are responsible for 60% of cases of idiopathic infertility. Polymorphisms of genes that encode detoxifying enzymes of phase II drug metabolism can modify their expression or function, affecting the biotransformation of toxic compounds to which the male reproductive system is exposed. GSTM1 and GSTT1 encode enzymes that are essential in the process of detoxification of endogenous and exogenous xenobiotics, facilitating their excretion. We examined GSTM1 and GSTT1 polymorphism in 233 men with idiopathic infertility seen at the Human Reproduction Service of the Federal University of Goiás from 2004-2006. Genotype GSTM1/T1 (null) was found in 30/105 normal individuals and in 64/128 abnormal individuals, indicating a significant association with idiopathic male infertility. The sperm alteration associated with greater GSTM1/T1 (null) frequency was decreased sperm count (oligozoospermy), which was more frequent in patients with GSTM1 (78.9%) as well as in those who had GSTT1 (73.7%), although the difference was not significant. Individuals polymorphic for genes GSTM1 and GSTT1 are susceptible to reduction in sperm quality and infertility, possibly because oligozoo-

spermic individuals have been affected by GST polymorphism.

Key words: GSTM1; GSTT1; Male infertility; Xenobiotics

