



Association between *RsaI* polymorphism in estrogen receptor β gene and male infertility

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ABSTRACT. The estrogen receptor β (*ER β*) gene plays an important role in the regulation of fertility in both males and females. The *RsaI* polymorphism in *ER β* is associated with male infertility in Caucasian patients. The aim of this study was to investigate the frequency of this polymorphism in the etiology of idiopathic male infertility and its correlation with smoking habits. We analyzed 287 Brazilian men, including 161 infertile and 126 fertile men, to evaluate the association between the *RsaI* polymorphism and male infertility. The *RsaI* variant alleles of all patients were determined by allele-specific polymerase chain reaction. Compared with a control group (normozoospermic men), the frequency of the *RsaI* AG-genotype was four times higher in infertile men ($P = 0.01$), five times higher in azoospermic men ($P = 0.02$), and seven times higher in teratozoospermic men ($P = 0.001$). The frequency of the *RsaI* AG-genotype was three times higher in infertile smokers ($P = 0.038$) compared with infertile nonsmokers, and nine times higher in azoospermic smokers ($P = 0.035$) compared with azoospermic nonsmokers. The *RsaI* polymorphism in *ER β* may have modulating effects on human spermatogenesis. There seems to be a

consistent association between *RsaI* polymorphism and smoking habits in infertile men.

Key words: *RsaI* polymorphism; *ERβ* gene; Male infertility; Smoking habits