



Analysis of the *GSTM1*-null polymorphism in patients with pterygium from Goiânia, Goiás Brazil

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ABSTRACT. The first reports about pterygium date back to Hippocrates, and this disease still threatens vision health around the world. Pterygium is a formation of fibrous tissue consisting of highly vascularized epithelial and subepithelial tissue that grows excessively and with an abnormal shape on the cornea. Many physical and biological factors are associated with the pathogenesis of pterygium, including heat, dust, and other particles in the atmosphere, and immunological mechanisms, mechanisms involving extracellular matrix reorganization, growth factors, cytokines, apoptosis, and angiogenesis. The aim of this study was to further investigate the association between polymorphisms in *GSTM1* and the formation of pterygium. We collected peripheral blood samples from 90 patients diagnosed with pterygium and from 23 subjects without the disease in order to perform molecular analysis of the *GSTM1* gene. Subjects with one or two copies of the *GSTM1* allele had a normal genotype while those without any copies of the allele had a null genotype. The chi-square test or the Fisher exact test was performed in order

to investigate possible associations between the molecular analysis and the risk of pterygium. A significant difference between the frequency of the *GSTM1*-null genotype in patient and control groups was identified. However, sub-group analysis found that the *GSTM1*-null genotype was statistically significant in men, but not in women, and in Caucasians, but not in Brown or Black groups. Furthermore, the *GSTM1*-null genotype was not related to any of the risk factors analyzed: cases in family, occupational exposure, smoking, hypertension, and diabetes.

Key words: GST; *GSTM1*; Pterygium; Polymorphism