

## **Association of the -511T/C polymorphism of the *IL-1 $\beta$* gene in patients with ocular toxoplasmosis from the northwestern region of São Paulo State**

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Considered the most common form of posterior uveitis, ocular toxoplasmosis is caused by the protozoan *Toxoplasma gondii*. The prevalence of the ocular form of *T. gondii* is approximately 27.0% of patients suffering from ocular diseases in the northwestern region of São Paulo State. Interleukin (IL)-1 $\beta$  is an important cytokine in the regulation of the expression of several genes involved in inflammatory processes. Animal studies have shown that this interleukin inhibits parasite growth in retinal endothelial cells. Moreover, the -511C/T polymorphism of the *IL-1 $\beta$*  gene is considered a protective factor against several infectious and parasitic diseases. This study investigated the -511C/T polymorphism of the *IL-1 $\beta$*  gene and compared its frequency in patients with and without ocular toxoplasmosis treated in a tertiary school hospital in the northwestern region of São Paulo State. Patients with positive serology for *T. gondii* were analyzed and grouped into "presumed toxoplasmic retinochoroiditis" (G1: n = 110) and "non-toxoplasmic retinochoroiditis" (G2: n = 104). A control group (G3) consisted of 108 patients with negative serology. Characterization of the -511 C/T polymorphism of the *IL-1 $\beta$*  gene was by PCR-RFLP. Statistical analyzes used the chi-square test and risk association was evaluated by Odds Ratio with a 95% confidence interval. Of the 312 patients in the study, 60 (54.5%) were male and 50 (45.5%) were female in G1, 50 (48%) of G2 were male and 54 (52.0%) were female and in G3, 55 (50.9%) were male and 53 (49.1%) were female. The mean age in G1 was 42.7 years (Range: 10-95), in G2 it was 56.9 years (Range: 19-88) and in G3 it was 35.2 years (Range: 18-80). There was a higher frequency of the TC genotype in G1 compared to G3 (p-value = 0.05; OR = 1.95; 95% CI: 0.99-3.91), and there was a lower frequency of the CC genotype in G1 compared to G2 (p-value = 0.02; OR = 0.30; 95% CI: 0.10-0.88). The results also showed a high frequency of the TT genotype in patients without *T. gondii* infection (G3) compared to G1 (p-value = 0.01; OR = 0.38; 95% CI = 0.17-

0.84). The results show that the -511C/T polymorphism of the *IL-1 $\beta$*  gene influenced the development of ocular toxoplasmosis in the patients in this study population.

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