TITLE: EVALUATION OF THE ASSOCIATION OF SINGLE NUCLEOTIDE POLYMORPHISMS OF GENES OF CYTOKINES TNFA AND IL-10 WITH SUSCEPTIBILITY TO PULMONARY TUBERCULOSIS.

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ABSTRACT:

Single nucleotide polymorphisms (SNPs) in the genes promoter regions of the cytokines TNF-α and IL-10 influence of the immune response and may be involved in resistance or susceptibility to tuberculosis. This study aimed to evaluate the association between SNPs of genes functional cytokine TNF-α (-308G/A) and IL-10 (-1082A/G) with resistance or susceptibility to active pulmonary tuberculosis in patients from the state of Pernambuco. Participated 282 individuals, divided into study groups according to clinical, radiological and laboratory tests. The case group consisted of 71 patients with active pulmonary tuberculosis, control 1: 53 patients with respiratory symptoms and latent tuberculosis, control 2: 57 patients with respiratory symptoms bearers of nonspecific lung infections and control 3 of 101 clinically healthy individuals, from of public health services. Were collected 5-10mL of sputum and 4.5 mL of peripheral blood, performed genomic DNA extraction and determination of genetic polymorphism using Real-time PCR. Analysis polymorphic comparative study groups showed that the mutant allele-1082G [p <0.0001, OR = 3.90 [2:45-6:59] and genotypes-1082GA [p <0.0001, OR = 2.90 [1:42-5.95] e-1082GG [p <0.0001, OR = 15:50 [5:18-1.62] was associated with the risk of developing pulmonary tuberculosis when the case group was compared with control 3. The genotype -308AG [p = 0.005, OR = 0.374 [0.17-0.76] showed a statistically significant association between the case group and control 3. There was no statistically significant difference in the association analysis of SNPs-308G/A and-1082A/G in the comparison between the case group and controls 1 and 2. Thus, mutant allele-1082G carriers, equivalent to increased protein levels of IL-10 may influence the immune response against *M. tuberculosis*. However, carriers of the-308GA genotype showed a protective factor for disease development. The study demonstrated that the SNPs have an important role in susceptibility to pulmonary tuberculosis in the Pernambuco/Brazil population studied.

Keywords: Pulmonary tuberculosis, Single nucleotide polymorphisms, TNF-α (-308G/A), IL-10 (-1082A/G)

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