

IL-10 -1082 A/G PROMOTER POLIMORPHISM IS ASSOCIATED WITH COPD

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Introduction. Interleukin-10 is an important immunoregulatory cytokine produced by many cell populations. It inhibits the production of proinflammatory cytokines by macrophages and thus has immunosuppressive effects on T cells, monocytes and macrophages. IL-10 has a protective effect against airway hyperresponsiveness and inflammation. It is a candidate gene in the pathophysiological mechanisms of inflammatory and autoimmune diseases. According to research, the most important functional polymorphism is the replacement of A → G in position -1082 (rs 1800896). This SNP localized in the binding site of the transcription factor, resulting in a change in IL-10 production and secretion.

Chronic obstructive pulmonary disease (COPD) is characterized by persistent airflow obstruction associated with chronic lung inflammatory process, which is caused by action of pathogenic particles and gases. Many of inflammatory cells, enzymes and mediators, that enhance the pathological changes and cause structural alteration, are involved in the formation of the inflammatory process.

The aim of our study was to determine the distribution of polymorphic gene variants IL10 in COPD patients.

Methods. The study included 82 patients with COPD. A comparison group consisted of 70 healthy individuals. Genomic DNA was isolated from peripheral blood lymphocytes using a standard method of phenol-chloroform extraction. Polymorphism genotyping -1082 A/G IL10 gene was conducted using qPCR. Statistical analysis was performed using Software GraphPad Instat™.

Results. Analysis of the frequency of alleles and genotypes distribution of polymorphism -1082 A / G gene IL10 in COPD patients showed that the allele A is found in 62.2% of patients and the allele G – in 37.8%. Frequencies of A/A, A/G, and G/G genotypes in COPD patients and control groups were 47.6%, 29.3%, 23.2%, and 65.2%, 30.4%, 4.3% respectively. Genotype G/G was associated with an increase in the risk of COPD (OR = 6.63, 95% CI = 1,47-29,95, p <0.05).

Conclusions. Results of the study showed that polymorphism -1082 A/G gene IL10 is associated with COPD and may be a marker of this disease.