

## SIGNIFICANCE OF CYTOKINE GENES IN HBV INFECTION

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### Relevance

In recent years, associations of gene polymorphisms in viral hepatitis and their influence on the course of this disease and its complications have been actively studied. At the same time, special significance is attached to the role of polymorphism of cytokine genes - important participants in the immune pathogenesis of viral hepatitis, which determine the nature of the interaction between the pathogen and the macroorganism, affect the chronicity of HBV infection and modify the rate of fibrogenesis in the liver.

**Purpose of the study.** To identify possible associations between allelic variants of the -511C/T gene of the IL-1b gene and -174 G/C of the IL-6 gene with the development of liver cirrhosis against the background of chronic HBV infection.

**Materials and research methods.** The distribution of alleles and genotypes of the above single nucleotide polymorphisms (SNPs) was analyzed in 67 patients with liver cirrhosis (LC) of HBV etiology. Statistical processing was carried out using the methods of variational parametric and nonparametric statistics. Significance level  $P < 0.05$  was taken as statistically significant changes.

**Research results.** When studying the distribution of alleles and genotypes -511C/T of the IL-1b gene, a high level of significance was noted for the CC genotype (OR=0.208;  $\chi^2=6.176$ ) with the lowest relative risk and was also noted for the allelic variant C of this gene, that undoubtedly suggests its protective contribution in this group of patients. At the same time, the T allele, with an extremely high level of relative risk and a high level of significance (OR=4.639;  $\chi^2=8.217$ ), indicates a clear predisposing contribution of this marker to the development of the studied pathology.

Studies to determine the relationship between SNP -174 G/C of the IL-6 gene and HBV-induced cirrhosis in this sample showed that a high level of significance was noted for the G

allele (OR=0.305;  $\chi^2=6.213$ ) with the lowest relative risk, same trend was also noted for the GG genotype with a relative risk of 0.290 and a high level of significance ( $\chi^2=5.224$ ), which indicates its protective contribution in this sample.

**Conclusions.** Associations of polymorphism of cytokine genes with resistance to chronic HBV infection with outcome in cirrhosis were revealed: allelic variant of CC of IL-1 $\beta$ -511C/T gene, GG of IL-6-174 G/C gene. Our studies indicate the prognostic significance of polymorphisms in HBV infection.