

**DIAGNOSTIC SIGNIFICANCE OF GENE POLYMORPHISM
DURING VIRAL HEPATITIS C**

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Abstract

The results obtained serve as the basis for a broader study of the contribution of genetic factors in the course of chronic viral hepatitis C, personalization of approaches to the treatment of patients. Based on the data obtained, the quality of diagnostics will be improved and criteria for reducing severe complications of the disease, cirrhosis and liver cancer, disability and mortality will be developed. Scientific research, analysis of the studied literature shows that with the development of chronic viral hepatitis, it is necessary to conduct genetic tests in order to make an accurate diagnosis of the course of the disease.

Keywords: chronic viral hepatitis, cytokines, genetic polymorphism.

The urgency of the problem. Viral hepatitis C continues to be the most important medical and social problem worldwide. This is due to high morbidity, especially among young people, the severity of complications and the degree of chronicity. Viral hepatitis C are the most common causes of hepatocellular carcinoma. Chronic viral hepatitis C is one of the socially significant infectious diseases.

The importance of this disease is determined by the high proportion of chronicity of acute hepatitis (up to 80% of cases), the ability of the hepatitis C virus to permanent mutations and the associated difficulties in creating a vaccine, and the high cost of treatment [5]. ,7,11]. In 2019, according to the World Health Organization (WHO), 71 million people worldwide are infected with the hepatitis C virus, and between 350,000 and 500,000 people die each year. Chronic viral hepatitis C is considered one of the leading causes of liver cirrhosis and the development of hepatocellular carcinoma. It is the clinical outcomes of hepatitis C that more often than other etiological factors lead to transplantation. According to various authors, there are 250-400 million people in the world who are chronically infected with the hepatitis C virus. The urgency of the problem is also associated with the possible consequences of chronic viral hepatitis. It is now proven that chronic HCV infection leads to progressive inflammation of the liver; in 20-30%, progression of liver cirrhosis is observed, followed by decompensation or the formation of hepatocellular carcinoma [3]. It has been established that in patients with hepatitis B, in 70-90% of cases, the development of hepatocellular carcinoma at stages up to the development of liver cirrhosis is possible [2].

The study of the mechanisms of the pathogenesis of chronic viral liver diseases against the background of the growth of this pathology in the world is an urgent task of hepatology. Liver damage in HCV infection is based on a combination of direct cytopathic and immune-mediated cell damage induced by the virus [1]. It is believed that a violation of the structure of the liver with the development of necrotic and fibrotic changes in it is associated with the level of production of pro-inflammatory cytokines - interleukin'6 and tumor necrosis factor alpha (TNF'a) [4]. It is known that TNF'α is involved in the processes of destruction and repair of tissues against the background of inflammation, and its elevated level is observed in viral and bacterial infections, oncological diseases, and many inflammatory reactions. During the period of exacerbation of diseases of the gastrointestinal tract, the concentration of TNFα in the blood serum exceeds the norm by an average of 10 times, and in some patients by 75–80

times [2,8]. The current treatment strategy is based on genotype and virologic response during treatment. Recently, a large number of studies have been devoted to determining the cytokine status in CHC. Thus, according to the authors [10], an increased level of pro-inflammatory cytokines in the blood serum corresponds to a high degree of inflammation and fibrotic changes in the liver tissue.

It is known that the hepatitis C virus is characterized by a pronounced genetic polymorphism. It has been established that during HCV infection, the virus is represented by a set of closely related genetic variants (quasi-variants). The genetic polymorphism of the hepatitis C virus in combination with single nucleotide polymorphism of genes obviously affects not only the course and outcomes of CHC, but also the different rate of formation of liver fibrosis [9,11]. As noted by V.T. Ivashkin, chronic damage to hepatocytes by the hepatitis C virus is a potentially precancerous process as a result of an imbalance between hepatocyte regeneration and inflammation [3,6].

The results of studies conducted over the past ten years show that an important contribution of genetic factors to the progressive development of chronic hepatitis C has been identified. At the same time, the characteristics of the course of the disease and the effectiveness of treatment depend on the genetic characteristics of patients. To date, a number of scientific studies are being carried out in the world to study the genetic basis of chronic viral hepatitis, to prevent complications by developing methods for early diagnosis and treatment. Scientific research and analysis of the studied literature show that with the development of chronic viral hepatitis, it is necessary to conduct genetic tests to make an accurate diagnosis of the course of the disease. Conducting research aimed at determining the origin and genetic relationship of dangerous complications of chronic viral hepatitis C (liver cirrhosis, hepatocellular carcinoma) is one of the urgent problems of hepatology.

CONCLUSION. The obtained results serve as the basis for a broader study of the contribution of genetic factors in the course of chronic viral hepatitis C, personalization of approaches to the treatment of patients. Based on the data obtained, the quality of diagnostics will be improved and criteria for reducing severe complications of the disease, cirrhosis and liver cancer, disability and mortality will be developed. Scientific research, analysis of the studied literature shows that with the development of chronic viral hepatitis, it is necessary to conduct genetic tests in order to make an accurate diagnosis of the course of the disease.

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