

(60% of patients), hypertension-lysis syndrome (30% of patients), vestibulo-atactic syndrome (30% of patients), focal symptoms in the form of a central pair - or tetraparesis (7% of patients) Bulbar syndrome (5% of patients). According to the MRI of the brain, the following changes were observed in patients - unaltered size of the ventricles, indirect signs of intracranial hypertension: «empty Turkish saddle», dilation of the amygdala in the occipital opening, flattening of the back pole of the sclera, optic fibers, subarachnoid perioptic expansions, intraocular protrusions of the optic nerve. Cerebral pseudo tumor syndrome, which is diagnosed in two subjects, in the case of neuroborreliosis in the adult population is described as a single case.

There are suggestions for immune responses, low activity inflammation, and direct infectious damage to arachnoid outgrowths, which ultimately results in impaired liquor absorption with this complication.

**Conclusions:** The variety of clinical manifestations of the disease makes timely diagnosis and, consequently, treatment difficult. In order to timely diagnose late complications in borreliosis, it is recommended to carry out advanced clinical neurological, laboratory, and paraclinical examination of patients. Early detection, timely diagnosis and treatment of neuroborreliosis prevent the development of neurological lesions of the central nervous system. Given the significant percentage of severe lesions of the nervous system, studies of chronic stages of Lyme disease with signs of neuroborreliosis deserve special attention.

### **HCV: FEATURES AND INSIDIOUSNESS**

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**Introduction.** Hepatitis C virus (HCV) is an RNA-containing virus belonging to the Flaviviridae family of the Hepacivirus genus, six genotypes and more than eighty subtypes have been identified. Geographical prevalence of HCV genotypes: in the countries of North America and Europe - genotypes 1a, 1b; Africa - 4; Japan - 1b, 2a, 2b; in Hong Kong - 6. Genotype 1b has a general distribution, 1a is called the "Western genotype", 2a - the "Eastern genotype".

HCV is a blood-borne virus that is most commonly contracted through blood contact, unsafe injection and medical practices, unscreened blood transfusion, injection drug use, and sexual intercourse involving blood contact. The highest rates of HCV infection are in economically developed countries. More than 10% of the entire population is infected with HCV worldwide. The virus can cause both acute (20-40% of all cases of acute hepatitis) and chronic hepatitis (about 30-50% of cases), which can be mild or lead to severe lifelong illness, ending in 10-15% of cases with the development liver fibrosis, cirrhosis and (or) hepatocellular carcinoma. The total number of people infected with chronic hepatitis C in the world is about 158 million people, while about 1.5 million new infections occur annually. An estimated 3.2 million children and adolescents have chronic hepatitis C. WHO estimates that approximately 290 000 people died from hepatitis C in 2019, mainly as a result of cirrhosis of the liver and hepatocellular carcinoma (primary liver cancer); about 2.3 million people (6.2%) of the estimated 37.7 million people living with HIV have serologic evidence of current or past HCV infection. Chronic liver disease is one of the leading causes of morbidity and mortality among people living with HIV.

**Materials and methods.** Analysis of modern scientific research and literary sources in the field of virology, medical microbiology, pathophysiology and infectious diseases.

**Results and their discussion.** The hepatitis C virus has numerous interactions with the immune system, causing a wide range of diseases of presumably autoimmune origin, such as mixed cryoglobulinemia, glomerulonephritis, arthritis, thyroiditis, and skin lesions. On the other hand, a large number of autoantibodies are observed during the development of hepatitis C. Of particular interest are hepatic-renal microsomal antibodies, the appearance of which indicates that treatment with interferons is risky. These antibodies in chronic hepatitis C and autoimmune hepatitis react to various antigens.

Hepatitis C-associated antibodies are more heterogeneous than autoimmune hepatitis in that they can distinguish between either structural or linear auto-epitopes on cytochrome P450IID6 (which has a significant similarity to the herpes simplex virus type I (IE175) protein), in addition, they are able to react with other microsomal proteins. The morphological feature of hepatitis C in children is the greater severity of cirrhotic changes in comparison with chronic hepatitis of a different etiology. Histochemical signs of cirrhosis in CHB were detected in 8.9%, in CHD — 49.9%, and in CHC in 73%. Unusual changes were found in CHC: complete discompensation of the parenchyma due to different-sized zones and septa, as well as intense, inflammatory infiltration. According to the volume of the necrotic component and the aggressiveness of

the infiltrate in liver biopsies, two types of chronic active hepatitis C can be distinguished: moderate and high activity (69%).

The study of the pathogenesis of hepatitis C deserves special attention. HCV is the virus that has the highest potential for chronicity. The incidence of HCV-induced chronic liver pathology is 10 times higher than with HBV. The persistence of HCV - the "gentle killer" virus - is prolonged for decades as a slow, "lazy" infection with a threatening ending. There are several potential mechanisms for virus evasion from immune surveillance. The HCV life cycle lacks template and intermediate DNA. In chronic HCV, unlike chronic HBV, integrative forms do not initially occur. The ability to inhibit IFN in HCV is significantly less - this is one of the reasons for the lack of effectiveness of the treatment of HCV in comparison with HBV. An important mechanism of virus persistence is its variability with the formation of mutant strains that "evade" immune surveillance. The variability of HCV is permanent, the most labile surface antigens (short segment E2/NS1) are the main target of the immune attack. Hypervariability with a very high mutation rate is characteristic of genotype 1b (in 61% of patients in Ukraine).

Chronic HCV is characterized by: inapparent, slowly progressive course and a high frequency of chronicity (in 70-80% of patients); about 15% of those infected with HCV have spontaneous recovery; in 25% of patients, the disease has an asymptomatic course with a normal level of aminotransferases and minor histological changes; 20% of patients develop cirrhosis within 10-20 years. The main feature of HCV infection is the ability for long-term persistence in the body and a significant number of extrahepatic manifestations of the disease. For the development of cirrhosis of the liver, the following factors are important: age (it progresses faster in the older, slower in the young); alcoholism (alcohol is a factor in the transformation of chronic HCV into cirrhosis); co-infection with HIV, HBV. In the presence of hepatitis without cirrhosis in 4% of cases, and with cirrhosis in 12%, a transformation into a neoplastic process occurs. Patients with cirrhosis need regular ultrasound monitoring, determination of the level of  $\alpha$ -fetoprotein.

**Conclusions.** All these features of pathogenesis are extremely important to take into account when treating chronic hepatitis C. The main task of antiviral therapy at various stages is the elimination of the virus, which makes it possible to prevent the development of cirrhosis and decompensation of the developed cirrhosis, to prevent the development of HCC and B-cell lymphoma. The criterion for achieving the main goal of antiviral therapy is the formation of a sustainable virological response - aviremia within 6 months after the end of treatment. Today, methods have already been developed to predict response to therapy based on the study of viral kinetics of the early stage of treatment.