CLINICAL SIGNIFICANCE OF IMMUNITY INDUCED BY THE HEPATITIS B VACCINE

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Viral hepatitis B is a chronic, sometimes acute, infectious disease caused by the hepatitis virus, characterized by various clinical manifestations (from mild to severe, fatal forms), often leaving serious complications, and is widespread among the population. The virus has a complex structure, consisting of two parts: the outer shell contains a superficial antigen HBcAg, and the inner core contains double-stranded DNK, the DNK polymerase enzyme, and HBcAg. Detection of antigens and antibodies of the hepatitis B virus has not only diagnostic, but also prognostic significance. The dynamics of antibody synthesis against different antigens vary, with HBc-antibodies appearing in the prodromal period, followed by HBc-antibodies, and finally HBc-antibodies. Viral hepatitis B (VHB) is one of the most important public health problems worldwide. Its danger is not limited to the development of acute infection, but it is also characterized by severe complications such as chronic hepatitis and liver cirrhosis.Vaccination against viral hepatitis B serves as the main method of prevention of this infection [1,2,3].

Assessment of the degree of formation, duration, and effectiveness of immunity formed after vaccination against hepatitis B based on clinical and

laboratory indicators, as well as substantiation of its significance in practical medicine by determining the degree of protection of the immune response [4,5,6].

Vaccinated and unvaccinated individuals against Hepatitis B were observed at the multidisciplinary clinic of Samarkand State Medical University, as well as in the research laboratory organized under the Department of Clinical Laboratory Diagnostics and the DKTF Clinical Laboratory Diagnostics course, and under the supervision of an infectious disease specialist. All participants underwent standard clinical and laboratory tests. Determination of antigens and antibodies in blood serum was carried out in this research laboratory using the immunofluorescence analysis method, using the Russian test system "Vector-Best."

With the help of determinant antigens used in modern test systems developed against hepatitis B, it is possible to determine the amount of antibodies produced in the body and assess the level of immune response formation. These methods determine the duration of protective immunity in vaccinated individuals.This approach serves to analyze the effectiveness of vaccination on a scientific basis, as well as to determine the need for revaccination. This approach serves to analyze the effectiveness of vaccination on a scientific basis, as well as to determine the need for revaccination. The strength and duration of post-vaccination humoral immunity are assessed based on clinical and laboratory indicators, and the proportion of individuals reliably protected from infection is determined [7,8].

Conclusion: Hepatitis B is one of the most pressing health problems in the world, which often transitions into chronic processes and can lead to serious complications - cirrhosis of the liver and other pathological conditions. The most effective preventive measure against this infection is vaccination, which forms long-term protective immunity in the body. At the same time, it is scientifically important to study changes in the level of antibodies in the post-

vaccination period, assess the duration of immunity, and determine the need for additional vaccination. Improvement of diagnostic systems designed to detect markers such as HBsAg and anti-HBs requires constant monitoring of their sensitivity and accuracy.

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