CLINICAL AND LABORATORY EVALUTION OF THE STATUS AND DURATION OF IMMUNITY AFTER HEPATITIS B VACCINATION

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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. In 2000, a decision was made at the state level to initiate vaccination prophylaxis against hepatitis B.As a result of vaccination, antibodies against the HBs antigen contained in the vaccine are produced in vaccinated individuals, leading to the formation of stable immunity against the hepatitis B virus.Considering that recombinant vaccines against hepatitis B began to be used in our country 25 years ago, studying the dynamics of post-vaccination antibodies is of significant scientific importance.Assessing the threshold values of the duration of immunity and determining the necessity and timing of booster vaccination is one of the most pressing issues.Diagnostic test systems for the detection of surface antigen (HBsAg) and anti-HBs

antibodies are continuously being improved, which requires monitoring their sensitivity and specificity.

Research Objective: To assess the frequency of determining hepatitis B markers prior to vaccination and to dynamically study the status and duration of persistence of post-vaccination immunity against hepatitis B among the population.

Materials and Methods: Hepatitis B–vaccinated and unvaccinated individuals are clinically monitored at the multidisciplinary clinic of SamDTU, as well as in the research laboratory established at the Department of Clinical Laboratory Diagnostics and the Clinical Laboratory Diagnostics course of DKTF, and in the infectious disease specialist's office.All patients undergo standard clinical and laboratory examinations.The identification of antigens and antibodies in the blood is carried out using the IFA (Immunofluorescence Assay) method with the "Vector-Best," Russia test systems, at the research laboratory established at the Department of Clinical Laboratory Diagnostics and the Clinical Laboratory Diagnostics course of DKTF.

Scientific news: Using the determinant antigens contained in the new test systems allows for the determination of the level of antibodies and the formation of the immune response against viral hepatitis B, as well as for assessing the duration of protective immunity developed in the bodies of vaccinated individuals.This approach allows for a scientific assessment of vaccination effectiveness and the determination of the need for revaccination.The duration and strength of post-vaccination humoral immunity are assessed clinically and in the laboratory, and the proportion of individuals reliably protected against this infection is determined.

Conclusion: Viral hepatitis B represents a serious global public health challenge, often leading to severe complications such as chronic hepatitis and liver cirrhosis. Vaccination serves as the primary preventive measure, inducing long-lasting immunity, while the study of post-vaccination antibody dynamics and the assessment of the need for booster doses remain scientifically relevant. Continuous improvement of diagnostic systems for HBsAg and anti-HBs antibodies necessitates careful monitoring of their sensitivity and accuracy.

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