

LABORATORY SUPPORT OF VACCINE-PREVENTABLE INFECTIONS. UNSOLVED AND/OR UNSOLVABLE PROBLEMS OF VACCINOLOGY

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Background: The COVID-19 pandemic has forced humanity to rethink global threats to biological safety and develop effective anti-epidemic measures. The medical community is once again turning its attention to methods of specific immunological prevention of infectious diseases as accessible and effective measures to prevent infection and/or the development of severe forms of the disease.

Methods and Objectives: To assess humoral immunity to some vaccine-preventable infections the content of antibodies in the blood serum to pathogens of infectious diseases (measles, rubella, tick-borne encephalitis, parotitis, VZV, hepatitis A, hepatitis B) was determined by the enzyme immunoassay method using reagent kits manufactured by Vector-Best in accordance with the instructions for use. Objective of the study: donors (n=521), Vector-Best employees (n=710), and healthcare workers (n=1875).

Results: The results of the assessment of population immunity to pathogens of some vaccine-preventable infections indicate different levels of seroprevalence to various pathogens, as well as depending on professional affiliation and place of work. For example, antibodies to the measles virus were not detected in 46% of donors, 24% of employees of a non-medical organization, and only in 5% of healthcare workers of an infection hospital. The proportion of people not protected from the rubella pathogen ranges from 2 to 15.5%. A low level of tick-borne encephalitis virus seroprevalence was revealed in the endemic region (58.4%). Significant individual differences in the duration of circulation of antibodies to tick-borne encephalitis virus after vaccination have been demonstrated. In 7 people, the phenomenon of immune amnesia was discovered in relation to the pathogens of rubella, mumps and tick-borne encephalitis after suffering from measles.

Conclusions: The obtained results must be considered when organizing preventive vaccination measures to predict and prevent infectious diseases, vaccine and immune certification of the population.

Keywords: vaccination, immunity, measles, infectious diseases, laboratory diagnostics