

SEROLOGICAL DIAGNOSTICS OF HEPATITIS

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Resume

In the article it is presented basic information about degree and peculiarity of spreading of viral hepatitis at population of the azerbaijan republic. there are in the paper official data about morbidity of acute hepatitis a, hepatitis b and hepatitis c. besides, the article contains information about results of serological examination of adult population for detection of specific markers of according viral infections.

Keywords: *viral hepatitis, morbidity, epidemiology,*

Relevance

Definition. Viral hepatitis B (HBV) is a viral anthroponotic infectious disease with a hemocontact transmission mechanism. The disease is characterized by cyclical hepatitis, accompanied in some cases by jaundice and possible chronization.

Epidemiology. Hepatitis B virus (HBV) infection is very high in the world. According to the World Health Organization (WHO), almost one in three people in the world is infected with the hepatitis B virus, and 400 million people are affected by this chronic infection. The unfavorable epidemiological situation of viral hepatitis B persists in Uzbekistan. It is estimated that 1.3 million people died from chronic hepatitis in 2022, or about 3,500 deaths per day. It is estimated that 254 million people are living with hepatitis B and 50 million people are living with hepatitis C worldwide, and 6,000 people are infected with viral hepatitis every day.

In the state report "On the state of sanitary and epidemiological well-being of the population in Uzbekistan in 2022", WHO experts have shown that the prevalence of HBV infection in a particular territory depends on the age of infection of the population. A high prevalence of HBV infection (up to 8%) was observed in countries where infection occurs in the perinatal period or in early

childhood (South-East Asia, sub-Saharan Africa). At the same time, 70-90% of the population of these countries show serological signs of HBV infection. Russia is one of the countries with an average prevalence of HBV infection - from 2% in the European part to 8-10% in the east of the Russian Federation (Tuva, Yakutia). Such fluctuations in the infection rate are observed where there is a mixed infection pattern (newborns, young children, and adults). Serological signs of HVI infection in these territories are found in 10-60% of the population.

The only source of ILD is a person with various forms of the disease. The virus is found in almost all biological media of the body: in blood, semen, saliva, urine, bile, breast milk, vaginal secretions, cerebrospinal fluid, synovial fluid, tears. The main pathogenic factor of virus transmission is blood. 0.0005 ml of infected blood is enough to cause HBV infection.

The hemo-contact mechanism of hepatitis B infection can be realized in various ways. There are natural and artificial transmission routes. The natural ways are sexual, vertical, and contact-household. According to the Hepatitis Surveillance Reference Center (Central Research Institute of Epidemiology of Rospotrebnadzor), the share of natural transmission routes of the virus in 2010 was 35.3%. The household contact route of transmission is more often observed among children in families with chronic hepatitis B when using common personal hygiene items. The proportion of vertical infection among all transmission routes of the hepatitis B pathogen was about 1.0% in 2010. Vertical infection mainly occurs during childbirth from HBsAg—carrying mothers; however, the risk of infection increases if the mother has an active reproduction of the virus. The risk of infection is approximately 70-90%.

Artificial ways of transmission of hepatitis B are realized with non-medical intravenous administration of psychoactive substances (drugs), as well as during cosmetic procedures (manicure, pedicure), piercing and other manipulations, including medical ones, accompanied by damage to the skin and mucous membranes. In the structure of acute hepatitis B transmission routes in 2010, the proportion of infection from the use of injectable psychoactive drugs was 14.4%, and the proportion of infection from various medical manipulations was about 3.8%.

The purpose of the work is to analyze the current epidemic situation of infections caused by HCV, HBV, as well as hepatitis c (hcv), d (hcv), e (hcv), c (hcv) and tt (tt) viruses, taking into account their spread in the republic.

Material and methods

Data on the number of cases of acute hepatitis a (ha), b (hb) and c (hs) were borrowed from the official reports of the Ministry of Health of the Republic. Based on these data and the population of the country for the corresponding year, the incidence rates per 100 thousand population were calculated. In

addition, the real breadth of the spread of these infections was assessed based on data on the results of seroepiological studies conducted by different groups of researchers at a number of institutions (the republican sanitary and epidemiological station; Research Institute of Virology, Epidemiology and Hygiene, Center of Oncology,) ELISA test systems from different manufacturers were used, which were characterized by maximum sensitivity at the time of the study.

Anti-hav studies were conducted among healthy people aged 14-85 years who underwent preventive examinations (more than 14 thousand people were examined). hbad and apu-nst were determined in blood sera among single blood donors aged 18-60 years (about 300 thousand people were examined) and healthy people (more than 10 thousand people) during preventive examinations in the absence of a history of hepatitis. A certain part of hbad-positive blood sera (more than 1,000 samples) was examined for the presence of a serological marker of LICE infection (anti-hdv).among cancer patients over 60 years of age (100 people), studies were conducted on the marker of HCV infection (anti-hev).Studies on HCV infection (anti-hgv) were conducted among blood donors (134 people) and cancer patients (127 people).Some of the blood sera were examined by PCR using various primers:

Statistical data processing was performed using methods of variational statistics, intensive and extensive indicators were calculated over time.

Result and discussion

Considering that the incidence rates of acute viral hepatitis are important parameters reflecting the regional intensity of the circulation of hepatotropic viruses, data on the number of cases of acute ga, gw and hs registered in the country in the corresponding years are given below. At the same time, due to the limited informative value of information on the incidence of acute hepatitis, an assessment of the actual breadth of these infections was carried out based on the results of seroepiological studies, i.e. by determining the frequency of detection of serological markers of infection with the corresponding viruses among apparently healthy residents from various age groups of the country's population.

At the same time, the frequency of detection of specific antibodies (for all viral hepatitis) or virus antigen (for HBV) in the examined people was taken as objective indicators of the breadth of the spread of the relevant infections. Taking into account the size of the country's population and the above-mentioned breadth of HBV infection, taking into account the difficulties in diagnosing acute hs and the lack of registration of cases of chronic hs in the country, the results of a serological examination of the country's population for the presence of HCV antibodies (apu-hcv) are of the greatest informative value.

Conclusion: considering the above, the following preventive measures have been developed against viral hepatitis:

- Increase the coverage of screening examinations for the early detection of viral hepatitis types "B" and "C", as well as the organization of disease treatment in all regions of the republic.

- Full coverage of people at high risk of infection, including healthcare professionals working with blood and its components, with hepatitis B vaccination.

- Free provision of medicines for patients who have been diagnosed with viral hepatitis type "C" during screening examinations during treatment.

- Phased full provision of consumables (reagents and test kits) for the detection of viral infections in the primary health system.

- Creation and maintenance of a unified electronic register of chronic viral liver diseases in all medical institutions, sanitary and epidemiological service and non-governmental medical organizations.

- Improving the control of safety, quality and effectiveness of vaccines, test kits and antiviral medicines.

These measures will help significantly reduce the incidence of viral hepatitis and provide high-quality treatment for those infected.

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