practical healthcare of antigen detection methods that are highly sensitive while maintaining high specificity.

In contrast to the detection of HBsAg in asymptomatic carriers, in patients with acute hepatitis B the level of antigen concentrations is higher, which makes it possible to detect the antigen when using diagnostic drugs with a sensitivity of 0.5 ng/ml in more than 95% of patients with hepatitis B in the acute period of the disease.

An equally important task is the identification of anti-HCV. In contrast to the detection of HBsAg, methods based on the interaction of HCV antigens (obtained using recombinant technology or through chemical synthesis) with labeled antibodies have been developed and are used to detect anti-HCV.

To detect anti-HCV, antigens encoded by different zones of HCV RNA are used. Such tests are easy to use and allow the differential determination of antibodies to the nuclear and non-structural (NS3 + NS4 + NS5) proteins of the HS virus. In addition to the qualitative result of anti-HCV testing (whether anti-HCV is present or not), such a test allows one to determine early anti-NS3 and anti-NS4 antibodies as well as anti-HCV core antibodies, which are located at different points on the ridge, which plays the main role in detecting the hepatitis C virus at an early stage. The provided possibility of separate testing of antibodies to HCV allows one to obtain information important for the doctor to distinguish between acute and chronic hepatitis C.

Today, the diagnosis of hepatitis B and C does not require any complex laboratory or instrumental studies, and is also not particularly expensive. The actual confirmation of the diagnosis is the detection of markers of HBV or HCV infection in the patient's blood. Detailed diagnosis involves an in-depth serological examination to identify specific antigens of the virus or antibodies to them, as well as determination of the viral load using the polymerase chain reaction (PCR).

The activity and stage of the disease are currently determined using non-invasive laboratory (FibroTest, FibroMax) or instrumental (FibroScan, ultrasound elastometry) research methods that have replaced biopsy. However, timely diagnosis of latent forms of parenteral hepatitis still remains relevant.

One of the extremely important tasks of laboratory diagnosis of viral hepatitis is the etiological decoding of acute cases and the identification of latent cases. This question is important, since the treatment tactics and implementation of preventive measures depend on the answer to it.

MODERN IMMUNOLOGICAL METHODS OF DIAGNOSTIC DISEASE OF COVID 19

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Introduction. According to the Ministry of Health of Ukraine, the coronavirus infection was first diagnosed in 2020, and already in 2024, there are more than 5.5 million patients with COVID-19.

Therefore, today, early diagnosis and establishing an accurate diagnosis of COVID-19 is an urgent issue of modern laboratory medicine, and is also important for the timely detection of asymptomatic carriers.

Materials and methods. The study is based on the analysis of scientific articles, clinical studies and epidemiological data studying.

Results and discussion. The most common and generally accepted methods of detecting the SARS-CoV-2 coronavirus and diagnosing the disease COVID-19 are two groups of diagnostic tests.

A significant place among the existing modern methods of laboratory diagnostics is occupied by PCR analysis, the basis of which is the detection of SARS-CoV-2 RNA, which is the «gold standard» for the diagnosis of COVID-19 (indicators of sensitivity and specificity are almost 95%). Due to high specificity and sensitivity is the main a tool for diagnosing the infection of COVID-19, but it also has certain disadvantages, for example, the heterogeneity of the material samples, the sufficiently long time of conducting the study, the high cost.

Common methods of diagnosing patients with coronavirus infection are serological, in particular enzyme-linked immunosorbent assay (ELISA). In Ukraine, the use of ELISA tests for the detection of antibodies to COVID-19 is regulated by the order of the Ministry of Health of May 20, 2020 No. 1227 «On approval of changes to the Standards of medical care «Coronavirus disease» (COVID-19). With the help of ELISA analysis, it is possible to detect markers of infection - immunoglobulins IgM and IgG - with sufficient sensitivity and specificity, these studies can be used as an additional diagnostic tool in the late stages of the disease.

Immunochemiluminescence analysis (IHLA) is considered a more qualitative method of research that provides quantitative results, that is, it is more accurate to find out whether immunity has already been formed in the body, or it is in the acute stage of the disease. In some cases, this can be a factor in increasing the effectiveness of the COVID-19 diagnostic system.

There is also an express diagnosis of COVID-19 using rapid tests (the result of the test can be found out after 15-20 minutes), however, during the conduct of this type of laboratory research, it is possible to get a false positive and/or false negative result. When carrying out this type of laboratory analysis, the information obtained will indicate only the presence of antibodies to the virus in the blood.

Conclusions. Therefore, the results of other types of laboratory tests must be confirmed by a PCR test in order to obtain a more accurate result for COVID-19 and establish a final diagnosis of the disease, that is, these tests must be used together.