

ANALYSIS OF CLINICAL AND LABORATORY PARAMETERS IN VIRAL HEPATITIS OF DIFFERENT ETIOLOGY

Mirkhoshimov Mirfozil Mirkhotamovich

City Infectious Diseases Hospital №5

Annotatsiya: Klinik va laboratoriya parametrlarini tahlil qilish virusli gepatitlarni tashxislash va farqlashda muhim ahamiyat kasb etadi. Virusli gepatit – bu asosan jigar parenximasining viruslar tomonidan zararlanishi natijasida rivojlanadigan kasalliklar guruhidir. Kasallik dunyoning deyarli barcha hududlarida, har xil yoshdagi odamlar orasida uchraydi. Virusli gepatitlarning bir nechta turlari mavjud, ularning eng keng tarqalganlari A, B, C, D, E virusli gepatitlaridir. Har bir gepatit turining o‘ziga xos klinik kechishi, patogenez va laboratoriya belgilariga ega. Virusli gepatitlarni to‘g‘ri tashxislash, davolash va profilaktik choralarni tanlashda klinik va laboratoriya tahlillar muhim rol o‘ynaydi.

Kalit so‘zlar: virusli gepatit, patogenez, bemorlar, davolash, klinik belgilar, umumiy holsizlik, laboratoriya tahlillar, viruslar.

Аннотация: Анализ клинико-лабораторных показателей имеет большое значение в диагностике и дифференциальной диагностике вирусных гепатитов. Вирусные гепатиты – это группа заболеваний, развивающихся преимущественно вследствие поражения паренхимы печени вирусами. Заболевание встречается практически во всех регионах мира, среди людей всех возрастов. Существует несколько типов вирусных гепатитов, наиболее распространенными из которых являются вирусные гепатиты А, В, С, D, Е. Каждый тип гепатита имеет свое клиническое течение, патогенез и лабораторные признаки. Клинико-лабораторные признаки играют важную роль в правильной диагностике, лечении и выборе мер профилактики вирусных гепатитов.

Ключевые слова: вирусные гепатиты, патогенез, пациенты, лечение, клинические признаки, общая слабость, лабораторные признаки, вирусы.

Abstract: Analysis of clinical and laboratory parameters is of great importance in the diagnosis and differentiation of viral hepatitis. Viral hepatitis is a group of diseases that develop mainly as a result of damage to the liver parenchyma by viruses. The disease occurs in almost all regions of the world, among people of all ages. There are several types of viral hepatitis, the most common of which are viral hepatitis A, B, C, D, E. Each type of hepatitis has its own clinical course, pathogenesis and laboratory signs. Clinical and laboratory tests play an important role in the correct diagnosis, treatment and selection of preventive measures for viral hepatitis.

Keywords: viral hepatitis, pathogenesis, patients, treatment, clinical signs, general weakness, laboratory tests, viruses.

INTRODUCTION

Viral hepatitis often begins with symptoms of general intoxication. The condition of patients is aggravated, body temperature rises, general weakness, headache, decreased appetite, abdominal pain appear. In some patients, clinical signs such as yellowing of the skin and eye sclera, a feeling of heaviness in the abdomen, enlarged liver and spleen are observed. Often, chronic forms of hepatitis are accompanied by asymptomatic or extremely mild clinical symptoms. Clinical manifestations differ depending on the type of virus, the age of the patient, immunological condition and other factors. For example, if viral hepatitis A is often in mild form and with rapid recovery, in viral hepatitis B and C, the disease can take a chronic form and lead to cirrhosis of the liver and liver cancer.

MATERIALS AND METHODS

Laboratory analysis is key in determining the diagnosis of viral hepatitis and determining its type, stage, severity. In general, a number of blood, urine, feces and serological tests are carried out to diagnose Viral Hepatitis on the basis of laboratory tests. In the blood, the levels of liver enzymes – alanine aminotransferase (ALT) and aspartate aminotransferase (AST) - are determined first. High levels of these enzymes indicate damage to liver cells. Typically, ALT levels are higher than AST levels in hepatitis. In addition, total bilirubin and its correct and non-correct fractions, as well as other liver functional tests, are studied in the blood serum. Increased Bilirubin levels will be associated with yellowing of the sclera and skin. In the biochemical analysis of blood, a general protein, albumin, prothrombin index, thymol test indicator are also predicted. These parameters help assess liver cell function and determine the severity of hepatitis. In viral hepatitis, there is often a violation of protein synthesis, a decrease in the prothrombin Index, an increase in the thymol test. In severe hepatitis, the risk of bleeding increases as a result of hemostasis disorders. In clinical analysis, patients may experience a change in the number of Erythrocytes, Leukocytes and platelets. In some cases, agranulocytosis, anemia or thrombocytopenia are noted.[1]

One of the most important methods for distinguishing viral hepatitis is serological analysis. Serological tests detect viral antigens and antibodies against them. Each type of viral hepatitis has its own markers. For example, the major serological markers for hepatitis B virus are HBsAg, HBeAg, anti-HBc IgM and IgG, while the hepatitis C virus detects anti-HCV IgG and IgM. Anti-HAV IgM and IgG markers for hepatitis A virus, and anti-HDV and HDV-RNA detection in viral hepatitis D. These markers can be used to assess the phase of the disease, the degree of progression, and the outcome.[2]

By immunological analysis, the immune response of the body in viral hepatitis, in particular, the content of lymphocytes, the level of immunoglobulins, the amount of cytokines, is assessed. These parameters help to assess the severity and prognosis of

the disease. In the case of viral hepatitis, especially in its chronic forms, a weakening of the immune system or the development of autoimmune processes is possible. This condition can lead to difficult treatment of patients and the appearance of complications. Molecular biological methods, specifically polymerase chain reaction (PZR), are widely used to identify viral hepatitis and differentiate them. With this method, the RNA or DNA of the virus is detected. Information on the genotype, load levels, and mutation changes of the virus is obtained through PZR. Based on this information, it is possible to correctly select treatment tactics, use special antiviral drugs, and develop an individual plan for monitoring the patient.[3]

In the research work, a deep analysis of the clinical picture and laboratory parameters of patients with viral hepatitis of various etiologies was carried out. Patients diagnosed with Viral Hepatitis for clinical study were monitored in health care facilities and associated anamnestic, physical and symptomatic data were collected. With special attention were noted the age of patients, gender, place of residence, source of infection, duration of the disease, the main clinical signs (jaundice, weakness, abdominal pain, nausea, body temperature, color of the skin and eye mucosa). On the results of laboratory analyzes, samples of blood serum of patients were taken. These samples were tested through modern methods. In biochemical analysis, mainly alanine aminotransferase, aspartate aminotransferase, general and correct bilirubin, albumin, gamma-globulin, thymol assay and other indicators were studied. From hematological indicators, the number of Erythrocytes, Leukocytes, platelets and the amount of hemoglobin were analyzed. Other laboratory diagnostic indicators, such as prothrombin time, cholesterol levels, and general urine status, were also studied in depth. As diagnostic methods used, special laboratory reagents were used for immunoferment analysis, polymerase chain reaction, serological tests and detection of antibodies in the human body. Antigens and antibodies (e.g. HBsAg, anti-HCV, anti-HAV) have also been identified in order to determine the exact type of hepatitis virus. All laboratory analyzes were carried out in accordance with clinical protocols and modern regulatory guidelines. Clinical and laboratory data collected for statistical analysis was collected and carefully examined before processing using special statistical programs. Among them, attempts were made to identify correlations, changes, individual and epidemiological characteristics. As a result of statistical analysis, the commonality and differences between the various forms of viral hepatitis and their clinical-laboratory indicators were analyzed. In general, during the study, the clinical and laboratory condition of each patient was constantly monitored. All the data collected were used to analyze changes at different stages of the course of the disease and to perform differential diagnostics of various etiological types of viral hepatitis. Through this, important aspects of clinical and laboratory parameters were studied and analyzed in depth.

RESULTS AND DISCUSSION

The analysis of the above clinical and laboratory parameters is extremely important in diagnosing viral hepatitis and distinguishing them from each other, in determining the cause and consequences of the disease rejection. For example, hepatitis A infection is often characterized by high temperature, intoxication, yellowing and high ALT, AST indicators in the acute phase. Hepatitis B, on the other hand, is characterized by the presence of serological markers (e.g., HBsAg, HBeAg), a chronic course, biopsy results lasting several years, and elevated liver enzymes. Hepatitis C often develops latently, is detected only with the help of laboratory tests and in many cases becomes chronic, resulting in cirrhosis of the liver or cancer. Hepatitis D develops mainly against the background of Type B and further aggravates the course of the disease. Hepatitis E is more severe in pregnant women and can be fatal. Another important aspect of laboratory analysis is the possibility of pre-identifying complications that develop as a result of the disease. For example, in Hepatitis with latent development or chronic form, the development of fibrosis of liver tissue, cirrhosis, liver failure, hemorrhagic syndromes and other immunological disorders is observed. Therefore, a thorough examination and analysis of patients on time will help to prevent the disease and improve the result of treatment.[4]

Treatment and Prevention for viral hepatitis is also carried out on the basis of clinical and laboratory analyzes. Patients are prescribed anti-virus therapy, symptomatic treatments, drugs that strengthen the immune system, liver guards (hepatoprotectors) and other intended treatment methods. To assess the effectiveness of treatment, the level of ALT, AST, bilirubin, virus markers is regularly monitored through laboratory analyzes. In preventive work, it is also important to monitor the laboratory and clinical situation, check people in risk groups, conduct vaccination programs. There are vaccines against hepatitis B and A and they help to establish vaccination procedures among the population. With laboratory analysis, it is possible to assess the outcome of antiviral therapy and monitor disease behavior in real time. The differences in clinical manifestations of various types of viral hepatitis and their specific laboratory parameters require the cooperation of doctors and laboratory staff. Correct diagnosis and ultimately effective treatment, maintaining public health are carried out with the help of clinical and laboratory analyzes. The possibilities of modern laboratory diagnostics are one of the most effective ways to detect the disease early, assess the severity of the process, predict results and prevent complications.[5]

Of great importance in the process of treating hepatitis of different etiologies is the need and advantages of conducting laboratory supervision. Through laboratory supervision, it is possible to dynamically assess the effectiveness of treatment, timely correction of the course of treatment, early detection of complications and determining the prognosis of the disease. First, with the help of laboratory analyzes, the causative

agent of hepatitis is determined, that is, the type of virus and the stage of the disease are studied. On this basis, an individual treatment plan can be drawn up. During laboratory control, liver enzymes (ALT, AST), bilirubin, prothrombin Index, Total Protein and other indicators are constantly monitored. With the help of their dynamics, it is understood how the patient's body responds to the healing process. If the index of enzymes is restored quickly – this indicates that the treatment is going effectively, on the contrary, if there are no changes or worsens, it will be necessary to change the treatment strategy. Another advantage of laboratory monitoring is the determination of the amount of virus in the blood serum (viral load). It is important that the viral load decreases as a result of drug efficacy. If necessary, the dosages or types of antiviral therapy are changed. Changes in immunological parameters-immunoglobulins, lymphocytes and cytokines-can also be observed. This helps control the autoimmune reactions or secondary infections that can form. Preliminary detection of toxic side effects of drugs prescribed for treatment is also carried out through laboratory supervision. For example, hepatotoxic drugs can negatively affect liver cells, which is manifested in changes in enzymes and other parameters. The fact that hepatitis is accompanied by complications (for example, cirrhosis of the liver, the first stages of liver cancer, hemorrhagic syndromes) is manifested in the results of laboratory studies. Having patients under regular laboratory supervision makes it possible to detect these strong complications in advance and prevent them. Even after treatment is complete, patients are advised to undergo a follow-up course of laboratory tests. It is considered important in controlling the recurrence or non-latent chronic form of the disease. The main advantage of laboratory control in the treatment of viral hepatitis is an individual approach and the ability to assess the real state of the patient. Based on the result of the laboratory analysis, the doctor can make quick and appropriate decisions, achieve high results, avoiding the risk and over-medication of the patient.[6]

When statistical analysis of clinical and laboratory parameters in viral hepatitis of different etiologies, a specific manifestation of certain symptoms is observed in each type of hepatitis. For example, in patients with a high percentage of Viral Hepatitis, Clinical signs are vividly expressed, and most patients experience jaundice in the body, general weakness, decreased appetite and increased body temperature. The majority of these patients are in the jaundice stage, and laboratory tests show a significant increase in liver enzymes. Chronic cases are rare. In the case of viral hepatitis B, however, clinical signs are relatively less common, with many patients experiencing the disease at latent and moderate severity. From laboratory indicators, jaundice and an increase in liver enzymes may not always be clear. Clinical signs are often moderately expressed, and the likelihood that the disease will develop into a chronic form is also high enough. In C viral hepatitis, however, most patients have very poor clinical signs. Jaundice, fever, and abdominal pain are rare, and the disease is often asymptomatic

and latent. In the laboratory results, the increase in liver enzymes and other changes are weakly expressed. At the same time, most patients have a higher chance of chronic disease. In general, a statistical analysis shows that while clinical and laboratory signs are detected in most patients in viral hepatitis A, in viral hepatitis B and C, these signs are steadily reduced and especially in Type C, hidden and weakly expressed signs predominate, but the percentage of chronic rejection is highest in Type C. Thus, the percentage distribution of data varies depending on the specific clinical and laboratory characteristics of each type of hepatitis.[7]

CONCLUSION

In conclusion, viral hepatitis of different etiologies are identified, differentiated, controlled and effective treatment is organized by studying clinical and laboratory parameters. While clinical diagnostics are based on the symptoms of the disease and the general condition of the patient, laboratory analysis clearly shows the etiology of the disease, as well as allows the analysis of parameters ranging from viral loading to immune and biochemical changes. These assist in determining the severity, possible complications, and outcome of the disease, as well as selecting an individual treatment plan for each patient. Clinical and laboratory methods of examination in the diagnosis, treatment and Prevention of viral hepatitis are always complementary and provide the basis for scientific and practical achievements in this area. Therefore, the importance of clinical and laboratory tests in the early and accurate detection of viral hepatitis, prescribing effective treatment, preventing the spread of the disease, and ensuring public health is immeasurable.

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