

HEPATITIS: TYPE CHANGE, SYMPTOMS, DIAGNOSIS AND TREATMENT METHODS

Tojiboyeva Sevinch Jasur qizi

Toshkent Kimyo Xalqaro Universiteti Stomatologiya yo'nalishi

Abstract

Hepatitis is an inflammatory disease of the liver tissue that can occur for a variety of reasons. There are viral forms of hepatitis (A, B, C, D, E), as well as autoimmune, alcoholic and drug-dependent types. In this article, the etiology, pathogenesis, clinical manifestations, methods of diagnosis and treatment of hepatitis are widely covered on the basis of medical sources. The article also discusses the role of hygiene, vaccinations and healthy lifestyle in protecting against disease.

Keywords: Hepatitis, liver, viral infection, jaundice, hepatitis A, B, C, D, E, diagnosis, treatment, prophylaxis.

Introduction

Hepatitis is one of the most common and dangerous diseases in medicine and is characterized by inflammation of the liver. Hepatitis occurs when influenced by many factors: as a result of viral infections, poisonous substances, alcohol, autoimmune reactions, or the toxic effects of certain drugs on the liver. And the liver performs vital functions in the body, such as basic metabolic processes, detoxification, hormone production, protein synthesis. So the disruption of its performance can lead to dire consequences for the whole body. Worldwide, millions of people suffer from hepatitis each year, but most cases of the disease can be cured if detected early. Unfortunately, due to the fact that hepatitis passes in various forms, sometimes without symptoms, in many patients it is detected at a late stage. In particular, types of hepatitis B and C develop into a chronic form, which can lead to liver fibrosis, cirrhosis, or even liver cancer. This article provides an in-depth and detailed medical analysis of hepatitis: causes, viral types, clinical signs, modern diagnostic methods and treatment measures. It will also consider current measures to prevent the occurrence of the disease.

Key Section

Hepatitis is a disease with inflammation of the liver cells, which is one of the most common pathologies in medicine. The inflammatory process in the liver can occur for various reasons: viral infections, poisonous substances, autoimmune processes and even some drugs appear.

In some cases, hepatitis proceeds in a mild form, and it resolves on its own. But in chronic cases, it can cause scarring in the liver (fibrosis), complete structural disruption (cirrhosis), or a tumor of liver cells (liver cancer). And the liver performs important functions in the body, such as blood purification, vitamin storage, hormone production. Therefore, hepatitis puts at risk not only the health of the liver, but the entire body.





Hepatitis disease develops under the influence of several key factors. They consist of the following components:

- Viral infections are the most common cause. It is mainly associated with hepatitis A, B, C, D, and E viruses.
- Toxicity – a large intake of alcohol, some drugs (for example, paracetamol, antibiotics) have a toxic effect on liver cells.
- Autoimmune reactions – sometimes the body perceives its liver tissue as "foreign" and launches an immune attack against it.
- Medications and Chemicals – Medications taken in the wrong dosage or for a long time can damage the liver.
- Metabolic disorders – Certain congenital disorders (such as Wilson's disease) can also cause inflammation of the liver.

These factors can provoke various manifestations of hepatitis. Each of them in its own ways damages liver activity and leads to clinical manifestations. The most basic forms of hepatitis are viral species. They are divided into the following groups:

1.Hepatitis A (HAV) is a fecal-oral infection that is mainly spread through contaminated food and water. In most cases, it is mild, and the patient fully recovers in 2-6 months. Symptoms include fever, nausea, diarrhea and jaundice. Hepatitis A is not going to be chronic.

2.Hepatitis B (HBV) is a serious viral infection that is transmitted through blood, semen and other bodily fluids. It can also be transmitted from mother to baby. The disease passes into a chronic form, causing cirrhosis or cancer of the liver. There is an effective vaccine against hepatitis B.

3.Hepatitis C (HCV)-Often transmitted through contaminated blood and blood products. Sometimes it can also be contagious through sex. The likelihood of the passage into a chronic form is very high. There is no vaccine, but a complete recovery is possible with modern antiviral treatment.

4.Hepatitis D (HDV)-Occurs only in individuals infected with hepatitis B because HDV cannot reproduce independently. Hepatitis D is often severe and at high risk of developing into a chronic form.

5.Hepatitis E (HEV)-Transmitted through contaminated water and food. It is acute similar to hepatitis A. But for pregnant women, it can be very dangerous, as there is a high probability of causing severe liver failure.

6.Autoimmune hepatitis -Occurs as a result of an immune reaction of the body against its own liver cells. It occurs in more females. Immunosuppressive drugs are used in the treatment.

7.Alcoholic hepatitis -Occurs with inflammation of the liver and cell damage as a result of large consumption of alcohol for a long time. In severe cases, it leads to cirrhosis.

Symptoms of hepatitis manifest themselves in different ways, depending on the type of virus, the immune status of the patient, and the stage of the disease. The initial stage of the disease is often called the acute phase and may begin with the following symptoms: fatigue, weakness; Loss of appetite; mild body temperature (subfebrile fever); nausea and vomiting; Pain in the abdomen, especially under the right rib; Nausea, diarrhea or nausea; yellowing of the skin and eyes (jaundice); Dark-colored urine and light-colored feces; Pain in the muscles and joints. In some cases, especially in patients infected with hepatitis A and E viruses, these symptoms are mild and disappear on their





own. However, the B, C and D viruses can develop into a chronic form, causing long-term liver damage.

In chronic cases of hepatitis, the patient is observed: Constant fatigue, decreased productivity; Prevention of jaundice; abdominal swelling (asciti); painful liver (palpation); dilution of the venous vessels (in the gastrointestinal region); Neurological symptoms (hepatic encephalopathy).

In addition to clinical investigations, modern laboratory and instrumental methods are used in the detection of hepatitis. The following tests are considered the most basic:

1. Blood tests -ALT (alanine aminotransferase) and AST (aspartate aminotransferase) – indicate damage to liver cells. Bilirubin – assesses the activity of the liver in relation to jaundice. Alkaline phosphatase - indicates a condition of the liver and biliary tract. Serological tests – detect antibodies in the body against the virus (for example, anti-HAV IgM, HBsAg, anti-HCV).
2. Determination of virus genetic material -By PCR (polymerase chain reaction), the presence of HBV DNA, HCV RNA and other viruses is confirmed.
3. Instrumental methods -Liver biopsy – microscopic analysis of the liver tissue to determine the degree of inflammation and the condition of fibrosis. Elastography – assesses the density of the liver (used to determine cirrhosis or fibrosis). Ultrasound scan (ultrasound) – widely used in the study of liver structure and size. Accurate diagnosis is an important stage for effective treatment of hepatitis. Depending on each type of hepatitis, the diagnostic algorithm is different.

The Devil's Advocate

Hepatitis A- It usually resolves on its own. Treatment is symptomatic and the patient is advised to rest plenty, drink fluids, and avoid alcohol and hepatotoxic drugs.

Hepatitis B- If it occurs in the acute form, no separate antiviral treatment is usually required. In chronic form, drugs such as tenofovir, entecavir, pegylated interferon are used. Treatment lasts long (years), is aimed at maintaining liver functions and preventing cirrhosis.

Hepatitis C- The most advanced treatment is direct acting antiviral drugs (DAAs), such as sofosbuvir, ledipasvir, velpa. The duration of treatment is usually 8–12 weeks, and more than 95% of patients fully recover.

Hepatitis D- Chronic occurs associated with hepatitis B. The only effective means of treatment is pegylated interferon alfa-2a. However, this treatment does not always give a good result and has many side effects. Recently, the drug bulevartide (Hepcludex) has been adopted in Europe.

Hepatitis E- Mild in most people, limited to symptomatic treatment. In pregnant women, the disease is more severe and can lead to liver failure. In immunocompromised patients, the drug ribavirin is sometimes used.

Autoimmune hepatitis- It starts initially with corticosteroids (prednisolone). Then it is continued with azathioprine, tacrolimus or other immunosuppressive drugs.

Prevention for hepatitis A and E: Strictly observe the rules of hygiene (hand washing, consumption of clean food). Not to consume contaminated water and food. Use boiled or bottled water when traveling. Vaccination against hepatitis A (especially for healthcare workers, children, and travelers).

Prevention for hepatitis B and D: A comprehensive vaccine against the hepatitis B virus is the main route to prevent the disease. Using a sterile needle and medical equipment. Having protected sex





(using condoms). Scrutiny of donor blood at blood donation and reception. Adhering to cleanliness and sterility in tattoo, piercing, manicure, dental and surgical procedures.

Prevention for hepatitis C: There is no vaccine yet, so it is only necessary to be careful about the ways of transmission. Caution (especially for medical personnel) in cases of contact with blood. Using a disposable needle, syringe and other means. Avoid the general use of toothbrushes, lubricants.

Conclusion

Hepatitis is a complex set of diseases caused by inflammation of the liver, viral or of other causes. Its forms A, B, C, D, E have a different clinical picture, ways of transmission and treatment options. In particular, types B, C and D are chronic, with serious consequences such as cirrhosis and liver cancer. The introduction of modern diagnostic drugs and antiviral therapy methods helps to improve the quality of life of hepatitis patients and prevent the occurrence of severe complications. The most important thing is to detect the disease early, not be indifferent to the symptoms and start treatment in time. Vaccination, personal hygiene, access to clean water and food, safe medical practices, and raising awareness in the community play an important role in the fight against hepatitis. Therefore, everyone should have sufficient knowledge about the disease and follow the necessary precautions.

References

1. Langan RC, Goodbred AJ. Hepatitis A. Am Fam Physician. 2021; 104(4):368-374.
2. Jeong SH, Lee HS. Hepatitis A: Clinical Manifestations and Management. Intervirology. 2010.
3. Cristina J, Costa-Mattioli M. Genetic variability of hepatitis A virus. Virus Res. 2007.
4. WHO. Global Hepatitis Report. World Health Organization, 2023.
5. Nicholas H. Acheson. Fundamentals of Molecular Virology, Wiley, 2nd ed., 2011.
6. Desk Encyclopedia of Human and Medical Virology. Elsevier, 2010.
7. EASL Guidelines. Management of Hepatitis C virus infection. J Hepatol. 2020.
8. WHO. Hepatitis D Fact Sheet, 2022.
9. MYR Pharmaceuticals. Hepcludex (Bulevirtide): Clinical Overview, 2020.
10. Nainan OV, et al. Diagnosis of hepatitis A virus infection. Clin Microbiol Rev. 2006.

