

# NEW CONCEPTS IN HEPATIC ECHINOCOCCOSIS

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## Abstract

Echinococcosis of the liver is one of the most common parasitic diseases, which is based on the formation of cysts in the liver. The main signs of this pathology are general weakness, significant decrease in appetite, decrease in body weight, feeling of heaviness in the liver region, nausea after eating fried or fatty food, stool disorder. To diagnose liver echinococcosis, general blood tests, immunologic methods, abdominal ultrasound, magnetic resonance imaging, liver SPECT, laparoscopy, etc. are used. The most effective treatment is surgical excision of cysts; antihelminthic drugs are also used.

**Keywords:** Hepatic echinococcosis, parasitic infection, tapeworm, liver.

## Introduction

Echinococcosis of the liver is a parasitic pathology that is caused by the tapeworm *Echinococcus*. Its larvae infiltrate and multiply in the tissues of the organ, forming cysts. This disease is considered one of the most common helminthic diseases. The occurrence of echinococcosis in different countries of the world varies significantly. The disease is mainly observed in regions that are actively engaged in agricultural activities. *Echinococcus* parasitizes in the human body exclusively in the form of larvae, affecting not only the liver, but also other organs such as the brain and lungs. In this case, the involvement of the liver occurs in 65% of all cases of this disease. The study of pathology is engaged in gastroenterology, infectology. Treatment of echinococcosis falls within the sphere of activity of such specialists as an infectious disease specialist, gastroenterologist, hepatologist and surgeon.

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after eating fried or fatty food, stool disorders. To diagnose liver echinococcosis, general blood tests, immunologic methods, abdominal ultrasound, magnetic resonance imaging, liver SPECT, laparoscopy, etc. are used. The most effective treatment is surgical excision of cysts; antihelminthic drugs are also used.

### Causes

Prior to introduction into the human body, the life cycle of echinococcus includes several stages that follow one after another. The final host among domestic pets is dogs and much less often cats. The parasite lives in the intestines of these animals in the form of mature worms. Their eggs with feces pass into water bodies, soil, on fruits, vegetables and so on. Further there are several options for getting eggs into the human body:

Part of the eggs are ingested by rodents of small size. In the liver of these animals, the larvae of echinococcus begin to mature. After eating rodents by wild predators, the latter are also infected with parasites. Therefore, hunters can get liver echinococcosis if game is poorly heat-treated.

Another part of Echinococcus eggs ends up in the digestive system of farm animals such as pigs, cattle, etc. The eggs enter the body of the mammal together with feed, grass or water, affecting its organs. The eggs penetrate into the body of the mammal together with feed, grass or water, affecting its organs. Therefore, eating meat without proper treatment can cause the development of liver echinococcosis.

The most common and relevant for humans is the third way of getting the parasite into the body. It is noted with insufficient observance of hygienic rules, which is especially relevant for children. Echinococcus can get into the gastrointestinal tract when eating unwashed fruit or playing with pets, after which hands were not thoroughly washed.

In humans, the larvae are initially absorbed into the bloodstream from the intestines and travel to the liver. They subsequently contribute to liver echinococcosis. However, many parasites do not pass from the blood through the liver barrier, spreading with the bloodstream to other organs.

### Symptoms of liver echinococcosis

Echinococcosis of the liver is a chronic disease, which does not have a sharply pronounced symptomatology, forcing a person to see a doctor in time. After infection, symptoms begin to appear not immediately, but after several months or years.

Most often, patients are concerned about general weakness, decreased tolerance to physical activity, decreased efficiency, headaches, small pitting rashes on the skin, periodic slight increase in temperature. These clinical signs are a consequence of the ingress of toxic products of echinococcus into the bloodstream and the body's reaction to the introduction of parasites. The development of echinococcus in the liver occurs in several stages, each of which has its own clinical features.

### Stage one

In the first stage, there may be no symptoms at all. Therefore, the infected person feels normal and leads an active lifestyle. At this stage, the echinococcus infiltrates into the hepatic tissue and forms



a protective capsule. The only manifestation of the disease can serve as a slight discomfort in the right subcostal region after eating a large amount of food.

### Second stage

The second stage is characterized by a clear clinical symptomatology. In patients, appetite is disturbed and body weight gradually decreases. When taking medications in infected people, a more frequent development of adverse reactions can be observed, which is associated with a decrease in the detoxification function of the liver against the background of echinococcosis.

Specific symptoms that are characteristic of liver echinococcosis are nausea or vomiting, heaviness in the right subcostal area and diarrhea. Nausea, as a rule, develops after eating fatty, fried and spicy food. Discomfort in the right side of the abdomen bothers after eating or against the background of physical activity. Patients with echinococcosis of the liver periodically note diarrhea, which is associated with a violation of digestion of fatty acids in the intestine due to inhibition of bile production by hepatocytes.

### Third stage

At the third stage of development, echinococcosis of the liver is manifested by complications that are associated with a violation of the integrity of the echinococcal cyst and the spread of parasite eggs to other organs. As a rule, when the parasite enters the bloodstream, an allergic reaction occurs, which is accompanied by bronchial spasm and the development of respiratory failure. In addition, echinococcus can spread to the bone tissue, brain, lungs and other organs, causing a violation of their functions.

One of the most frequent complications is considered to be suppuration of the cyst contents, which, when ruptured, can escape into the abdominal or pleural cavity, causing purulent peritonitis or pleurisy. If the cystic cavity is large, it may impinge on nearby vessels and bile ducts. Of the blood vessels, the portal vein is most often squeezed, which is manifested by an increase in pressure in the venous system of the abdominal organs. As a result, the spleen increases and ascites appears. More rarely, the echinococcal cyst squeezes the inferior vena cava, which leads to the development of heart failure. This complication is expressed by dyspnea, edema of the lower extremities, renal dysfunction and impaired blood supply to internal organs. A frequent complication of echinococcosis of the liver is compression of the biliary tract, which is accompanied by a violation of bile outflow.

### Diagnosis

To diagnose echinococcosis of the liver, laboratory and instrumental methods of examination are used. A thorough questioning of the patient is also carried out, which allows you to clarify the possible ways of infection with this parasite. As a rule, a high risk of the disease is noted in people who are engaged in agriculture and often in contact with domestic animals.

**Laboratory diagnostics.** A general blood test, clinical urinalysis, immunologic tests (complement binding reaction, indirect agglutination reaction) and Cazzoni allergy test are performed. In the general blood count, there is an increase in the number of eosinophils and an increase in the



erythrocyte sedimentation rate. Immunologic tests are used to determine the presence of antibodies to echinococcus in the blood and cyst contents. It is they that make it possible to accurately diagnose echinococcosis of the liver. Since hepatocyte function may be impaired in this disease, liver biochemical tests are performed to assess it.

**Instrumental diagnostics.** Of the instrumental methods, an important role is played by ultrasound of the liver and gallbladder, review radiography of the abdominal cavity, magnetic resonance imaging and single photon emission computed tomography of the liver (SPECT of the liver). These imaging examination techniques will identify the cyst and determine its size. They can also assess the size of the liver, visualize dilated bile ducts, enlarged spleen or ascites.

**Invasive diagnosis.** In order to obtain the contents of the cyst and detect parasites, a puncture biopsy of the liver is recommended - but only with the observance of a technique that excludes the contamination of surrounding tissues with echinococcus larvae. Laparoscopy can be used as an invasive technique to directly examine the abdominal organs with a video endoscope.

### References

1. Kudratova Z. E. et al. Current modern etiology of anemia //Open Access Repository. – 2023. – Т. 10. – №. 10. – С. 1-4.
2. Burxanova D. S., Umarova T. A., Kudratova Z. E. Acute myocarditis linked to the administration of the COVID 19 vaccine //Центральноазиатский журнал образования и инноваций. – 2023. – Т. 2. – №. 11. – С. 23-26.
3. Кудратова З. Э. и др. Атипик микрофлора этиологияли ўткир обструктив бронхитларнинг ўзига хос клиник кечиши //Research Focus. - 2022. - Т. 1. - №. 4. - С. 23-32.
4. Kudratova Z. E., Normurodov S. Etiological structure of acute obstructive bronchitis in children at the present stage - Thematics Journal of Microbiology, 2023. P.3-12.
5. Kudratova Z. E., Tuychiyeva S. K. Atipik mikroflora etiologiyali o'tkir obstruktiv bronxitlar etiopatogenezing zamonaviy jixatlari. Research Focus, 2023, B. 589-593.
6. Kudratova Z. E., Karimova L. A. Age-related features of the respiratory system. Research Focus, Tom 2, P. 586-588.
7. Исмадинова Л. К., Даминов Ф. А. Современная лабораторная диагностика хронического пиелонефрита у детей //Journal of new century innovations. – 2024. – Т. 49. – №. 2. – С. 112-116.
8. Isomadinova L. K., Daminov F. A. Glomerulonefrit kasalligida sitokinlar ahamiyati //Journal of new century innovations. – 2024. – Т. 49. – №. 2. – С. 117-120.
9. Isomadinova L. K., Qudratova Z. E., Shamsiddinova D. K. Samarqand viloyatida urotillaz kasalligi klinik-kechishining o'ziga xos xususiyatlari //Центральноазиатский журнал образования и инноваций. – 2023. – Т. 2. – №. 10. – С. 51-53.
10. Isomadinova L. K., Qudratova Z. E., Sh B. F. Virusli gepatit b fonida Covid-19 ning klinik laborator kechish xususiyatlari //Journal of new century innovations. – 2023. – Т. 30. – №. 3. – С. 60-65.





11. Isomadinova L. K., Yulayeva I. A. Buyraklar kasalliklarning zamonaviy diagnostikasi //Центральноазиатский журнал образования и инноваций. – 2023. – Т. 2. – №. 10 Part 3. – С. 36-39
12. Kudratova Zebo Erkinovna, Tamila Abdufattoevna Umarova, & Sirojeddiova Sanobar. (2024). Modern types of immunoenzyme analysis methods old problems. Web of Discoveries: Journal of Analysis and Inventions, 2(6), 67–70.
13. Набиева Ф. С., Мусаева Ф.Р. Лабораторная диагностика острого гломерулонефрита //Journal of new century innovations. – 2023. – Т. 30. – №. 3. – С. 150-152.

