

Echinococcus granulosus

Echinococcus granulosus belongs to the tapeworms (*Cestoda*). They cause tissue infections such as **hydatidosis** and **cystic echinococcosis**. It is a small parasite (2-10 mm) transmitted alimentary. Since man is not the definitive host, the parasite does not remain in the digestive tract but travels through the host's body. *Echinococcus* is cosmopolitan. 2-3 million people are infected each year.

Infectious agent: eggs in beast droppings (100-1500 pcs / proglottides / day), eggs are resistant to the external environment and are immediately infectious.

⚠️ They cannot be morphologically distinguished from *Taenia* eggs!

Occurrence

- **Europe:** highest incidence in sheep breeding areas.
- **Outside Europe:** East Africa and South America, China.
- **No risk of infection:** Iceland and Greenland.

Life cycle

Adults live in the gut of **canines**, which are the definitive hosts for parasites. Eggs come out of the body with dung. The intermediate hosts are **herbivores** and **humans**. After ingestion, an embryo is released from the egg in the digestive tract and penetrates the blood. Then the embryo travels through the body to any organ: the liver, lungs, brain, bones, skeletal muscle, kidneys, spleen, subcutaneous tissue. In that organ, it transforms into a **slow-growing cyst**, which can reach a size of 15 cm or more.

Clinical signs

Clinical symptoms are **variable** - depending on the location of the cysts, their size and the overall allergic reaction of the intermediate host. Cysts **grow slowly** and therefore the disease has an asymptomatic course for several years (up to about 5 cm). The symptoms appear at a time when the bulge, by its size, disrupts the function of the affected organ. The **liver, lungs, brain, bone, kidneys** are most often affected.

Symptoms by cyst location:

- abdominal pain;
- shortness of breath, chest pain, blood in sputum;
- chronic cough, pneumothorax, pleurisy, pulmonary abscesses, parasitic pulmonary embolism;
- neurological symptoms;
- enlarged liver, jaundice, ascites;
- gradual weight loss, while maintaining appetite.

⚠️ If the cyst ruptures, the patient faces an **allergic reaction, anaphylactic shock, and death**.

After overcoming anaphylactic shock, daughter cysts may be disseminated and **generalized echinococcosis** may develop.

Diagnosis

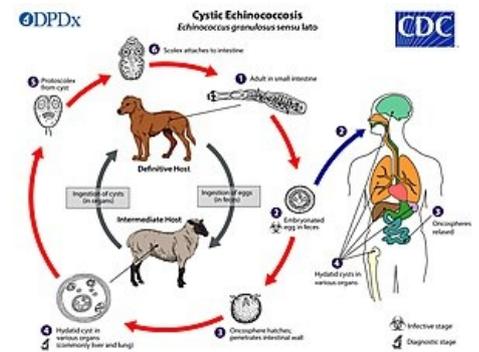
- Anamnesis, clinical symptoms, imaging methods
- Serology - detection of antibodies
- X-ray, sonography, CT - evidence of cysts

Therapy

- Albendazol, mebendazolol - only parasitostatic effect
- Surgical removal of cysts



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Echinococcus gran LifeCycle Ig

Links

Related articles

- Echinococcus multilocularis
- Hydatid disease

References

- VOLF, Petr a Petr HORÁK. *Paraziti a jejich biologie*. 1. vydání. Praha : Triton, 2007. 318 s. s. 103–104. ISBN 978-80-7387-008-9.

Literature

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- KOLÁŘOVÁ, Libuše. *Alimentární infekce 2* [online]. [cit. 2012-02-20]. <http://tropy.lf1.cuni.cz/Data/files/TROPY/Prezentace_EN/echinococcus-2010-web.pdf>.
- BEDNÁŘ, Marek, A SOUČEK a V FRAŇKOVÁ, et al. *LÉKAŘSKÁ MIKROBIOLOGIE : Bakteriologie, virologie, parazitologie*. 1. vydání. Brno : Triton, 1996. 560 s. ISBN 859-4-315-0528-0.