Echinococcosis

disease transmitted to humans

bioveta

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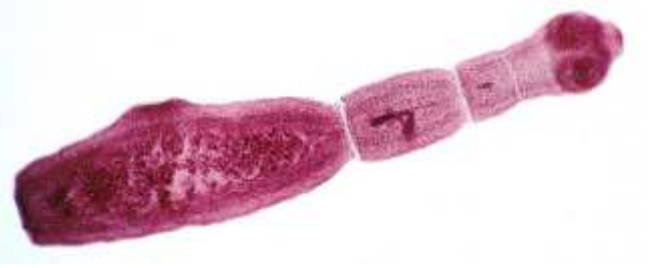
Echinococcus (hydatid worm)

is a genus of tiny tapeworms of the Taeniidae family with a typical two-host life cycle. Beasts of prey (Canidae, less Felines) are the definitive host of the tapeworms of the genus Echinococcus, and even-toed ungulates, rodents and odd-toed ungulates are understood the intermediate host as a rule. The most important species are *E. granulosus* and *E. multilocularis*, by which the humans can also be infected as a random intermediate host. These species cause severe disease - echinococcosis. Total length of the adult is only a few millimetres (2–10 mm). Body of an adult echinococcus consists of a scolex (head) and usually only 3-4 segments (proglottids). Scolex is equipped with 4 suckers and one row of small hooks serving for attachment to the mucosa in the intestine. Echinococcus adults are localized in the small intestine of the definitive host (e.g. a dog), and the infection is free from any symptoms. In contrast, the larval stages (cysts) are found in organs (liver, lungs, brain) of the intermediate host (including humans), they can grow to a large extent, and infections, especially in humans, usually end fatally.



Echinococcosis occurs only in the northern hemisphere, especially in the temperate and subpolar zone of virtually all of Europe, North America and Asia.

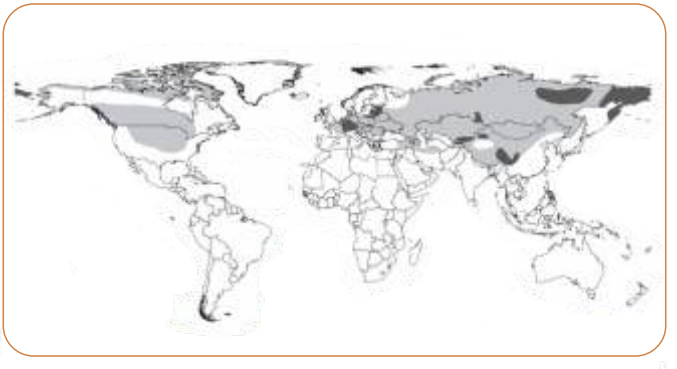
Map of occurrence of Echinococcosis in dogs:

Danger hidden in fields, gardens and forests

The dogs are infected by ingesting raw meat of sheep or wild boars that contain a metacestode. Cats are infected when hunting intermediate hosts, which are rodents, especially voles and mice. In the wild, fox is the main definitive host and source of eggs, but both the cat and the dog moving freely in nature bring echinococcosis from nature and from the forested areas near to the human dwellings. Especially in close contact, when petting and stroking, one can accidentally eat eggs that are on the animal coat. Alveolar echinococcosis is manifested by cyst formation in humans, especially in the liver or CNS. Prognosis of alveolar echinococcosis is cautious, as metastases, often in the vena cava or bile ducts, occur in up to 20% of patients even if the cyst was removed successfully.

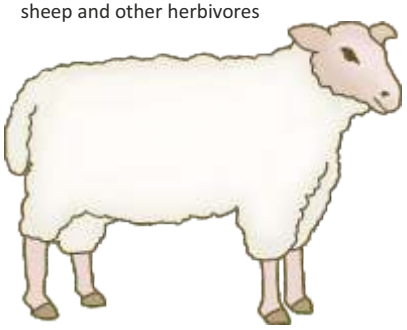
Though, according to some studies, dog is the main source of eggs for humans, role of the cat, which more often hunts rodents and wanders freely in nature, where the eggs from the soil can be caught in the hair, is not negligible. The study, named Prevalence of Echinococcus multilocularis in out door cats in West Bohemia (Czech Republic), prof. MVDr. V. Svobodová and MVDr. B. Lenská, published in Helminthologia (2004), has confirmed positivity in 3.75% of cats, in 80 stool samples, by applying the Echinotest Bommeli. In Germany, the positivity is lower, only about 0.25%, but with the cat population of 7.9 million, there are 18,000 definitive hosts and sources of infection for humans!

Map of occurrence of Echinococcosis in dogs (grey colour). High incidence of Echinococcosis in humans (black colour).

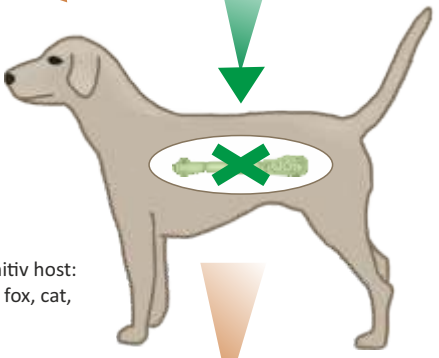


Life cycle of tapeworm
Echinococcus multilokularis

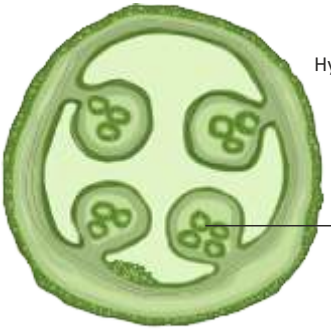
Intermediate host:
sheep and other herbivores



Cyst in esp. liver



Definitiv host:
dog, fox, cat,



Hydatid cyst

Scolex

Ovum
30 - 37 µm

Adult

30 – 36 hooks
in two rows

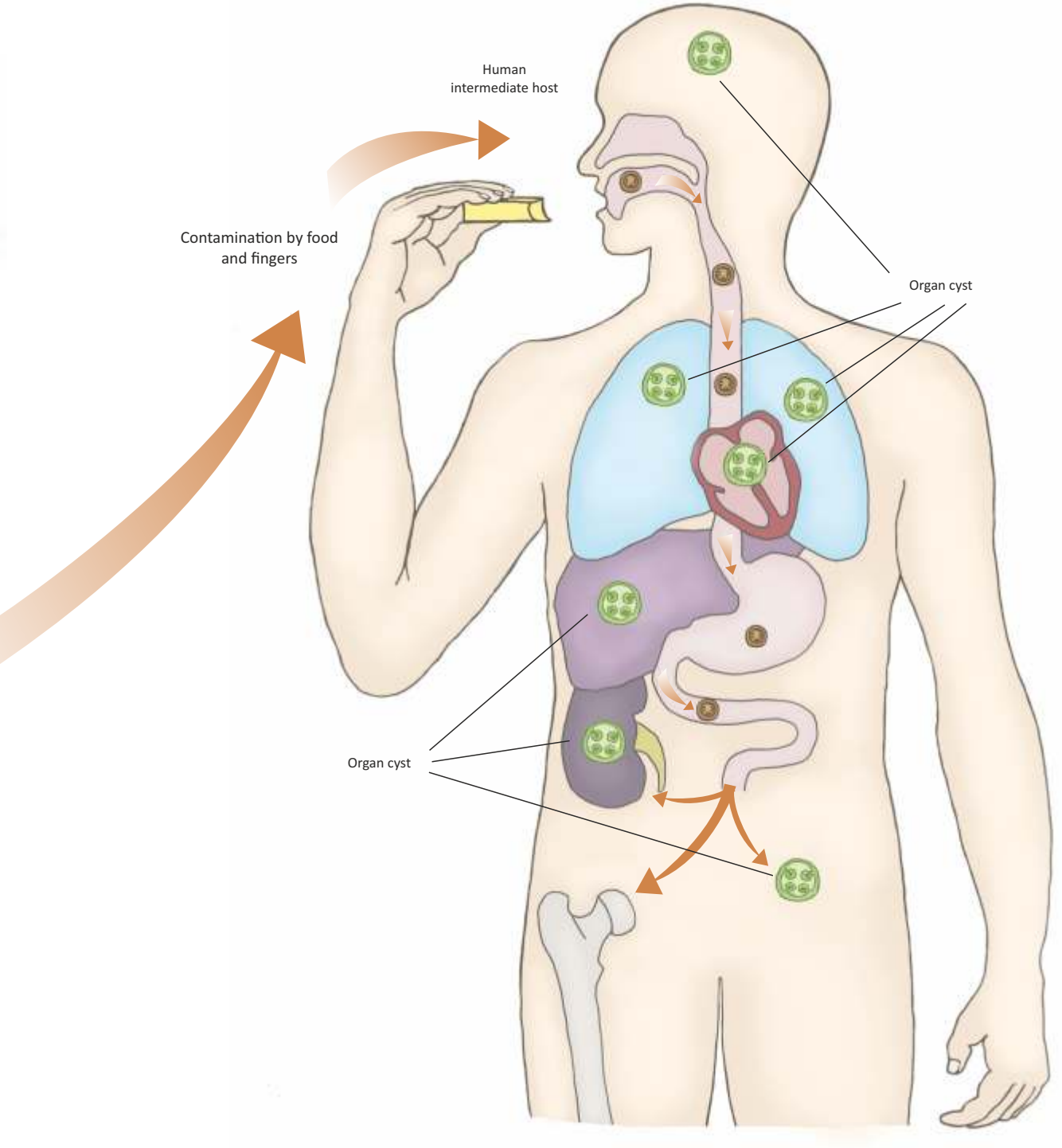
4 suckers

proglottids

lenght 3 – 8 mm

Protoscolices

Evaginated
on entry into host


Human
intermediate host
Contamination by food
and fingers
Organ cyst
Organ cyst

Prevention

Preventive measures include regular dehelmintization of dogs, foxes and cats, and fox catching in endemic regions. Caniverm is the first choice drug to prevent and control occurrence of Echinococcosis in dogs and cats.

Prevention and treatment of infestation of carnivores by Echinococci is ensured by regular dehelmintization in 4-6 week periods. By administering Caniverm according to the recommended dosage (1tbl to 5-10kg) at 4-6 week intervals, prevention and treatment of Echinococcosis in dogs and cats is both effective and safe. Praziquantel contained in Caniverm is an effective drug without any recorded resistance in Echinococci.

The following is also recommended:

- dehelmintization of all animals living in the group, especially in breeding stations and shelters
- dehelmintization of dogs and cats before and after returning into the region with occurrence of Echinococcosis
- feeding by heat treated meat
- restricting free movement of the dog in the forest
- regular removal of animal faeces

Caniverm®

forte tablets

Active substances in one tablet:
Fenbendazolum – 150 mg,
Pyranteli embonas – 144 mg,
Praziquantelum – 50 mg.

DOSAGE:
It is recommended to deworm the offspring from **3 to 12 weeks of age**, one dose in the interval of 3 weeks and then regularly every 3 months.

Puppies, small breeds of dogs and cats: 1/2 tablet 0.7 g for 2 - 5 kg bw.

Medium breeds of dogs: 1 tablet 0.7 g for 5-10 kg bw.

Large breeds of dogs and large carnivores: 1 tablet of 0.7 g per 10 kg bw.

Method of administration: orally.

Caniverm®

mite tablets

Active substances in one tablet:
Fenbendazolum – 37,5 mg,
Pyranteli embonas – 36,0 mg,
Praziquantelum – 12,5 mg.

DOSAGE:
It is recommended to deworm the offspring from **3 to 12 weeks of age**, one dose in the interval of 3 weeks and then regularly every 3 months.

Puppies, small breeds of dogs and cats:
1 tablet 0.175 g for 0.5 – 2 kg bw.
2 tablets 0.175 g for 2 – 5 kg bw.

Method of administration - orally.

INDICATIONS: Diseases caused by roundworms and tapeworms of dogs, cats, felines and canines. (*Toxocara canis, Toxocara cati, Toxascaris leonina, Uncinaria stenocephala, Ancylostoma caninum, Trichuris vulpis, Echinococcus granulosus, Echinococcus multilocularis, Dipylidium caninum, Taenia spp., Multiceps multiceps, Mesocestoides spp.*).

CANIVERM

oral paste

Caniverm oral paste. Antihelminthic drug for dogs and cats.

1 ml OF THE PASTE CONTAINS:
Active ingredients:
Fenbendazolum 75 mg,
Pyranteli embonas 72 mg,
Praziquantelum 25 mg

Target species:
Dog, cat, including the young ones.

Dosage:
Cat:
0.5 ml paste per 0.5 - 2 kg of body weight.
1 ml paste per 2 - 5 kg of body weight.
Dog:
Puppies, small canine breeds:
0.5 ml of paste per 0.5 - 2 kg of body weight
1 ml paste per 2 - 5 kg of body weight.

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