Food and Agriculture Organization of the United Nations

OIE WORLD ORGANISATION FOR ANIMAL HEALTH

World Health Organization

Foodborne parasitic infections

FASCIOLIASIS

(Liver fluke)

Introduction

Fascioliasis is caused by two species of flatworms that mainly affect the liver: *Fasciola hepatica* and *Fasciola gigantica*.

At least, 2.4 million people are infected in more than 70 countries worldwide, with several million at risk, especially where sheep or cattle are reared.

In general, fascioliasis is more common and widespread in animals than in humans.

Transmission and risk factors

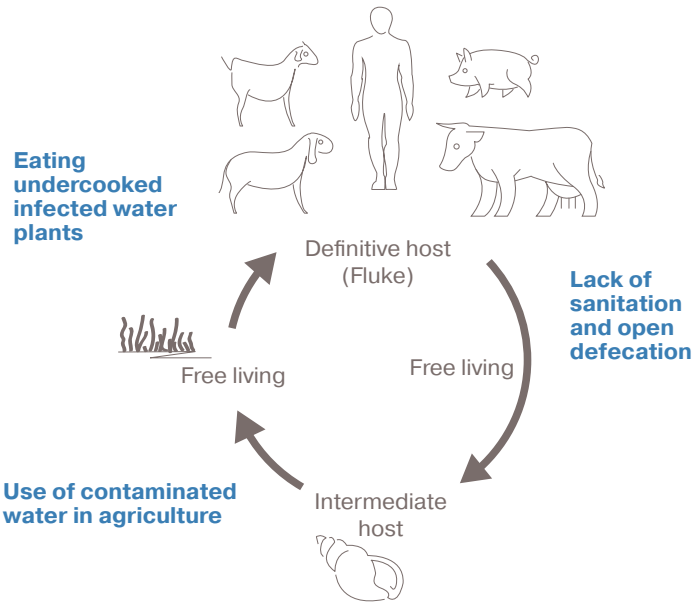
The life cycle of the disease involves definitive host (in which the adult worm lives), an intermediate host (in which the larval stages of the worm develop) and a carrier (entailing suitable aquatic plants).

The process begins when **an infected animal** (cattle, sheep, buffaloes, donkeys and pigs but also horses, goats, dromedaries, camels, llamas and other herbivores) **defecates in fresh-water sources** and **contaminates the water** with the parasites' eggs.

The eggs hatch into first-stage larvae (miracidia) and lodge in water snails.

The larva reproduces asexually inside the snail and releases more larvae into the water that can swim to nearby aquatic or semi-aquatic plants and form small cysts (metacercariae).

Animals and humans are infected through **ingestion of the water plants** with metacercariae or **free metacercariae floating in contaminated water.**



Signs and symptoms

After infection, individuals experience a symptomless incubation period lasting a few days to a few months, followed by an acute and a chronic clinical phase.

Symptoms of the **acute phase** include fever, nausea, a swollen liver, skin rashes and extreme abdominal pain.

Symptoms of the **chronic phase** include intermittent pain, jaundice and anaemia. Long-term inflammation can lead to fibrosis.

In animals, clinical signs depend on the species of animal affected, the number of parasites and the phase of the parasite. Disease can be acute, sub-acute or chronic.

Detection and diagnosis

Diagnosis may be based on the clinical picture, an individual's recall of consuming raw vegetables, the detection of eosinophilia or on the findings of ultrasound or tomography scans. Confirmation of diagnosis requires parasitological, immunological and molecular techniques.

In animals, diagnosis is based on clinical signs, microscopy, and necropsy. Immunological techniques can also be used.

Treatment

Triclabendazole, the only medicine recommended by WHO against human fascioliasis, is active against both immature and adult parasites, and may therefore be employed during the acute and chronic phases.

Cattle and sheep can be treated with several drugs including triclabendazole, closantel and nitroxynil.

Public health prevention and control

1. **Preventive chemotherapy** with a single oral dose of triclabendazole in communities where cases are clustered, targeting either school-aged children, usually with the highest prevalence of infection, or the entire community
2. **Prevention and control in animals**
   - Improved animal husbandry, stall feeding
   - Treatment of domestic animals
3. **Snail control**
4. **Water, sanitation and hygiene (WASH)**
5. **Risk communication** cultivation of vegetables in water free from faecal contamination and thorough washing and cooking of vegetables before consumption

www.who.int/health-topics/foodborne-trematode-infections

www.oie.int/diseasecard_fasciola

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