Trends in Parasitology | Parasite of the Month

Clonorchis sinensis

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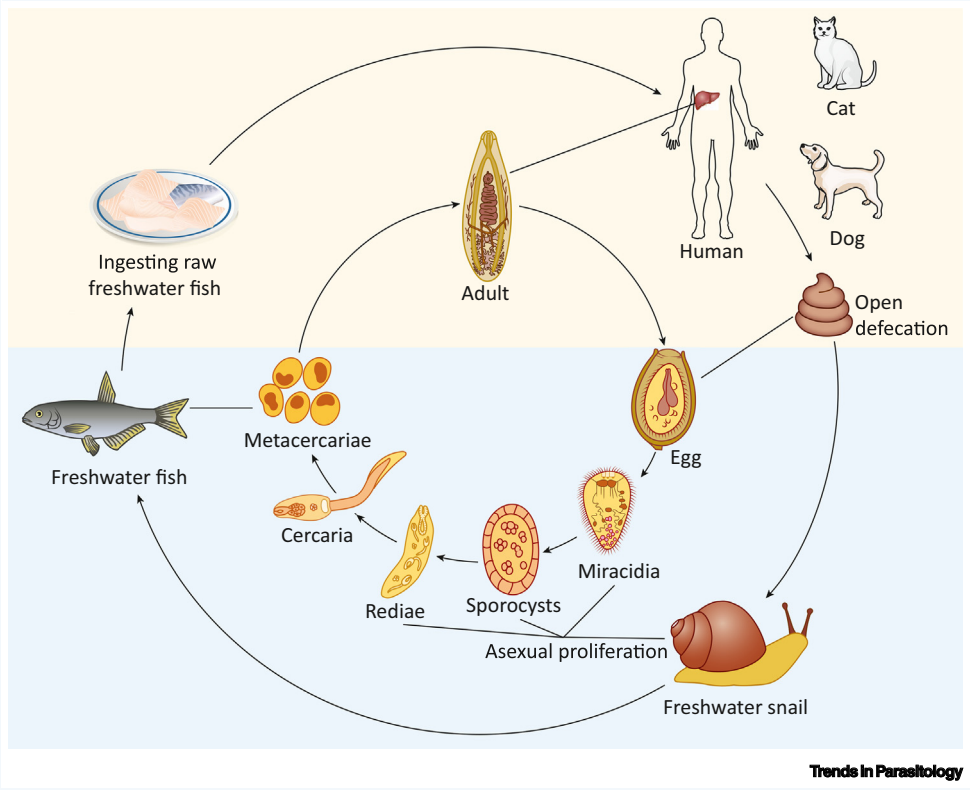
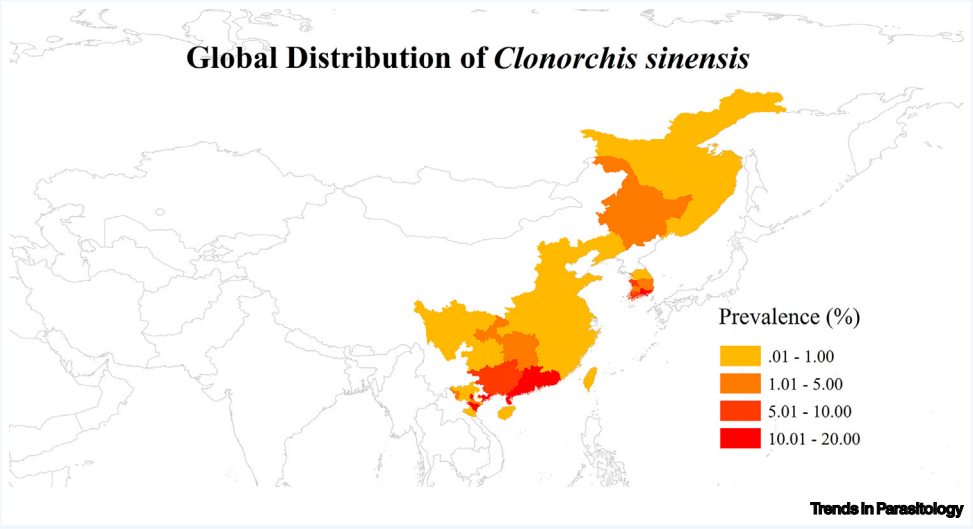


The life cycle of *Clonorchis sinensis* involves freshwater snails and fishes as intermediate hosts and humans and piscivorous animals as definite hosts. Humans are infected through ingestion of raw or undercooked freshwater fish containing *C. sinensis* metacercariae. Around 15 million people are infected in China, South Korea, northern Vietnam, and far east of Russia. A high burden is exerted due to diverse hepatobiliary morbidity (e.g., cholangitis, cholecystitis, cholelithiasis, and cholangiocarcinoma). A vaccine is not currently available. Chemotherapy for morbidity control is the mainstream intervention against clonorchiasis. Mass drug administration is adopted in high endemic areas, while selective chemotherapy is used in moderately endemic areas, targeting those ingesting raw freshwater fish. Environmental modification to block feces contamination and education to promote behavioral change on raw-eating habits are needed to increase the effectiveness and sustainability of control.



KEY FACTS:

The *C. sinensis* genome has a size of 550–560 Mb, containing 13 000–15 000 protein-coding genes.

Geographical distribution varies highly due to the different distribution of first intermediate hosts and habits in ingesting raw freshwater fish.

Piscivorous animals, especially dogs and cats, participate in the circulation, increasing the challenge to block transmission.

The practice of ingesting raw freshwater fish in children is highly influenced by their parents' practice.

Excretory–secretory products play important roles in pathogenesis and carcinogenesis and they could be used as markers in serological diagnosis.

DISEASE FACTS:

Adult worms can live in human bodies for up to 20 years and thus cause persistent damage. Morbidity is related to worm burden, indicated by eggs in feces.

High infection and intensity as well as subsequent morbidity are presented in adults, especially men, due to frequent ingestion of raw freshwater fish.

Infection is carcinogenic, causing ~5000 human cholangiocarcinoma cases annually.

Detection of eggs in feces is the gold standard for diagnosis. Immunological tests, imaging techniques, and molecular methods are also useful.

Praziquantel is recommended for both individual treatment and population chemotherapy, while albendazole is also efficacious as an alternative.

TAXONOMY AND CLASSIFICATION:

PHYLUM: Platyhelminthes
CLASS: Trematoda
ORDER: Opisthorchiida
FAMILY: Opisthorchiidae
GENUS: *Clonorchis*
SPECIES: *C. sinensis*

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Acknowledgments

We modified published figures from Qian *et al.* [5].

Declaration of interests

The authors declare no competing interests.

Resources

www.cdc.gov/dpdx/clonorchiasis/index.html
www.who.int/health-topics/foodborne-trematode-infections#tab=tab_1
https://parasite.wormbase.org/species.html

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