Trends in Parasitology | Parasite of the Month

Mansonella ozzardi

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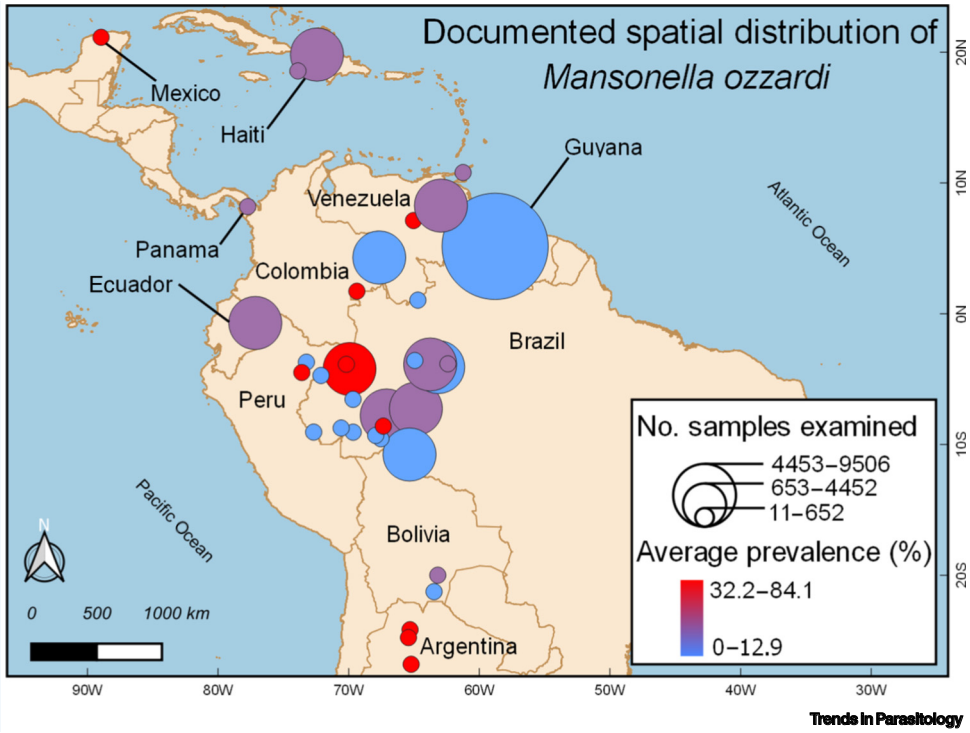
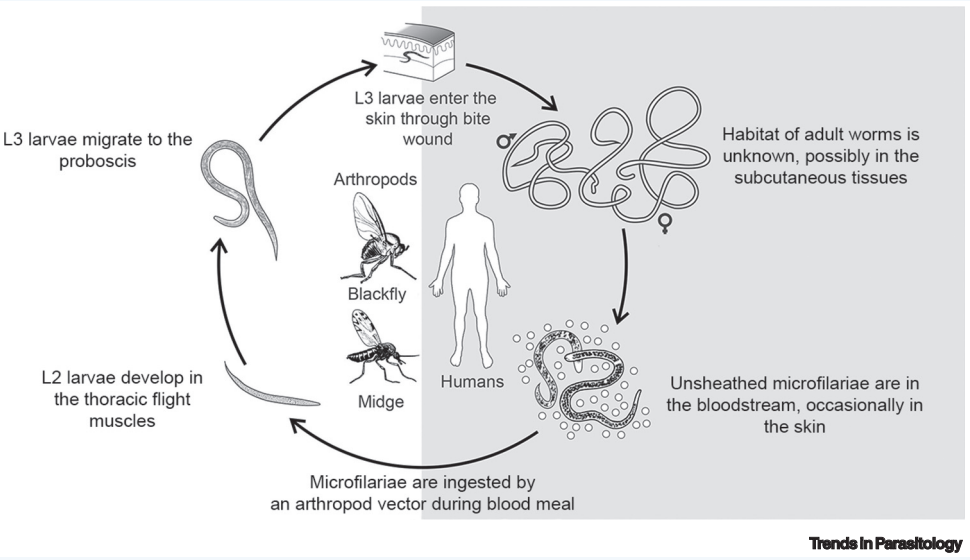


The human filarial nematode *Mansonella ozzardi* occurs widely in the Neotropical region from southern Mexico to northwestern Argentina. It causes mansonellosis and is transmitted by blackflies of the genus *Simulium* and biting midges of the family Ceratopogonidae. The embryonic unsheathed microfilariae with sharp, unnucleated tails are detectable in the blood (and occasionally in the skin) 1 day after being released by the fertilized adult female worms. After being ingested by a vector, the microfilariae reach the insect's thoracic musculature through the hemocoel and develop, after two moults, into infective L3 larvae that migrate to the head and mouth parts of the vector. Cross-sectional surveys in endemic areas show an increase in both *M. ozzardi* prevalence and microfilarial load with patients' age until they reach their 60s. Most cases of mansonellosis appear to be asymptomatic, but mild symptoms and a recently recognized ocular pathology have been associated with this infection.



KEY FACTS:

The synonymous terms mansonellosis and mansonelliasis were exclusively used for *M. ozzardi* infections until the taxonomic revisions in the 1980s included other human filarial parasites in the genus *Mansonella*.

Nuclear genome 80 Mb, with 9000 predicted genes; circular mitogenome 13.6 kb.

M. ozzardi harbors superclade F *Wolbachia* endosymbionts, with potential therapeutic implications.

Although filarial nematodes typically downregulate host immunity to limit inflammation-mediated tissue damage, such effect remains to be demonstrated for mansonellosis.

In endemic areas, infection rates are the lowest in urban areas, among women and the young, being linked to increased exposure to infectious vector bites.

DISEASE FACTS:

Most infections are asymptomatic, but fever, headache, joint pain, lower-limb chills, and ocular lesions may occur.

The overall disease burden and the visual impairment caused by ocular lesions have not yet been quantified.

Diagnosis is usually done with light microscopy, sometimes with concentration methods. PCR and loop mediated isothermal amplification (LAMP) can improve diagnostic sensitivity and specificity.

An ivermectin dose of 0.15 mg/kg clears microfilariae but not adult worms.

Future curative treatments may come from *Wolbachia*-targeting drugs currently being developed for onchocerciasis and lymphatic filariasis.

TAXONOMY AND CLASSIFICATION:

PHYLUM: Nematoda
CLASS: Chromadorea
ORDER: Rhabditida
FAMILY: Onchocercidae
GENUS: *Mansonella*
SPECIES: *M. ozzardi*

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Resources

www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?mode=Info&id=122354&lvl=3&lin=f&keep=1&srchmode=1&unlock
www.cdc.gov/dpdx/mansonellosis/index.html
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