Schistosomiasis Microlearning FAQ & Supplemental Information

MINNESOTA CENTER OF EXCELLENCE IN NEWCOMER HEALTH MICROLEARNING SERIES

Presumptive treatment

When did CDC start presumptive schistosomiasis treatment for U.S.-bound refugees from sub-Saharan Africa?

Presumptive Praziquantel treatment was initiated in 2010. The majority of sub-Saharan refugees receive treatment before departure to the United States, unless it is contraindicated. The recommended dose is 40 mg/kg orally as a single dose or divided in two doses (maximum dose 3000 mg).

Pre-departure treatment should be documented on the pre-departure medical screening form. If treatment was not administered, this should be clearly indicated along with the reason that treatment was not administered.

CDC: Guidance for Overseas Presumptive Treatment of Strongyloidiasis, Schistosomiasis, and Soil-Transmitted Helminth Infections for Refugees Resettling to the United States (www.cdc.gov/immigrant-refugee-health/hcp/overseas-guidance/intestinal-parasite-guidelines.html)

Screening

Is screening of asymptomatic refugees recommended?

- Serologic screening is only indicated for newcomers from sub-Saharan Africa who did not receive overseas presumptive praziquantel treatment
- Screening is not indicated among newcomers from any other endemic regions (other than sub-Saharan Africa).

Clinical presentation

How long can schistosomiasis infection last?

Chronic and untreated infection may persist for many years. The longevity of the infection is due to the ability of adult worms to evade the host's immune system and persist in the bloodstream.

Aside from intestinal and genitourinary symptoms, are there any other possible clinical presentations of chronic schistosomiasis?

Yes, chronic **s**chistosomiasis can present as:

- Pulmonary hypertension caused by embolization of worms or eggs into the pulmonary circulation. This is mostly caused by *S. mansoni, S. haematobium* and *S. japonicum*.
- Neuro-schistosomiasis (e.g., transverse myelitis, brain parenchymal lesions) is caused by embolization of worms or eggs into the spinal cord or brain. These infections are mostly caused by *S. mansoni, S. haematobium* (myelopathy), and *S. japonicum* (brain lesions).

Diagnosis: Additional information

- **Serologic testing** may not be appropriate for determining active infection in patients who have been repeatedly infected and treated in the past, given that serology may remain positive > two years after treatment. If the IgG serology test is reported as quantitative, the titer does not correlate with parasitic burden.
- **Microscopic detection** of eggs in stool or urine is the gold standard for diagnosis given that the eggs of different species have a different microscopic morphology and therefore allows for speciation of sub-type. However, due to an often low parasitic burden and less consistent egg shedding (e.g., asymptomatic chronic infection), microscopic identification of parasite eggs in stool or urine is unreliable.
- **PCR of Schistosoma DNA** (in urine, stool, and serum) outperform parasitological and serological methods given that it is more sensitive and specific, but not widely available.
- **Antigen detection assay**, which detects circulating antigens in serum or urine, is not available in the U.S.
- **Imaging** (e.g., ultrasound, CT) may be helpful to assess thickened bladder wall, hydroureter, or hepatosplenomegaly.
- **CDC serology** is recommended only for confirmation of infection and speciation for symptomatic cases. CDC assays consist of three species-specific immunoblots (Western Blot) using nitrocellulose strips containing electrophoresed antigens separated by molecular weight that detects *S. mansoni*-, *S. haematobium*-, and *S. japonicum*-specific IgG human antibodies which react with adult worm microsomal antigens. CDC has the following requirements for testing:
  - Appropriate exposure history, and
  - Previous laboratory test results and/or clinical indications consistent with schistosomiasis (e.g., symptoms, radiographic or ultrasound findings, etc.)

Treatment: Additional information

- For treatment of acute schistosomiasis (Katayama fever), contact an Infectious Disease expert.
- For treatment of severe infection, including if any CNS involvement, contact an Infectious Disease expert.
- Praziquantel tablets are rather large and for younger children it may be difficult to swallow and create a potential choking hazard. For children under 6 years of age, the tablets may be crushed and mixed with food or liquid. Chewing is not recommended because of the bitter taste.

Resources

- CDC: Schistosomiasis (www.cdc.gov/schistosomiasis/index.html)
- CDC Yellow Book: Schistosomiasis (www.cdc.gov/yellow-book/hcp/travel-associated-infections-diseases/schistosomiasis.html)

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4/28/25

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