Schistosomiasis

1 Introduction

1.1 Purpose

This clinical guideline is to ensure that patients from a refugee background receive appropriate screening and treatment for Schistosomiasis.

2 Clinical Guideline

2.1 Background

Schistosomiasis is a parasitic disease due to a blood fluke (trematode) which infects the bladder or bowel. There are different species of schistosome, and the sequelae vary depending on the species, parasite load, host response and duration of infection.[1,2]

- Schistosoma haematobium – (Africa, Middle East, Portugal) bladder and bowel
- Schistosoma mansoni – (Africa, Central and South America) bowel & cause of chronic liver disease
- Schistosoma japonicum (China, Indonesia, Japan, Philippines) bowel
- Schistosoma mekongi (Mekong river basin) bowel

This parasite is very common in Africa. The most likely form of this disease varies depending on the origin of the refugee.

2.2 Life Cycle

The cercariae penetrate the skin. It then becomes a schistosomulum which migrates to the blood vessels, lungs and liver. Once in the liver it matures into an adult.[2]
S. mansoni go to the inferior mesenteric veins (also superior mesenteric and intrahepatic part of portal veins) where the male and females mate and after 4-7 weeks, after initial infection, the fully embryonated eggs pass into the stool.
Outside of the human the eggs hatch when they meet water and liberate miracidia that must penetrate a snail host who then liberate cercariae after four weeks. These then infect humans who come in contact with infected water.

2.3 Symptoms

It is not uncommon for these infections to be asymptomatic.
Abdominal pain and diarrhoea may be the presenting symptoms of schistosomiasis infection of the bowel; even blood and mucus may be noted.
Hepatomegaly or hepatosplenomegaly can occur.
Haematuria and other bladder symptoms may be the presenting symptoms of schistosomiasis infection of the bladder.
The cercariae can cause dermatitis with macular-papular rash that can become vesicular.
Acute infection (esp S. mansoni) can cause a serum sickness like illness with fevers: Katayama fever.
Chronic infection with schistosomiasis can lead to chronic bacteraemia with e.g. Salmonella.

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Authors: Dr Margaret Kay and the Clinical Advisory Group (CAG).

Chronic infection with schistomosiasis can cause IUGR in pregnancy.[3]

2.4 Natural history of the disease

It is possible for the refugee with a low parasitic load to clear this disease spontaneously after many years due to the life cycle of the fluke involved but during this time the patient may suffer many problems. The liver problems may add to other concerns with hepatitis and complicate disease presentation. Treatment is very effective and simple so it is worth pursuing.

2.5 Investigation

Schistosomiasis can be suspected if a person from an 'at risk' group has an eosinophilia.
It is diagnosed with positive serology. (Highly sensitive and specific)[1,2]
If serology is **positive**:

- faeces OCP and urinalysis can be done.
- If haematuria is found on urinalysis then urine for OCP can be arranged. These tests can help determine the type of Schistosomiasis found. It is recommended that all positive serology results are treated - even if urine and faeces are negative.
- Medical examination for anaemia, hepatosplenomegaly, obstructive uropathy, spinal cord lesion and perineal granulomas.

The treatment is assumed to be **curative and there is no need for retesting** after the treatment.

2.6 Treatment

The accepted treatment is **praziquantel** (Biltricide)[1,2]
It is best to treat the patient when they have been in Australia **for two months** at least so that no recent infection has occurred and the worms have matured enough to be eradicated effectively.
This medication is available on authority for schistosomiasis.
This medication is **not recommended** for those under two years of age and for nursing or pregnant mothers. In these situations, it is best to discuss the management with an Infectious Diseases Specialist.
Treatment is **contraindicated** in neurocysticercosis, and ocular cysticercosis.
Concomitant administration of **rifampicin** may reduce the serum levels achieved with the medication and is to be avoided.
Praziquantel is partially metabolised by the liver and excreted by the kidneys and use in patients with liver or renal disease needs to be done with specialist advice.

2.7 Dosage

- 20mg/kg per dose for two doses taken four hours apart.
- (30mg/kg per dose for two doses for patients from SE Asia, i.e. two separate doses are needed on the one day.)
- 20-25 kg ¾ tablet per dose
- 26-33 kg 1 tablet per dose
- 34-41 kg 1 ¼ tablets per dose
- 42-48 kg 1 ½ tablets per dose
- 49-56 kg 1 ¾ tablets per dose

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- 57-63 kg 2 tablets per dose
- 64-70 kg 2 ¼ tablets per dose
- 71-78 kg 2 ½ tablets per dose
- 79-86 kg 2 ¾ tablets per dose

These tablets should be swallowed whole with a little liquid, preferably after meals. Bed rest is recommended on day of treatment, since nausea and even vomiting or abdominal pain and dizziness are not uncommon side effects but are more common if the parasite load is high or if the dose is administered incorrectly (and the language barriers that often exist in managing this population can make this a greater risk and needs to be considered in the management). Usually the side effects are transient.
It can interact with other medication using the cytochome P450 system.

2.8 Follow up

After infection the serology tends to remain positive so it is important to be sure the medication was actually taken at a **follow-up appointment**. It is then reasonable to be fairly certain the infection will have cleared.
Treatment is assumed to be **curative and there is no need for retesting** after the treatment.
If faeces or urine OCP tests were positive for schistosomiasis prior to treatment, then these should be repeated 12 weeks after treatment. If they remain positive, then re-treatment is recommended.[4]
Persistent symptoms require further investigation to exclude other pathology.

Document Review and Approval

Person Name / Committee	**Position** (if applicable)	**Function** (Owner | Approve | Review)
Dr Margaret Kay		Document Owner
Dr Clare Nourse	Paediatric Infectious Diseases Consultant, Lady Cilento Children's Hospital	Review
Clinical Advisory Group		Approval

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Dr. Margaret Kay

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