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Schistosomiasis

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Abstract

Schistosomiasis, also known as snail fever, bilharzia, bilharziasis and Katayama fever is a disease caused by parasitic flatworms called genus schistosomes that can cause acute and chronic infection. Schistosomiasis is the second most prevalent tropical disease in the world; Malaria is the first. Theodore Bilharz identified the parasite Schistosoma hematobium in Egypt in 1851. The disease is found mainly in developing countries in Africa, Asia, South America, the Middle East, and the Caribbean and is considered one of many tropical diseases that can be soiltransmitted (or watertransmitted). Many symptoms of schistosomiasis infection frequently include fever, blood in stools or urine, and abdominal discomfort. Chronic schistosomiasis often produces complications in various organ systems (for example, the gastrointestinal system, urinary system, heart, and liver). Currently, there is no vaccine available for schistosomiasis. Preventive treatment, which should be repeated over a number of years, will reduce and prevent morbidity.

Keywords: Parasitic; Morbidity; Bilharzia; Schistosomiasis; Complications; Snail Fever; Chronic Infection.

Introduction

Schistosomiasis is an acute form of freshwater disease caused by parasitic flatworms Schistosomes. This is otherwise known as Bilharzia or Snail fever. Schistosomiasis is considered to be one of the neglected tropical diseases (NTDs). Worldwide over 75 countries were reported with schistosomiasis. It is one of the most devastating disease occurs second only to Malaria. The common biological factor in schistosomal infection in India is the freshwater snails. It can be acute and chronic. In chronic infection, different parts of the body such as the lungs, the nervous system and the brain gets affected as the parasites travel through blood vessels.

Etiology

The following are the most common human infective parasites.

Schistosoma mansoni
S. haematobium
S. japonicum.
Schistosoma mekongi
Schistosoma guineensis and related S. intercalatum

High-Risk Groups

People involved in agricultural, domestic, occupational, fishermen and recreational activities

are more vulnerable to infest with parasites Swimming or fishing in infested water affects school aged children and make them more vulnerable to infection.People using unclean water during daily living.

Incubation Period: 4-6 weeks from the time of infection.

Epidemiology

More than 200 million people are infected worldwide. Tropical and subtropical areas are mainly affected by Schistosomiasis. The peoples living in poor communities without access to safe drinking water and adequate sanitation are mostly affected.

Schistosmiasis infection are prevalent in southern and sub-Saharan Africa, South America and Parts of Southeast Asian countries.

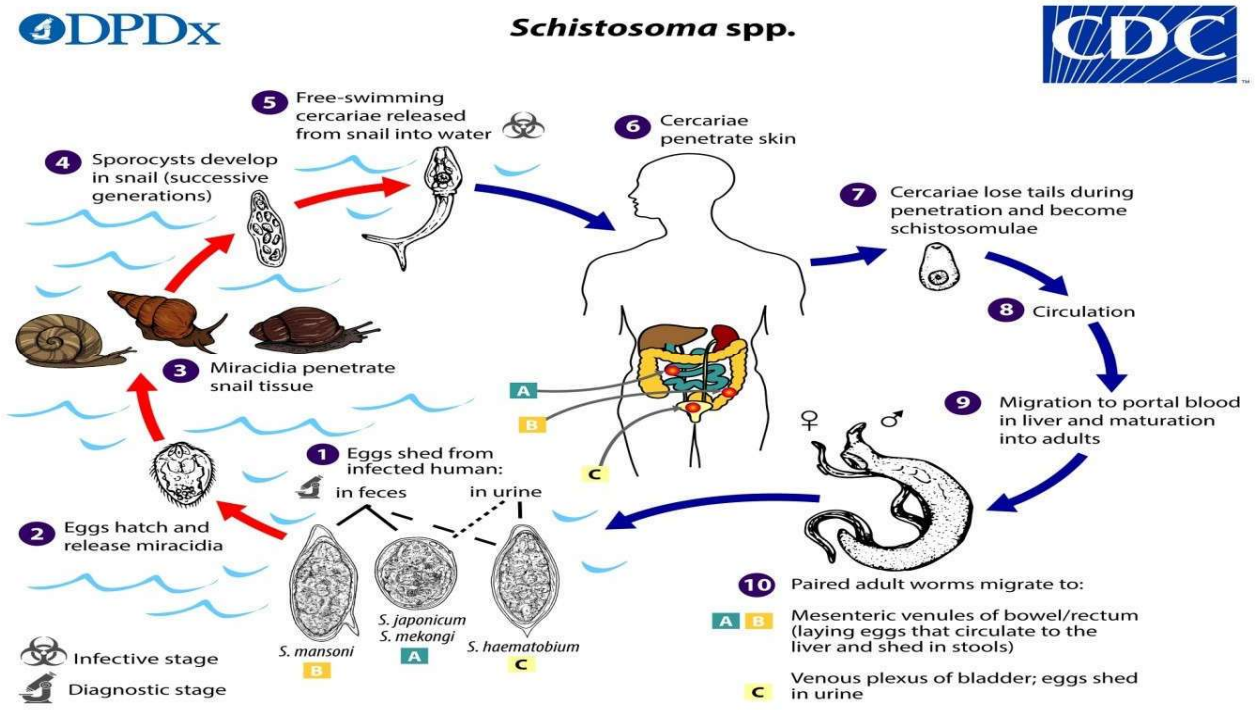

Fig. 1: Infection and Transmission (**Source:** https://www.cdc.gov/parasites/ schistosomiasis/biology.html).

Infection and Transmission

World Health Organisation reported that the direct contact with fresh contaminated water where the snails are living leads to infection. Infected individuals release Schistosoma eggs into water via their fecal material or urine. These eggs hatch larvae which infects the freshwater snails. The cercariaea infective form of the fluke emerge from the snails can survive for up to 48 hours. Once a human host found it enters through the skin and remains in the blood vessels for several weeks and develops into adult worms. When the worms are mature, mating occurs and eggs are produced. Eggs enter the lungs, liver and then to bladder, intestine or both. Worms are excreted through urine and feces and the cycle starts again.

Forms of Schistosomiasis

- Intestinal
- Urogenital

Signs and Symptoms

Fig. 2: Skin blisters on the forearm, created by the entrance of Schistosoma parasites.

Initial symptoms - general feeling of illness

Within 12 hours of infection -"swimmer's itch" develops- a tingling sensation or light rash due to irritation at the point of entrance. It is itchy. Cercariaeappears as small, itchy maculopapu -lar lesions.

2-10weeks later - Symptoms are caused by the body's reaction to the eggs. Acute infection develops mainly the Katayama fever, aching, a cough, eosinophilia, diarrhea, chills, or gland enlargement, abdominal pain, hematuria. Infection can affect the liver, the spleen, the lungs, the spinal cord, the brain, intestines, the urinary system and increasing the risk of bladder cancer. Children who are repeatedly infected may develop Anemia, malnutrition, and learning difficulties.

Enlargement of both the liver and the spleen also develops.

Seizures, paralysis, or spinal cord inflamma -tion develops if eggs migrate to the brain or spinal cord. Occasional embolic egg granulo -mas in brain or spinal cord occurs with S. haematobium schistosomiasis.

Complications

- Liver enlargement
- Fibrosis of the bladder and ureter
- Kidney damage
- Bladder cancer
- Liver and kidney failure
- Infertility.

Diagnosis

- Stool examination Identifies S. mansoni or S. japonicum eggs in the stools.
- Urine examination done for S.haematobium infection.
- Microscopic identification of eggs in stool or urine also done.
- Antibody detection can be useful to identify schistosome infection in people who have travelled to areas where schistosomiasis is common.

Prevention

- Avoiding drinking or contact with contaminated water in areas where schistosomiasis is common.
- Safe water, improved sanitation, hygiene education, and snail control

Treatment

- Praziquantel and Oxamniquine are the most effective drugs used for schistosomi -asis.
- Praziquantel is the most effective and preferable drug. For treating schistosomias –is Praziquantel is administered by mouth as a single dose annually.

Conclusion

Schistosomiasis or Bilharziosis is one of the neglected tropical disease (NTDs)of the world. Poorest population are primarily got affected. As it is the public health concern, in developing countries education needs to be improved to the population.

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