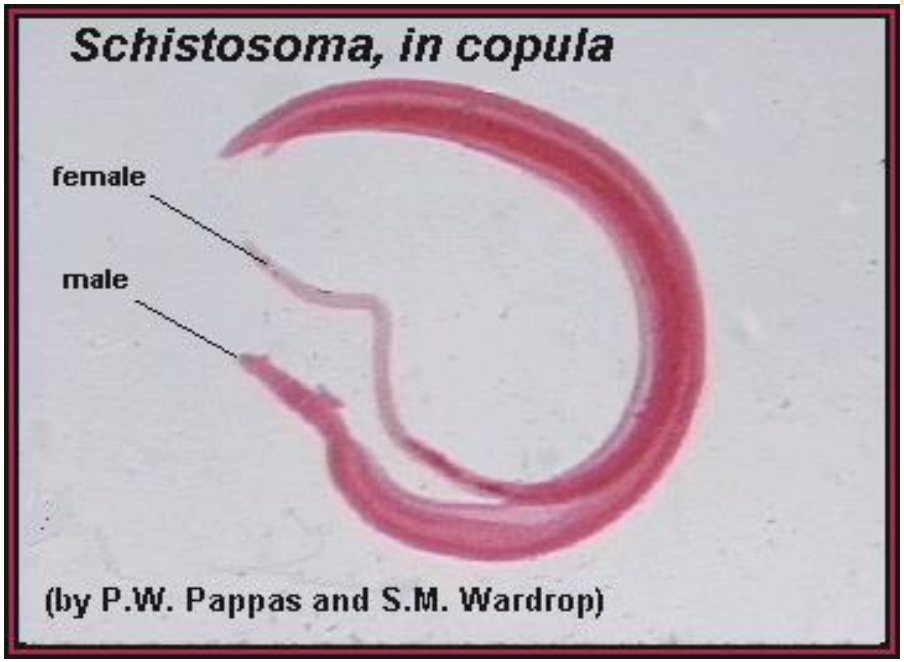
Epidemiologi Schistosomiasis (Bilharziasis/demam keong)

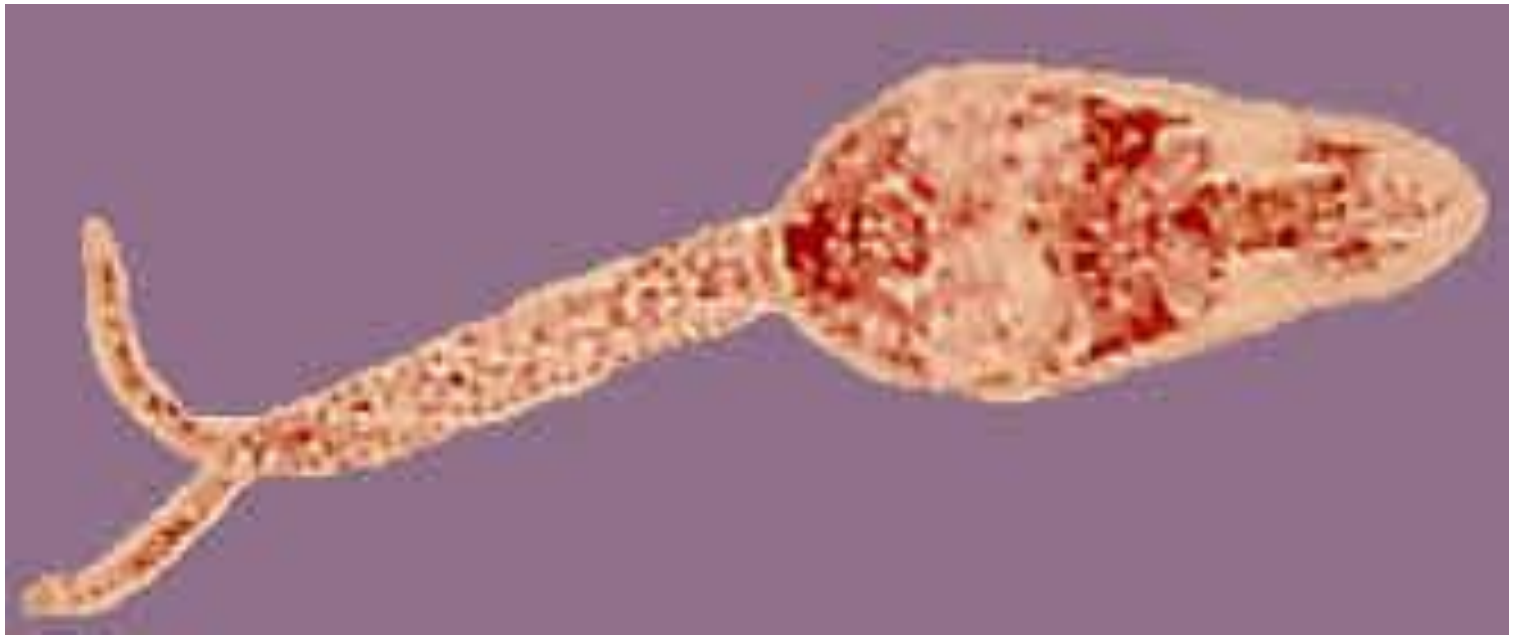
Oleh : Nurul Wandasari S
Program Studi Kesehatan Masyarakat
Univ Esa Unggul 2012/2013

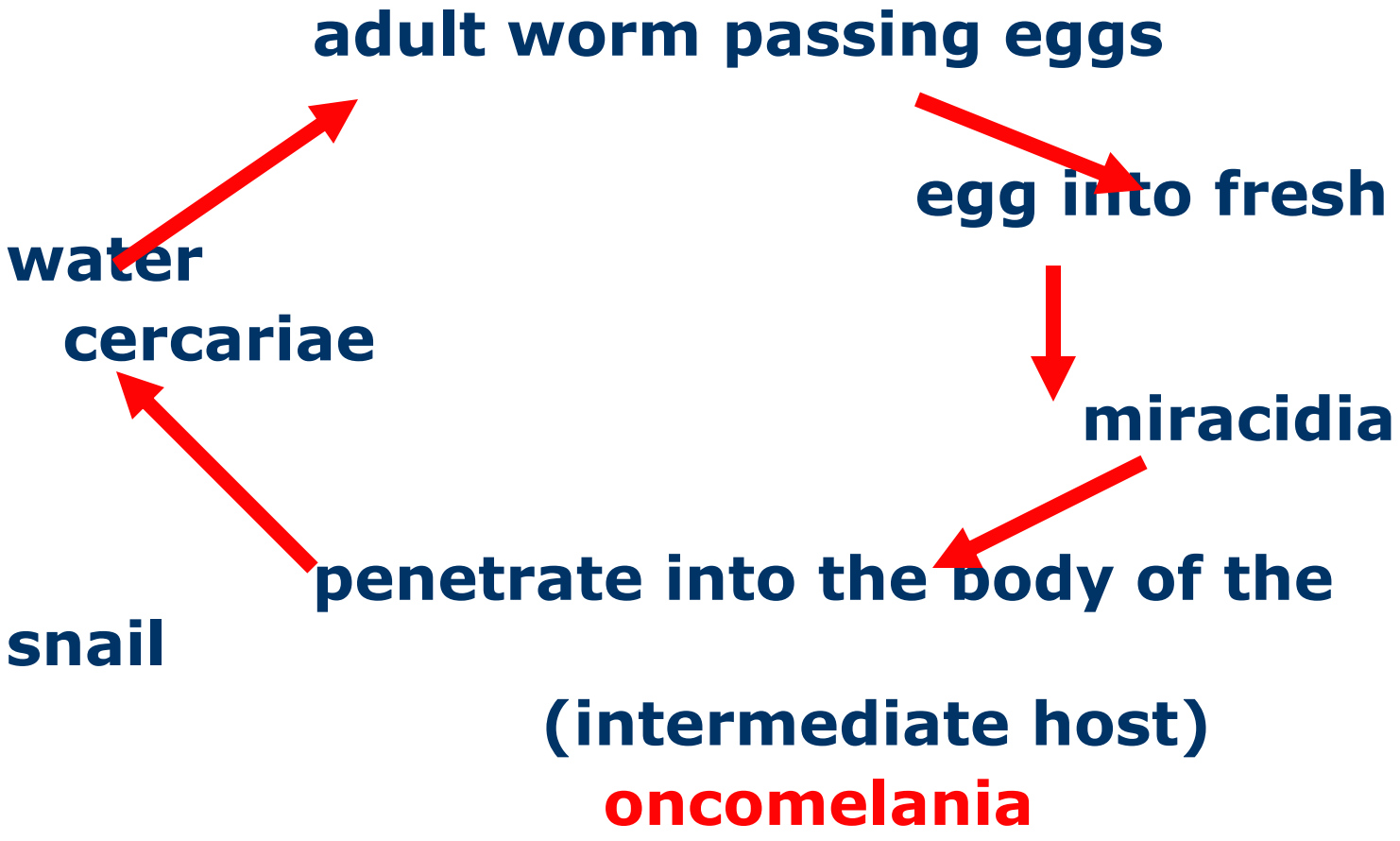
Introduction

- ***Schitosoma japonicum* inhabits in the portal venous system**
- **Skin contact with water contaminated by cercaria**
- **The basic pathologic lesion is the egg granuloma in the liver and colon**
- **Acute schitosomiasis:fever,enlargement and tenderness of the liver,eosinophilia,and dysentery**
- **Chronic schitosomiasis : fibro-obstructive lesion around the portal vessels**
- **Late stage: giant spleen, ascites, hypertension of portal venous system**

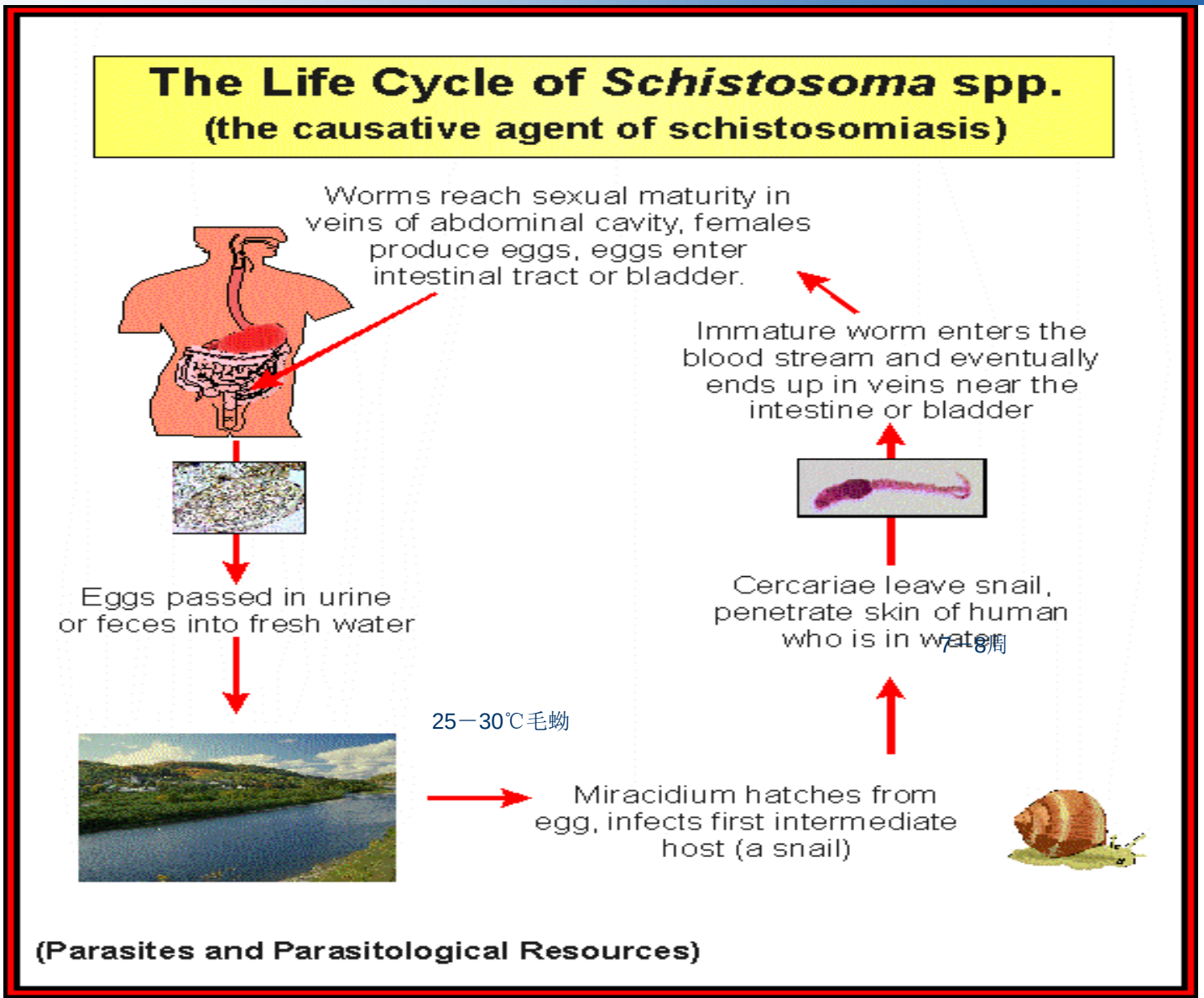
- **Mature worms: Dioecious**
  Female :long and thin.
  Male:short and thick
- **Eggs: miracidia in it**


Schistosoma, in copula
female
male
(by P.W. Pappas and S.M. Wardrop)

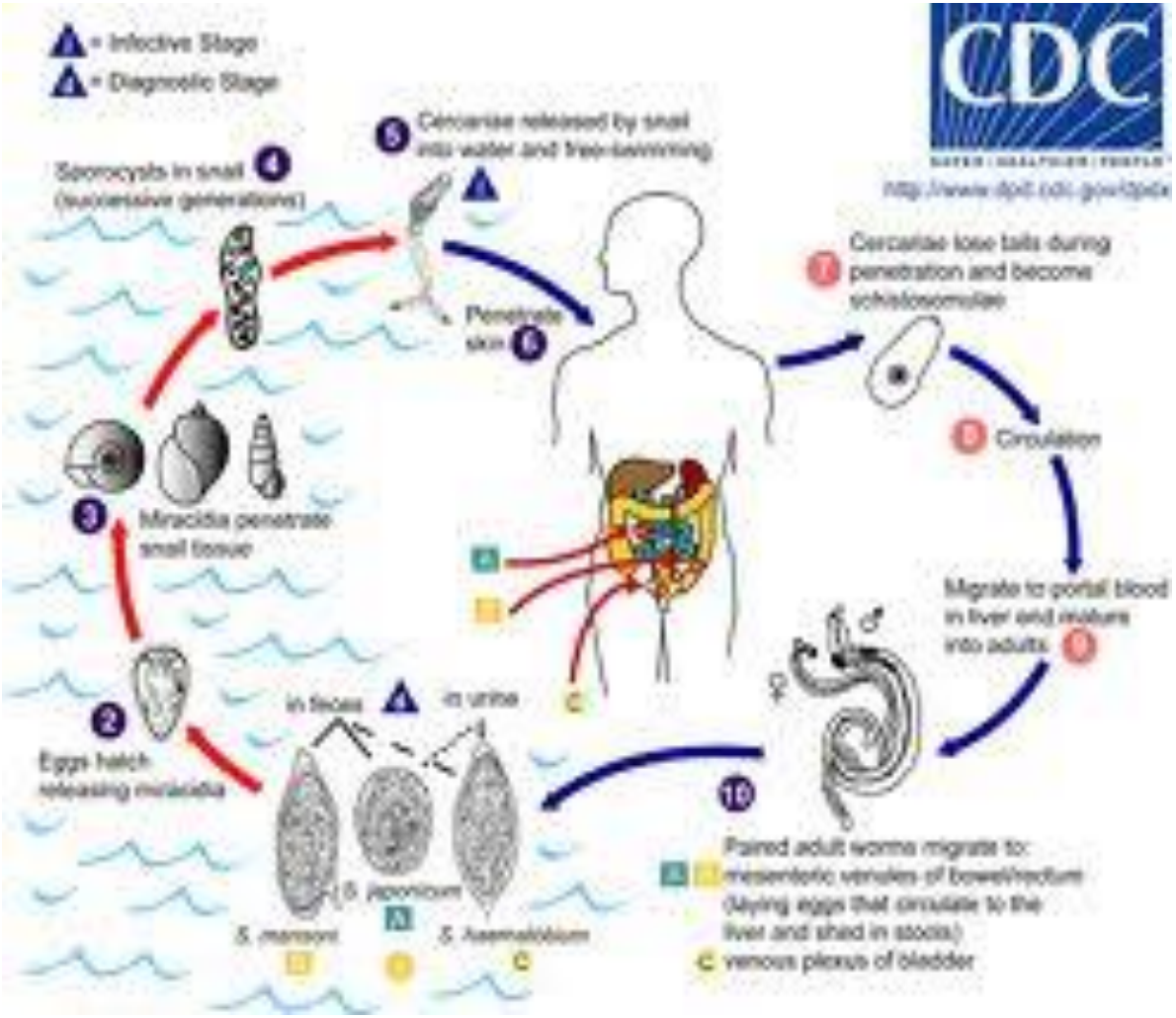



adult worm passing eggs
egg into fresh
water
cercariae
miracidia
penetrate into the body of the
snail
(intermediate host)
oncomelania

Cara Penularan



Cara Penularan



Epidemiology

- **Source of infection: humans and mammals (especially cattle) infected by schistosome**
- **Route of transmission: three major factors* are responsible for the occurrence of schistosomiasis**
- **Susceptibility : everyone is susceptive. Especially peasant and fisherman**


Caribbean Area
Schistosomiasis-Endemic Areas
Hepatic/Intestinal
Urinary
Both Types
Very Low Risk

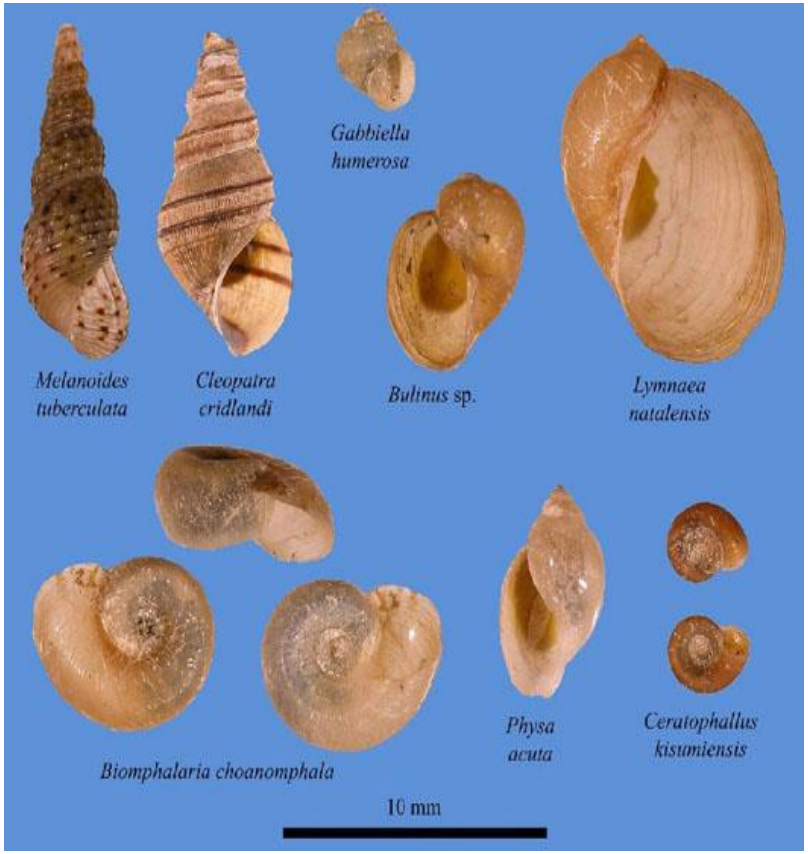
- ***S. mansoni→Afrika (termasuk Madagaskar); Semenanjung Arab; Brazil; Suriname dan Venezuela di Amerika Selatan dan kep. Karibia***
- ***S. haematobium→Afrika termasuk Madagaskar dan Mauritius dan Timur Tengah***
- ***S. japonicum→Cina, Taiwan, Philipna dan Sulawesi (Indonesia); Jepang (tidak ada kasus baru yang ditemukan sejak tahun 1978 setelah program pemberantasan secara intensif)***
- ***S. Mekongi→daerah aliran Sungai Mekong di Laos, kamboja dan Thailand***
- ***S. Intercalatum di beberapa bagian Afrika Barat, termasuk Kamerun, Republik Afrika Tengah, Chad, gabon, Sao Tome dan Kongo***
- ***S. mattheei→di Afrika Selatan***
- ***S. malayensis→Semenanjung Malayia***

Three Major Factors

- **The method of disposal of human excreta**
- **The presence of the snail intermediate host**
- **The contact with cercaria-infected water**

Masa inkubasi :infeksi primer 2 – 6 minggu setelah terpajan

Host Intermediet



Pathogenesis

- It belong to a kind of allergic reaction(rapid & delayed)
- Formation of granuloma produced by eggs (Hoeplli sign)
- Concomitant immunity
- Ectopic lesion (lung & brain)

- Colon: acute -mucosa congestion, edema and egg granuloma
  chronic-fibro obstructive lesion
- Liver: acute -enlargement of the liver
  and egg granuloma on it
  chronic-portal liver cirrhosis
- Other organs: lung and brain, etc
- Systemic symptoms:

Clinical Manifestations

Acute Schistosomiasis

- Mainly occurs during July to September
- The history of contact with schistosome-infected water.
- Schistosome dermatitis
- Incubation period: 23-73 days, average 1 month

Acute Schistosomiasis

- **Clinical manifestations come out after 4 to 8 weeks of infection, similar to the time from egg to adult worm (40 days)**
- **Fever: intermittent, maintain weeks to months**
- **Allergic reaction:urticaria, angioneuroedema, enlargement of lymph nodes and eosinophilia**
- **Digestive syndromes: abdominal pain, diarrhea with pus and blood, constipation or diarrhea**
- **Hepatosplenomegaly**

Chronic Schistosomiasis

- **Asymptomatic: most person are asymptomatic**
- **Symptomatic: the most common syndrome is abdominal pain with intermittent diarrhea.**

  hepatosplenomegaly

Terminal stage of schistosomiasis

- Liver cirrhosis is the prominent syndrome of this stage
- According to the manifestations , it can be divided into three types:
  - The type of giant spleen
  - The type of ascites
  - The type of dwarf

Complications

Complications of Liver Cirrhosis

- Varicosity of esophagus-fundus-stomach
- Hemorrhage of upper gastrointestinal tract
- Hepatic encephalopathy (HE)
- Spontaneous bacteria peritonitis (SBP)

Complications of intestinal tract

- Appendicitis
- Intestinal obstruction and cancroid change

Diagnosis

- **Epidemiologic date: occupation, history of travel to endemic area, contact with infected water**
- **Clinical date:**

  Acute stage; chronic stage; terminal stage
- **Laboratory findings:**

  Blood Rt; characteristic eggs in feces; biopsy; positive immunological test

Differential Diagnosis

- **Acute schistosomiasis: typhoid fever; amebic liver abscess; tubercular peritonitis; miliary tuberculosis; bacillary dysentery; malaria;etc. etiology test and X-ray of chest are diagnostic.**
- **Chronic schistosomiasis:anicteric viral hepatitis;amebic dysentery; chronic bacillary dysentery;**
- **Terminal schistosomiasis: portal liver cirrhosis and necrosis liver cirrhosis**

Treatment

Pathogenic Treatment

- Praziquantel is the best choice of drug for the therapy of schistosomiasis
- Dose:

  chronic schistosomiasis

  10mg/kg, tid. Po, for 2 days, total 60mg/kg

  Acute schistosomiasis

  10mg/kg,tid. po,for 4 days, total 120mg/kg
- Vice reaction: slight and short.

Upaya Pencegahan

- Penyuluhan
- Buang air besar dam buang air kecil dijamban yang saniter
- Memperbaiki cara-cara irigasi dan pertanian
- Memberantas tempat perindukan keong dengan moluskisida
- Oleh alkohol 70% untuk membunuh serkaria
- Gunakan sepatu boot karet (untuk mencegah pajanan dengan air terkontaminasi)
- Sarana air untuk konsumsi diberi I atau Cl

Prevention

- **Control of the source of infection:**

  Treat the patients and domestic animal at the same time.

- **Cut off the route of transmission:**

  Snail control

  Sanitary disposal of human excreta

- **Protect of susceptive people:avoid the contact with schistosome-infected water**


Thank You !