



LECTURE (6)

SCHISTOSOMIASIS

OBJECTIVES:

 **Not given**

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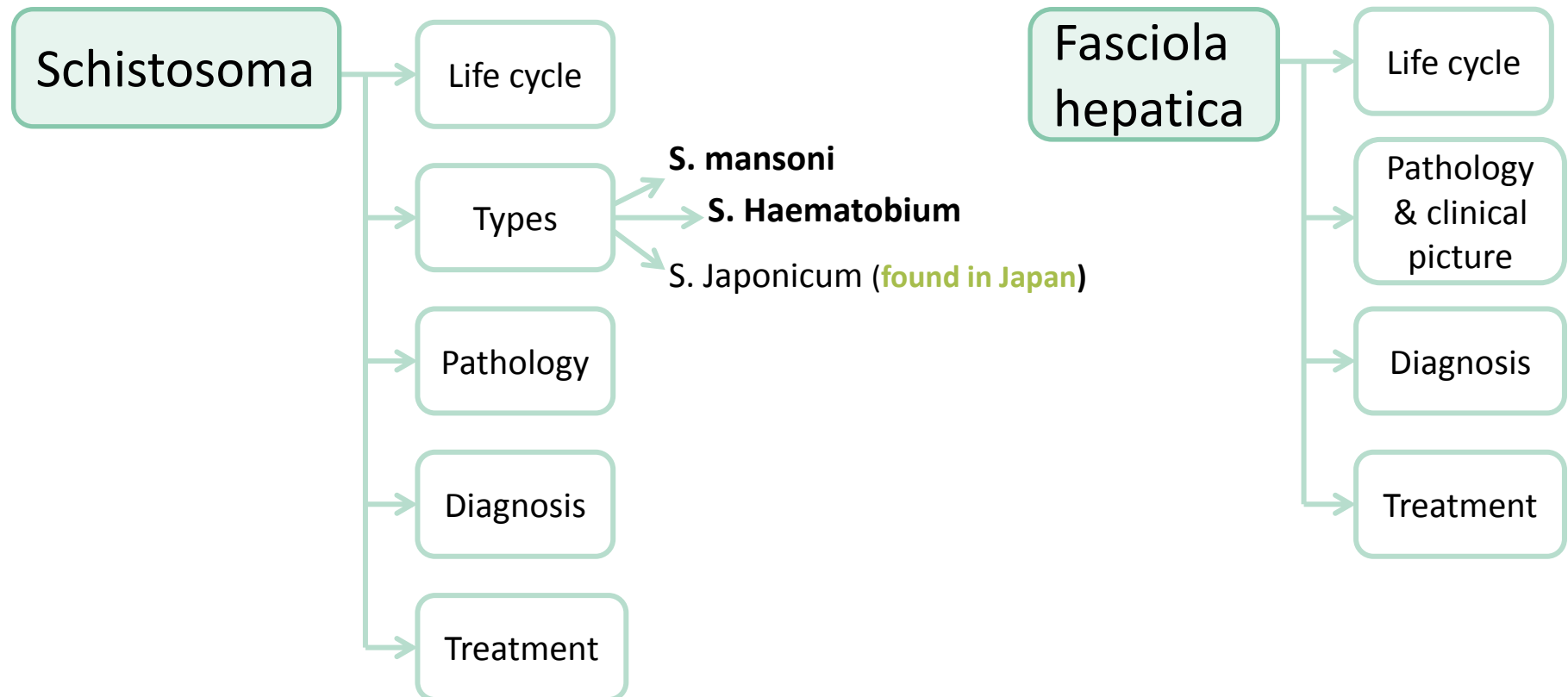
 Very important

Additional information

Male doctor's notes

Female doctor's notes

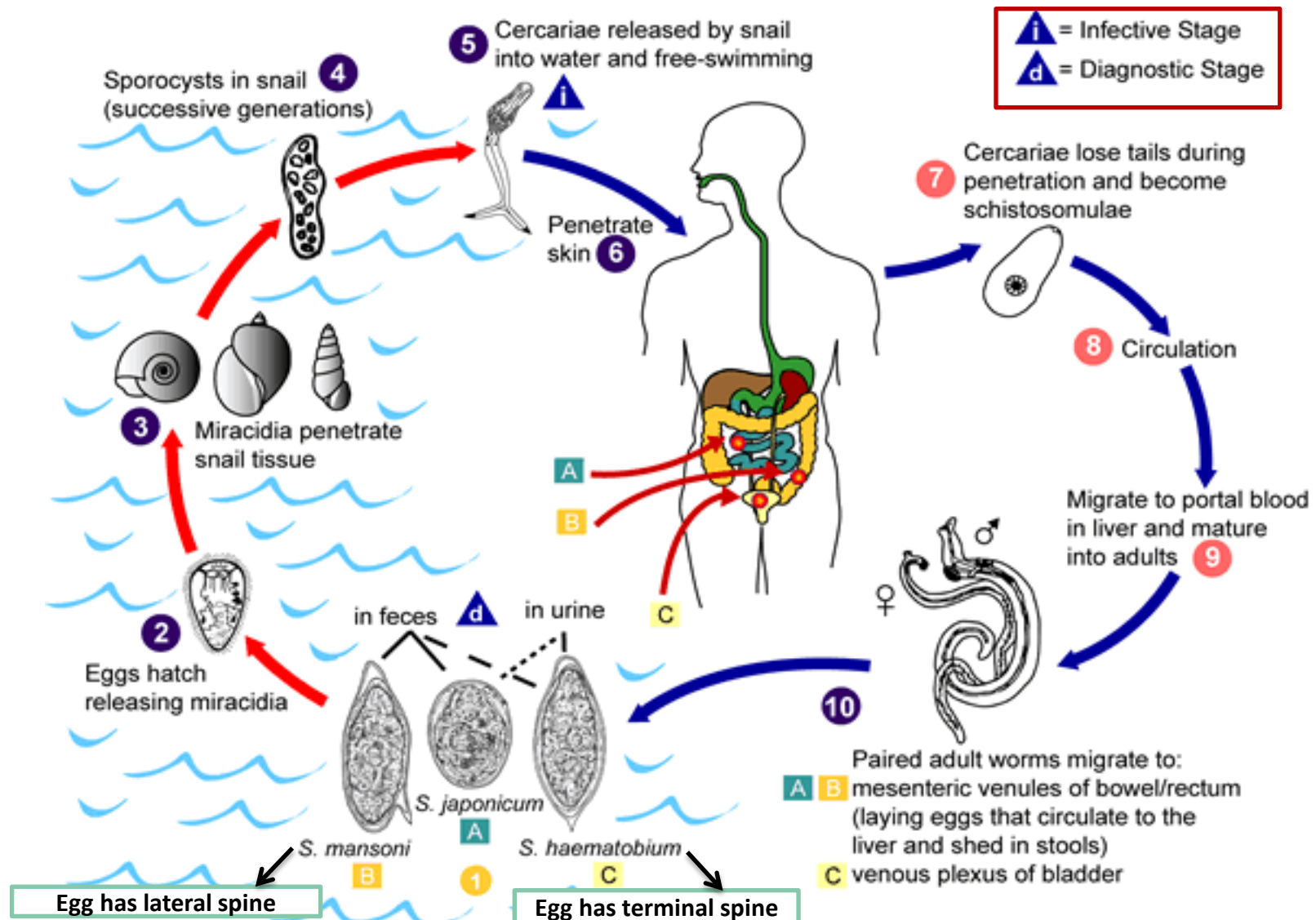
MIND MAP (TREMATODES)



Trematodes have leaf-like shape



LIFE CYCLE OF SCHISTOSOMA

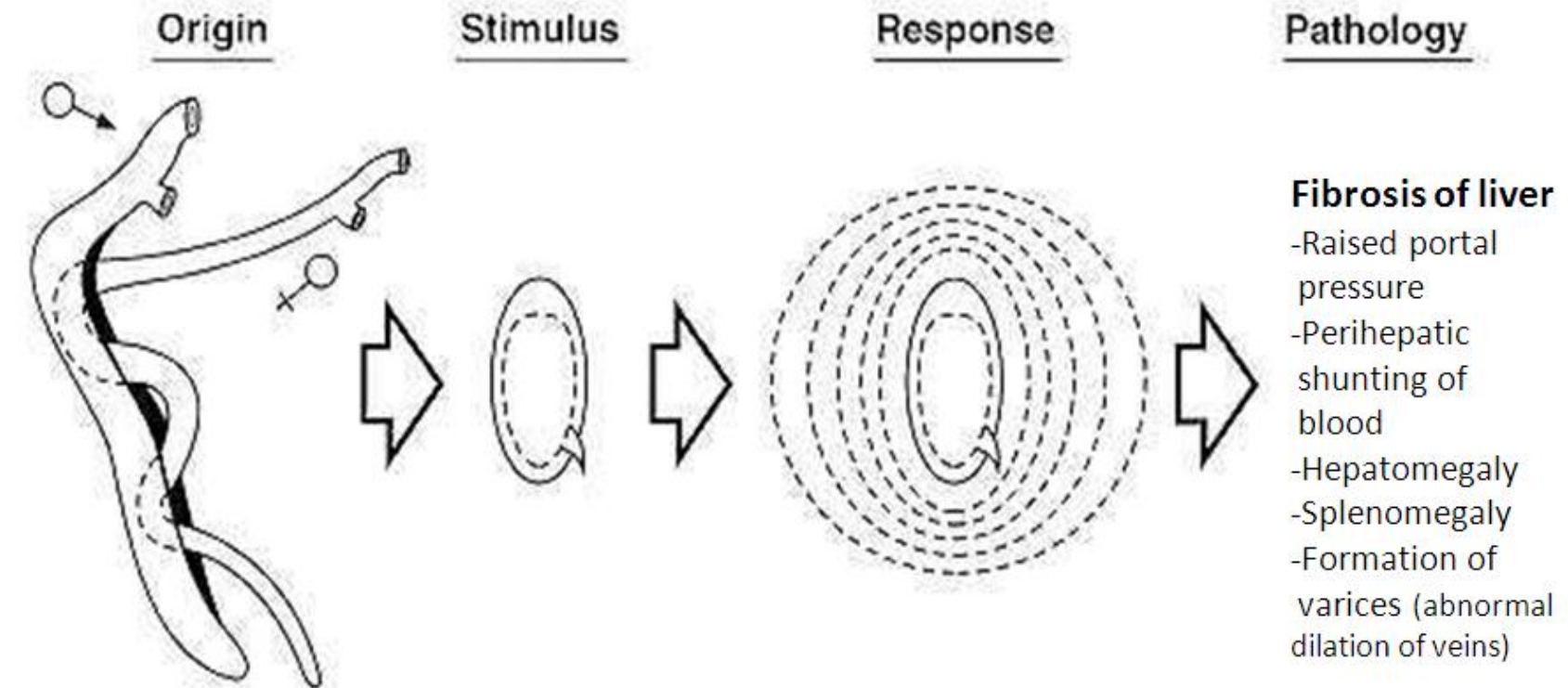




SUMMARY OF LIFE CYCLE OF SCHISTOSOMA

- 1) Eggs pass in stool/urine (**diagnostic stage**)
- 2) & then hatch into miracidia in the contaminated water.
- 3) Miracidia penetrate snail (**intermediate host**) tissue & mature into cercariae.
- 4) Cercariae are released in water, & then penetrate human skin. It loses its tail during penetration of the skin (**infective stage**).
- 5) Cercariae enter the blood circulation as schistosomulae & migrate to portal blood in liver & mature into adults.
- 6) Adult worms migrate to:
 - Mesenteric venules of bowel/ rectum & their egg circulate to the liver & shed in stool.
 - Or to the venous plexus of the bladder (*S. haematobium*), & their egg will be in urine.

PATHOLOGY OF *S. MANSONI*



Adult schistosomes in **blood vessels** around small intestine

Eggs laid by female are carried in blood vessels and trapped in **liver**

Hypersensitivity to antigens of larva inside egg cause formation of **granuloma**. Liver sinusoids become **blocked, impeding blood flow**



PATHOLOGY OF SCHISTOSOMIASIS

	S. haematobium	S. mansoni
Lead to	Urinary schistosomiasis	Intestinal schistosomiasis
Prepatent period*	10-12 weeks	5-7 weeks
Egg deposition & extrusion	<ol style="list-style-type: none"> 1.painless haematuria. 2.Inflammation of bladder & burning micturition. 3.CNS involvement. 	<ol style="list-style-type: none"> 1.dysentery (blood & mucus in stools), 2.hepatomegaly splenomegaly 3.CNS involvement
Tissue proliferation & repair (complications)	<ul style="list-style-type: none"> • Fibrosis, papillomata** in the bladder & lower ureter leading to obstructive uropathy. • Periportal fibrosis. • Lung & CNS involvement. 	<ul style="list-style-type: none"> • Fibrosis, Papillomata in intestine. • Periportal fibrosis, hematemesis. • Lung & CNS involvement.

* Before the appearance of symptoms.

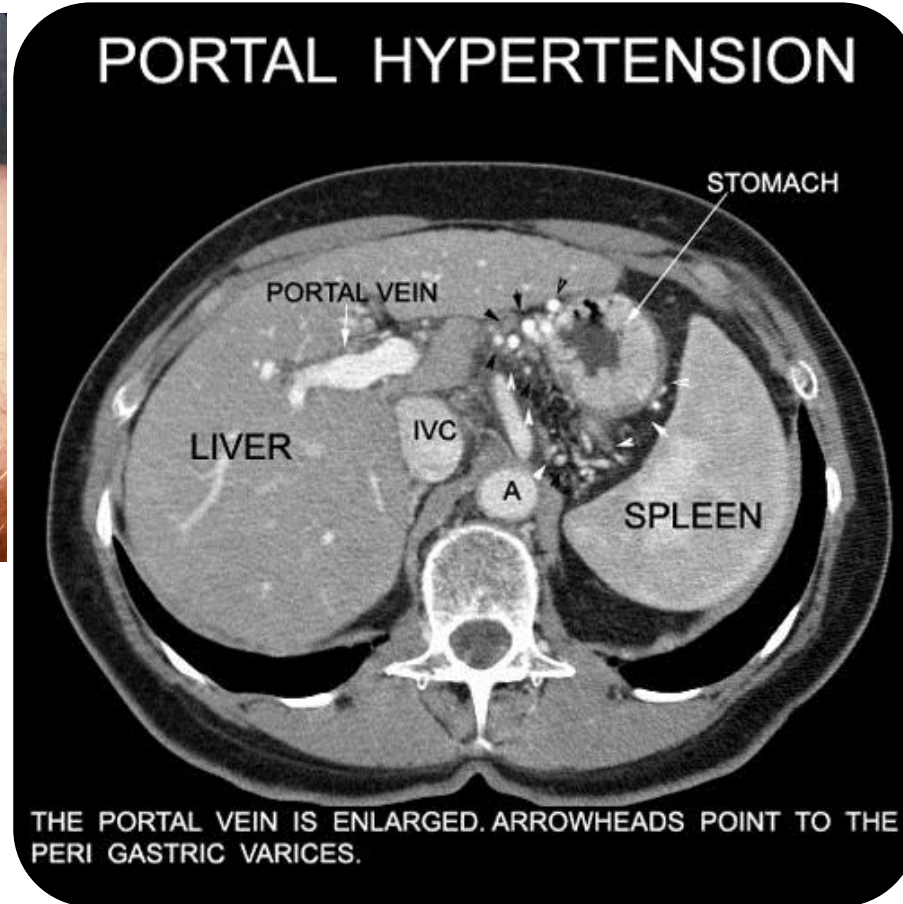
**A small benign epithelial tumor, such as a wart.



SYMPTOMS



Schistosome dermatitis (swimmers itch) occurs when skin is penetrated by a free-swimming, fork-tailed infective cercaria.



CT scan showing Portal hypertension in chronic schistosomiasis



Hepatosplenomegaly in chronic schistosomiasis





DIAGNOSIS OF SCHISTOSOMIASIS

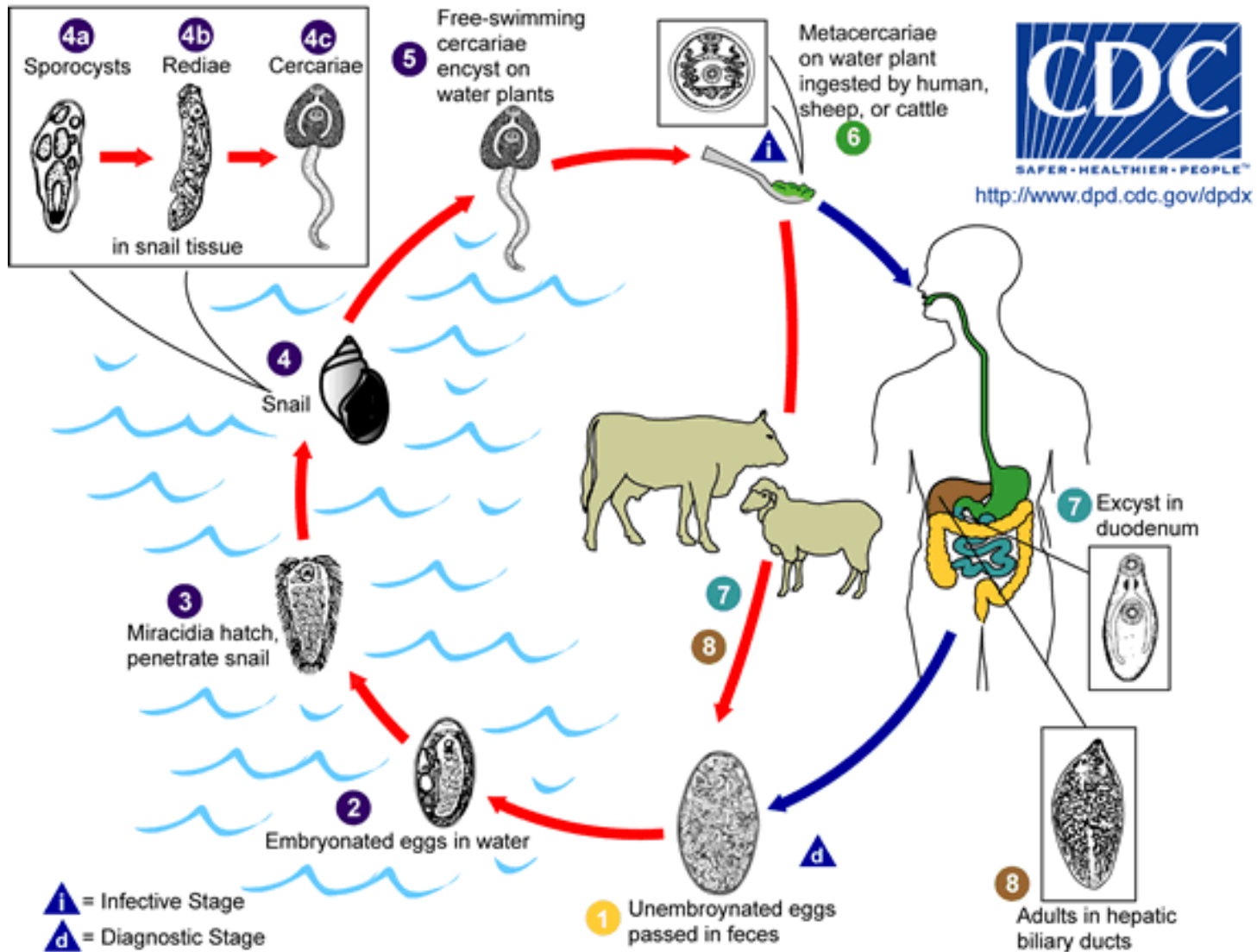
	S. haematobium	S. mansoni
Parasitological	Examination of urine	Examination of stools
Immunological	Serological tests	Serological tests
Indirect	-Radiological -Cystoscopy	-Radiological -endoscopy

TREATMENT:

Praziquantel



LIFE CYCLE OF FASCIOLA HEPATICA



SUMMARY OF LIFE CYCLE OF FASCIOLA HEPATICA

1. Unembryonated eggs passed in feces (**diagnostic stage**) & contaminate water.
2. Miracidia hatch & penetrate snail's tissue (**intermediate host**) developing into cercariae.
3. Free swimming cercariae encyst* in water plants.
4. Metacercariae on water plants ingested by humans, sheep or cattle (**infective stage**).
5. Metacercariae encyst in the duodenum, & get transmitted to the liver & bile duct.
6. Adults grow in the liver & produce eggs, which appear in stool.

Watercress is a one means of transmission of fascioliasis.

Eradication of the disease is by eradication of snails.



*to become enclosed in a cyst.

FASCIOLA HEPATICA

Pathology & clinical picture :

- True infection causes mainly biliary obstruction & liver damage .
- False (spurious) infection is when eggs are eaten in infected animal liver (even if the liver is cooked) & passed in stools.

Diagnosis: eggs in stools or duodenal aspirate.

Treatment: **Triclabendazole.**





QUESTIONS

1- What is the diagnostic stage of schistosomiasis?

- A- Cercariae
- B- Miracidia
- C- Eggs in urine or stool
- D- Adult worm

2-which one of the following can cause hepatosplenomegaly?

- A- S. haematobium
- B- Fasciola hepatica
- C- S. mansoni

3- What is the drug of choice of fascioliasis?

- A- Tetracyclin
- B- Triclabendazole
- C- Praziquantel

Answers:

1- c C

2- c C

3- B B

FOR ANY SUGGESTIONS AND PROBLEMS PLEASE CONTACT:

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