Helminths Questions

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Module Quiz: Helminths

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Q1: Onchocerciasis is caused by the filarial worm *Onchocerca volvulus*. Which of the following statements about *O. volvulus* is false?

a) Black flies transmit the mature larval forms of *O. volvulus* to humans
b) Female worms produce embryonic microfilariae that swarm underneath of the epidermis and can enter the eye
c) Infection with *O. volvulus* causes itchy cutaneous lesions, skin rashes and depigmentation
d) The worm is encased in fibrous tissue that can present clinically as palpable subcutaneous nodules
e) Ocular lesions associated with *O. volvulus* infection can decrease visual acuity or cause total blindness
Q1: Onchocerciasis is caused by the filarial worm *Onchocerca volvulus*. Which of the following statements about *O. volvulus* is false?

a) Black flies transmit the mature larval forms of *O. volvulus* to humans Correct! Black flies transmit *immature* larval forms to humans, not mature larval forms.

b) Female worms produce embryonic microfilariae that swarm underneath of the epidermis and can enter the eye Incorrect; Embryonic microfilariae can exit the nodule and enter the eye.

c) Infection with *O. volvulus* causes itchy cutaneous lesions, skin rashes and depigmentation Incorrect; These are all symptoms of Onchocerciasis.

d) The worm is encased in fibrous tissue that can present clinically as palpable subcutaneous nodules Incorrect; Onchocerciasis can present clinically as palpable subcutaneous nodules that are caused by the fibrous tissue-encased worm.

e) Ocular lesions associated with *O. volvulus* infection can decrease visual acuity or cause total blindness Incorrect; If left untreated, *O. volvulus* can decrease visual acuity or cause blindness.
Q2: Which of the following is true regarding urinary Schistosomiasis?

a) It is endemic in Brazil and Venezuela
b) It is marked by diarrhea and hepatosplenomegaly
c) It is caused by the parasite *Schistosoma mansoni*
d) It is transmitted by the *Bulinus* species of mollusc
e) It may lead to subacute appendicitis
Q2: Which of the following is **true** regarding urinary Schistosomiasis?

a) It is endemic in Brazil and Venezuela **Incorrect**; Intestinal Schistosomiasis is the only form that is endemic in parts of South America.

b) It is marked by diarrhea and hepatosplenomegaly **Incorrect**; Urinary Schistosomiasis is characterized by fever, headaches, and hematuria; Intestinal Schistosomiasis is marked by diarrhea, cachexia, and hepatosplenomegaly.

c) It is caused by the parasite *Schistosoma mansoni* **Incorrect**; This is the parasite that causes intestinal Schistosomiasis.

d) It is transmitted by the *Bulinus* species of mollusc **Correct!** The *Bulinus* species of mollusc transmits the parasite that causes urinary Schistosomiasis.

e) It may lead to subacute appendicitis **Incorrect**; Subacute appendicitis is one of the possible complications of intestinal Schistosomiasis.
Q3: All of the following are symptoms of Dracunculiasis infection **except:**

a) Tetanus  
b) Abscess  
c) Painful edema  
d) Septic arthritis  
e) Facial redness
Q3: All of the following are symptoms of Dracunculiasis infection **except**:

a) Tetanus Incorrect; This is a symptom of Dracunculiasis.
b) Abscess Incorrect; This is a symptom of Dracunculiasis.
c) Painful edema Incorrect; This is a symptom of Dracunculiasis.
d) Septic arthritis Incorrect; This is a symptom of Dracunculiasis.
e) Facial redness Correct! Facial redness is not a symptom of Dracunculiasis.
Q4: Which of the following does not accurately describe Lymphatic filariasis?

a) It mainly affects the lower limb
b) Chyluria is the most common manifestation
c) The intermediate vector is the mollusc
d) It is caused by the parasitic worms *Wuchereria bancrofti* and *Brugia malayi*
e) Treatment involves yearly doses with both albendazole and diethylcarbamazine
**Q4:** Which of the following does not accurately describe Lymphatic filariasis?

a) It mainly affects the lower limb **Incorrect;** Lymphatic filariasis usually affects the lower limbs (it may also affect the scrotum, vulva, upper limb and breast).

b) Chyluria is the most common manifestation **Incorrect;** This is the most common manifestation.

c) The intermediate vector is the mollusc **Correct!** The intermediate vector of Lymphatic filariasis is the mosquito.

d) It is caused by the parasitic worms *Wuchereria bancrofti* and *Brugia malayi* **Incorrect;** Lymphatic filariasis is caused by *Wuchereria bancrofti* and *Brugia malayi* parasites.

e) Treatment involves yearly doses with both albendazole and diethylcarbamazine **Incorrect;** Lymphatic filariasis is treated yearly with doses of both albendazole and diethylcarbamazine.
Q5: Which of the following strategies is **best** suited to control the spread of Schistosomiasis?

a) Monthly treatment with Praziquantel for high-risk populations  
b) Mosquito nets  
c) Monthly treatment with Praziquantel for all school-age children  
d) Treating water with molluscicides  
e) Improved facial hygiene
Q5: Which of the following strategies is best suited to control the spread of Schistosomiasis?

a) Monthly treatment with Praziquantel for high-risk populations Incorrect; It is sometimes recommended that high-risk populations be treated *yearly* with Praziquantel.

b) Mosquito nets Incorrect; Mosquitoes do not carry Schistosomiasis.

c) Monthly treatment with Praziquantel for all school-age children Incorrect; The drug is sometimes administered to an entire community (not just children), however it is distributed *yearly*.

d) Treating water with molluscicides Correct! Treating water sources with molluscicides reduces mollusc nesting, which helps stop the spread of infection.

e) Improved facial hygiene Incorrect; Facial hygiene does not play a role in the transmission of Schistosomiasis.
Q6: Dracunuliasis is caused by the ______ worm and transmitted by the ______ vector.

a) *Dracunculus medinensis*; mollusc.
b) *Dracunculus medinensis*; mosquito.
c) *Mycobacterium ulcerans*; fresh water crustacean.
d) *Mycobacterium ulcerans*; mollusc.
e) *Dracunculus medinensis*; fresh water crustacean.
Q6: Dracunuliasis is caused by the ______ worm and transmitted by the ______ vector.

a) *Dracunculus medinensis*; mollusc Incorrect; See below.
b) *Dracunculus medinensis*; mosquito Incorrect; See below.
c) *Mycobacterium ulcerans*; fresh water crustacean Incorrect; See below.
d) *Mycobacterium ulcerans*; mollusc Incorrect; See below.
e) *Dracunculus medinensis*; fresh water crustacean Correct! *Dracunculus medinensis* is the worm that causes Dracunculus and is transmitted by fresh water crustaceans.
Q7: Which of the following statements about soil-transmitted helminthiases is **false**?

a) Mebendazole and albendazole are used for large-scale prevention of morbidity in children living in endemic areas
b) Symptoms include diarrhea, abdominal pain, general malaise and weakness
c) *Ancylostoma duodenale* infects 1.2 billion people
d) Hookworms can cause intestinal blood loss
e) Soil-transmitted helminthiases infection may impair physical growth in children
Q7: Which of the following statements about soil-transmitted helminthiases is **false**?

a) Mebendazole and albendazole are used for large-scale prevention of morbidity in children living in endemic areas Incorrect; Mebendazole and albendazole are the drugs of choice for children living in endemic areas.

b) Symptoms include diarrhea, abdominal pain, general malaise and weakness Incorrect; These are all symptoms of soil-transmitted helminthiases.

c) *Ancylostoma duodenale* infects 1.2 billion people Correct! It is *Ascaris lumbricoides* that infects 1.2 billion people.

d) Hookworms can cause intestinal blood loss Incorrect; Hookworms can cause intestinal blood loss and result in anemia.

e) Soil-transmitted helminthiases infection may impair physical growth in children Incorrect; Infection may impair physical growth in children (it may also affect their working and learning capabilities).
A 28-year old woman from a small town in Southern Sudan presented to a clinic in Juba, Sudan with fever, and an intense burning/itching sensation in her left foot. The woman stated that she had been living in the slums of Juba for several months, but had never had any health problems until now. Upon examination, a palpable mass was felt below the dorsal surface of the foot. In addition, blood tests revealed that she had high levels of eosinophilia. A picture of her foot is shown on the right. How would you diagnose this woman?

Emergence of the worm from a blister on the foot (http://www.mortalecurioso.com)
A 28-year old woman from a small town in Southern Sudan presented to a clinic in Juba, Sudan with fever, and an intense burning/itching sensation in her left foot. The woman stated that she had been living in the slums of Juba for several months, but had never had any health problems until now. Upon examination, a palpable mass was felt below the dorsal surface of the foot. In addition, blood tests revealed that she had high levels of eosinophilia. A picture of her foot is shown on the right. How would you diagnose this woman?

Dracunculiasis

Emergence of the worm from a blister on the foot
(http://www.mortalecurioso.com)
Q1: Imagine you are responsible for eliminating Onchocerciasis from a community in western Africa. How will you achieve this goal? Outline the main issues that you will need to address and discuss potential elimination strategies.

Q2: What are some of the implications of contracting Lymphatic filariasis? How will this disease affect the infected individual, their family and/or the community they live in? (Try to think of physical, social and economic consequences).
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