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And Parasitology
MODULE MODULE: MLT 4TH
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Q1:

ANS: ENTEROBIUS

Disease: Enterobius vermicularis causes pinworm infection

Enterobiasis:

Life cycle:

- **The life cycle is confined to humans.**
- **The infection is acquired by ingesting the worm eggs.**
- **The eggs hatch in the small intestine, where the larvae differentiate into adults and migrate to the colon.**
- **The adult male and female worms live in the colon, where mating occurs.**
- **At night, the female migrates from the anus and releases thousands of fertilized eggs on the perianal skin and into the environment.**
- **Within 6 hours, the eggs develop into embryonated eggs and become infectious.**
- **Reinjection can occur if they are carried to the mouth by fingers after scratching the itching skin**

Egg of E. vermicularis

- **Left: Adhesive tape preparation showing eggs of *E. vermicularis* recovered from anal skin**
- **Right: *E. vermicularis* egg in faeces**
- **It is colourless.**
- **Oval in shape and usually flattened on one side**
- **one side**



Q2: Describe pathogenesis of Ascaris.

Answer:

Pathogenesis:

- **The major damage occurs during larval migration rather than from the presence of the adult worm in the intestine**
- **The principal sites of tissue reaction are the lungs, where inflammation with an eosinophilic exudate occurs in response to larval antigens**

•Because the adults derive their nourishment from ingested food, a heavy Worm burden may contribute to malnutrition, especially in children in developing countries

•Most infections are asymptomatic

•Ascari pneumonia with fever, cough, and eosinophilia can occur with a heavy larval burden

•Abdominal pain and even obstruction can result from the presence of adult worms in the intestine

Q 3: explain the transmission and life cycle of *Intamoeba histolytica* in detail.

ANS: Transmission

Transmission through Fecal oral route by contaminated food water

LIFE CYCLE : 1 cysts comes to the stomach. The cysts are resistance to the stomach environment and passes to the small intestine

2 Each cyst divide to produce 8 trophozoites in the small intestine

3 These trophozoites will then move to the colon of the large intestine. In large intestine, these trophozoites will start colonization

•*Now they can cause two types of infection*

1》 Invasive infection

2》 Non-invasive infection

4• Now in case of non-invasive infection

- **Histolytica trophozoites will just go on the surface of the mucus layer and can multiply by binary fursion, colonized at the surface of mucus membrane and will form new oyst**
 - **Just produce a lot of cysts it is called non-invasive infection do not invade the colon cells**
 - **The cyst will excrete out the body with stools**
 - **Now the cyst can infect other humans by contamination of drinking water or unhygienic food**
 - **SO essentially, in non-invasive infection these trophozortes will leave in hurman body**
- asymptomatically is cause mild disease, abdominal discomfort.**

5》 in case of invasive intection,

- **The trophozoites will invade and colonize the colonic epithelial cells**
 - **And this will cause the epithelial cells to lyse which will create ulcers With in the large intestine**
 - **Neutrophils will response to the invasion and will cause further damage through lysing**
- which lead to ulcer**
- **The epithelium will start creating ulcer ith in the large intestine and after the damage**
- to colon cells and mucuse membrane, the trophozoites will move toward the bloodstream**

6. After entering the blood, the trophozoites can target other organs. So, in invasive infection

through the blood stream trophozoites can infect other sites such as liver, lungs, brain.

Q4: how will you diagnose 'Trypanosoma Cuzi inside a laboratory?

ANS: *Laboratory Diagnosis*

Acute disease is diagnosed by demonstrating the presence of trypomastigotes in thick or thin films of the patient's blood

Both stained and wet preparations should be examined, the latter for motile organisms Because the trypomastigotes are not numerous in the blood, other diagnostic methods may be required, namely, (1) a stained preparation of a bone marrow aspirate or muscle biopsy specimen (which may reveal amastigotes); (2) culture of the organism on special medium.

Q5: Enlist Leishmania species names. Summarize the clinical findings of all species of Leishmania?

ANS: Leishmania

Important species of leishmania

- **Leishmania donovani**
- **Leishmania tropica**
- **Leishmania mexicana**
- **Leishmania braziliensis**

Clinical findings of Leishmania donovani

- **Symptoms begin with intermittent fever, weakness, and weight loss**
- **Massive enlargement of the spleen is characteristic**
- **Hyperpigmentation of the skin is seen in light-skinned patients (kala-azar means black sickness)**
- **The course of the disease runs for months to years**
- **Initially, patients feel reasonably well despite persistent fever**
- **As anemia, leukopenia, and thrombocytopenia become more profound, weakness, infection, and gastrointestinal bleeding occur**
- **Untreated severe disease is nearly always fatal as a result of secondary infection.**
- **Clinical findings of Leishmania tropica , mexican , braziliensis**
- **The initial lesion of cutaneous leishmaniasis is a red papule at the bite site, usually on an exposed extremity**
- **This enlarges slowly to form multiple satellite nodules that coalesce and ulcerate**
- **There is usually a single lesion that heals spontaneously in patients with a competent immune system**
- **However, in certain individuals, if cell-mediated immunity does not develop, the lesions can spread to involve large areas of skin and contain enormous numbers of organisms**
- **Mucocutaneous leishmaniasis begins with a papule at the bite site, but then metastatic lesions form, usually at the mucocutaneous junction of the nose and mouth**

- **Ulcerating lesions destroy nasal cartilage but not adjacent bone**
- **These lesions heal slowly**

THANK YOU

SAMPLE