Entamoeba histolytica

The name amoeba is derived from the Greek word amoibe, which means change, The genus Entamoeba contains many species ; Six of them reside in the human intestinal lumen such as (Entamoeba histolytica, Entamoeba dispar, Entamoeba moshkovskii, Entamoeba polecki, Entamoeba coli and Entamoeba hartmanni). E. histolytica is the only pathogenic species in humans ; the others are considered to be non-pathogenic.

This parasite is classified as the following:

- **Kingdom / Animalia**
- **Phylum / Protozoa**
- **sub phylum / Sarcodina**
- **Super class / Rhizopoda**
- **Class / Lobosea**
- **Order / Amoebida**
- **Family / Entamoebidae**
- **Genus / Entamoeba**
- **Species / histolytica**

Epidemiology and Geographical Distribution

The epidemiology of amoeba around the world is complicated by the existence of three different forms that are morphological identical but genetically distinct and include E. histolytica which is a known pathogen , E.dispar and E.moshkovskii which are non-pathogens . The incidences of infections with E.histolyica occur worldwide, and it has been suggested that 12% of the world's population is infected with this organism.

Amoebic dysentery is an important and endemic disease in Iraq especially in the poor areas. survey on intestinal parasite was found that the first ones was E.coli, the second was Giardia lambelia and the

Third was E.histolytiaca

Life Cycle and Transmission of E. histolytica

E.histolytica exhibits a typical fecal-oral life cycle (in only one host), consisting of an infective cyst stage (which is the dormant form), and a multiplying trophozoite stage. Human infection usually begins with the ingestion of the mature cyst which is present in food and / or water contaminated with human fecal material.

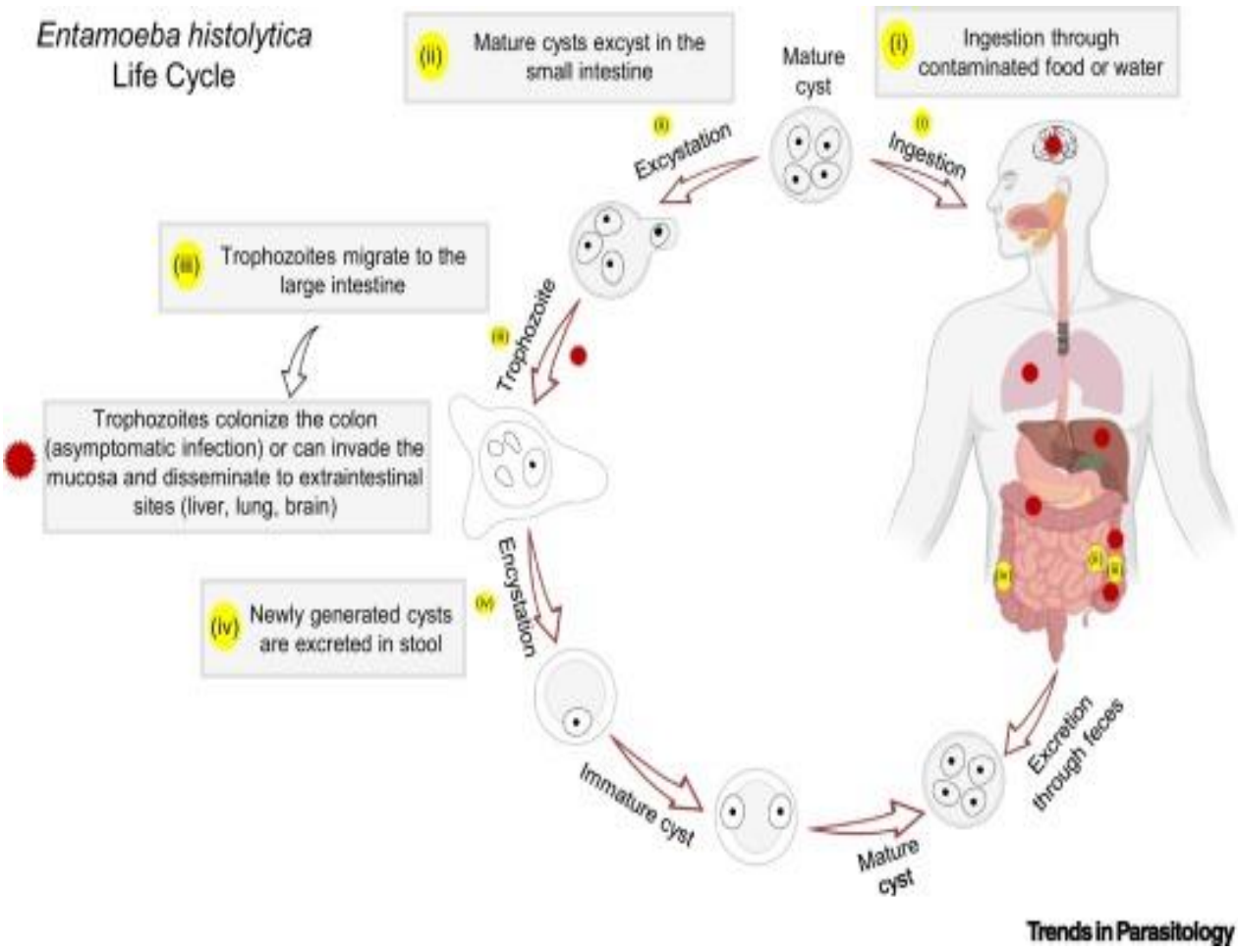
Swallowed cysts pass through the stomach , survive in the acidic pH of the stomach (unharmed) and pass into the intestine . In the small intestine, cysts undergo excystations and each cyst gives rise to eight trophozoites (the cystic stage is infectious, but a non-replicative form of the parasite that will develop in the large intestine of the host into active trophozoites capable of replicating), which is multiply by binary fission and can also produce cysts .

Trophozoites migrate to the colon and multiply, attack and invade the intestinal mucosa causing dysentery and may progress through the blood vessels to extra intestinal - locations like liver, brain and lungs, where they may form life - threatening (acute) abscesses.

Trophozoites play no role in transmission of the disease, but they are responsible for producing tissue pathology,

Mature cysts remain viable and infective in a moist, cool environment for at least 12 days. In water, cysts can live for up to 30 days; nonetheless, they are rapidly killed by desiccation, and temperatures

below 5 °C and above 40 °C. Mature cysts are also resistant to chlorine levels normally used to disinfect water.



Pathogenesis: Intestinal amebiasis Man is the reservoir of infection .Infections occur by 4 - nucleated cysts . E.hitolytica produces dysentery with frequent passing of stools mixed with mucus and blood , Intestinal lesions are acute amebic dysentery and chronic chronie intestinal amebiasis.

Extra - Intestinal amebiasis

Extra - intestinal lesions include

* liver (amebic hepatic and amebic liver abscess)

* Lung (primary small abscess or multiple abscess in one or both lungs

* Brain (a small cerebral abscess)

* Splen (splenic abscess).

Skin (granulomatous lesion, ameboma)

* Amebic vaginitis

Signs and Symptoms of Amoebiasis The clinical picture of amoebiasis varies from absence of any feature to severe clinical presentations; the clinical features may take days or weeks to present after exposure. , abdominal pain , diarrhea with mucous and blood in stools may also be present , loss of weight.

Laboratory Diagnosis:

- Macroscopic examination of stool (dark red stool mixed with blood and mucus) - Microscopic examination of stool for demonstration of trophozoites or cysts of E.hitolytica

- Serological techniques are not useful for the patient of acute intestinal lesions. in extra intestinal cases, they are useful, serological test include

Treatment: Metronidazole, chloroquin, and tinidazole are effective drugs