

Tikrit University

College of Nursing

Basic Nursing Sciences



Second Year - 2023-2024

Microbiology

Medical Parasitology

By: lecturer

Dr. Huda Dhamin Abd Al-jabar

Medical Parasitology

Parasitology:

Its science which is studied the parasitic phenomena.

Parasite:

It's an organism depend on other organism(different species) to get food and shelter and produce harmful effect .

parasitism:

A relationship between different living organism , the first host and the second parasite

Host: an organism which harbors the parasite.

Classes of parasites

A- according to place of infection:

1- **Ecto-parasite** (ectozoa): lives outside on the surface of the body of the host.

2-**Endo-parasite** (entozoa): lives inside the body of the host: in the blood, tissues, body cavities, digestive tract another organs.

B- according to living:

1-Facultative parasite: lives a parasitic life when opportunity arises.

2-Obligatory parasite: cannot exist without the parasitic life.

C- according to period of infection

A- Temporary parasite: visits its host for a short period.

B- Permanent parasite: leads a parasitic life throughout the whole period of its life

Classes of host:

1-**final or definitive host:** is the host in which the parasite

spends its adult stages or where the parasite utilizes the sexual method of reproduction.

2-**Intermediate host:** is the host in which the parasite spends its

larval stages or where the parasite utilizes asexual method of reproduction

3- **carrier or transport host:** it is the host where the larvae are collected without growing, and no symptoms of disease.

the parasite remains viable without further development.

4- **reservoir host:** it is the final host which acting as source of injury.

Classification of parasites

divided into three main groups:

A –Protozoa single-celled organism, multiply in human host, All protozoans have

2 important stages of life: Trophozoite and Cyst

1- phylum: Sarcodina

2- Phylum: mastigophora

3- Phylum: Ciliophora

4- Phylum: Sporozoa

B-Helminthes

(worms) multicellular worms, do not normally multiply in human host

1- Phylum: platyhelminthes

2- Phylum: Nematoda

3- Phylum: Acanthocephala

C-Arthropoda multicellular worms, do not normally multiply in human host

1- Phylum: insecta

2- Phylum: Archneida

1- phylum: Sarcodina: This phylum include:

Entamoeba histolytica

Entamoeba gingivalis

Entamoeba coli

Entamoeba nana

Entamoeba butschlii

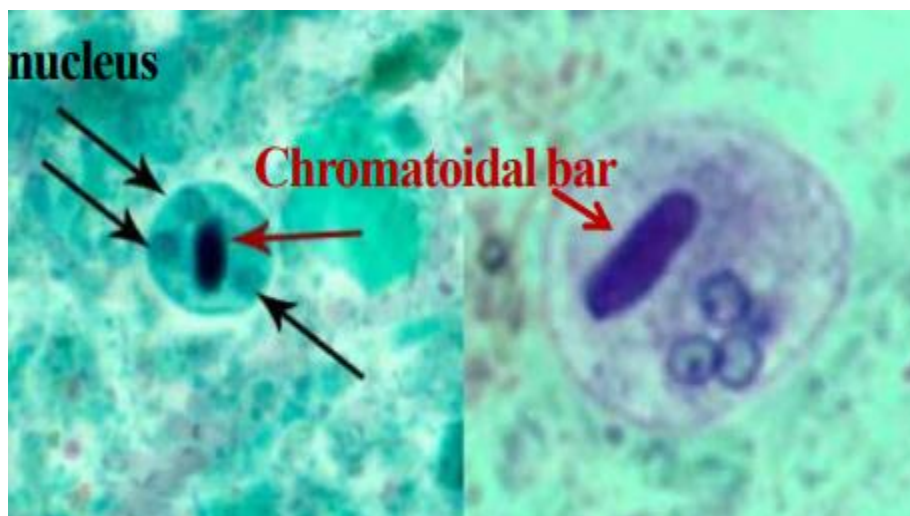
Dientamoeba fragilis

Entamoeba histolytica: live in the tissue and lumen of the intestine. Cause Amoebiasis (Amoebic dysentery).

Morphology

- Different form of E. histolytica;

- a- trophozoite: The organism has single nucleus with clear small central karyosome, have food vacuole with red blood cell, bacteria and epithelial cell.
- b- precyst
- c- cyst (1, 2, 4 nuclei): spherical, with central karyosome and peripheral chromatin, the pseudopoda disappeared



Transmission

- 1- direct contact of person to person(fecal-oral)
- 2- Venereal transmission among homosexual males
- 3- Food or drink contaminated with feces containing the E.his. cyst
- 4- Use of human feces for soil fertilizer
- 5- contamination of foodstuffs by flies, and possibly cockroaches

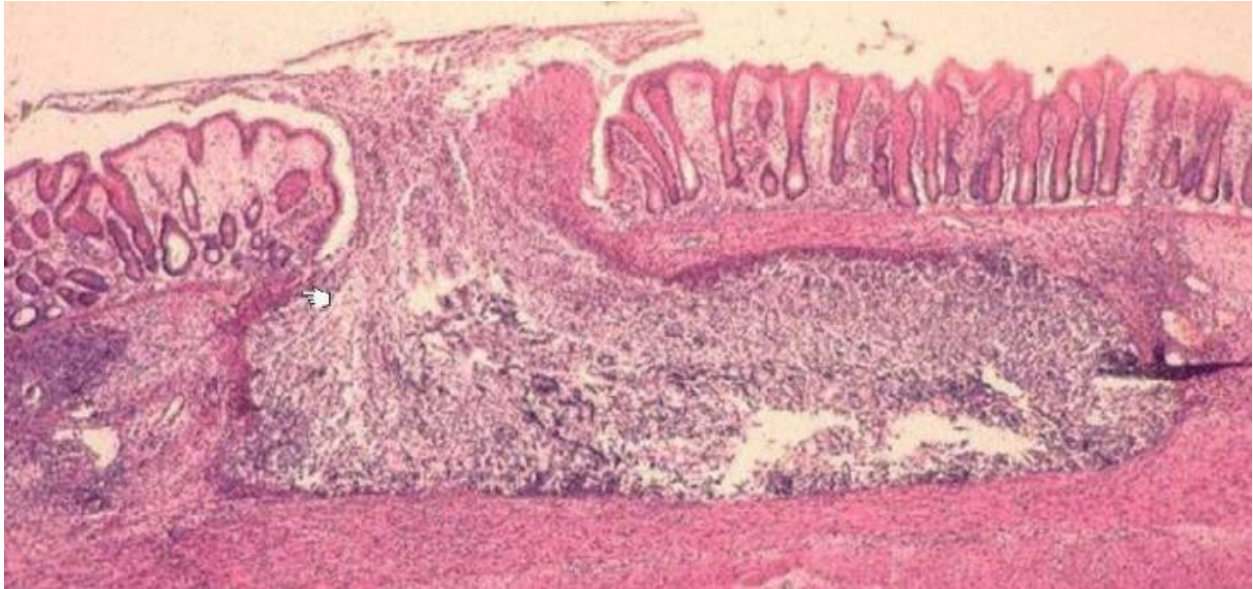
Pathogenesis

Depends on:

- 1-Parasite virulence.
- 2-Host resistance.
- 3-Condition of the intestinal tract.

Pathogenic agent: trophozoites invade intestinal mucosa.

Trophozoites produce histolytic enzyme that produce necrosis of mucosa leading to the formation of flask-shaped ulcer.



Diagnosis (Intestinal amoebiasis)

- Clinically: Dysentery: painful frequent evacuation of small quantities of stool containing mucus tinged with blood.
- Laboratory:
 - 1- Direct stool examination
 - 2- Concentration techniques for cysts.

Treatment

- Metronidazole, Tinidazole.

Very effective in killing amoebas in the wall of the intestine, in blood and in liver abscesses.

- Diloxanide furoate.

kills trophozoites and cysts in the lumen of the intestine.