



## Department of biology



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((علم الطفيليات))

2 stage

المحاضرة الاولى

**Parasitology**

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**1 – Parasitology : It is a science studied types of parasites and their hosts .**

**2 – Parasite : It is an organism live with other organism called host ( different species ) to get its food , shelter and cause harm effects .**

**3 – Hosts : Two types of hosts ?**

**A - Definitive or primary host : It is a host that parasite reaches its adult stage and can do sexual reproduction .**

**B - Intermediate or secondary host : It is an organism harbor the parasite ( sexually immature ) to complete its development and life cycle .**

**Protozoa ( Phylum )Parasites :**

**Sarcodina Class \ Types of Entameba :**

**1 - Entameba histolytica**

**2 - Entameba gingivalis**



**3 - Entameba coli**

**4 - Entameba hartmani**

**5- Entameba dispar : infect dogs and cats .**

## **Entameba histolytica**

**1 - Entameba histolytica Cause a disease called Emebiasis**

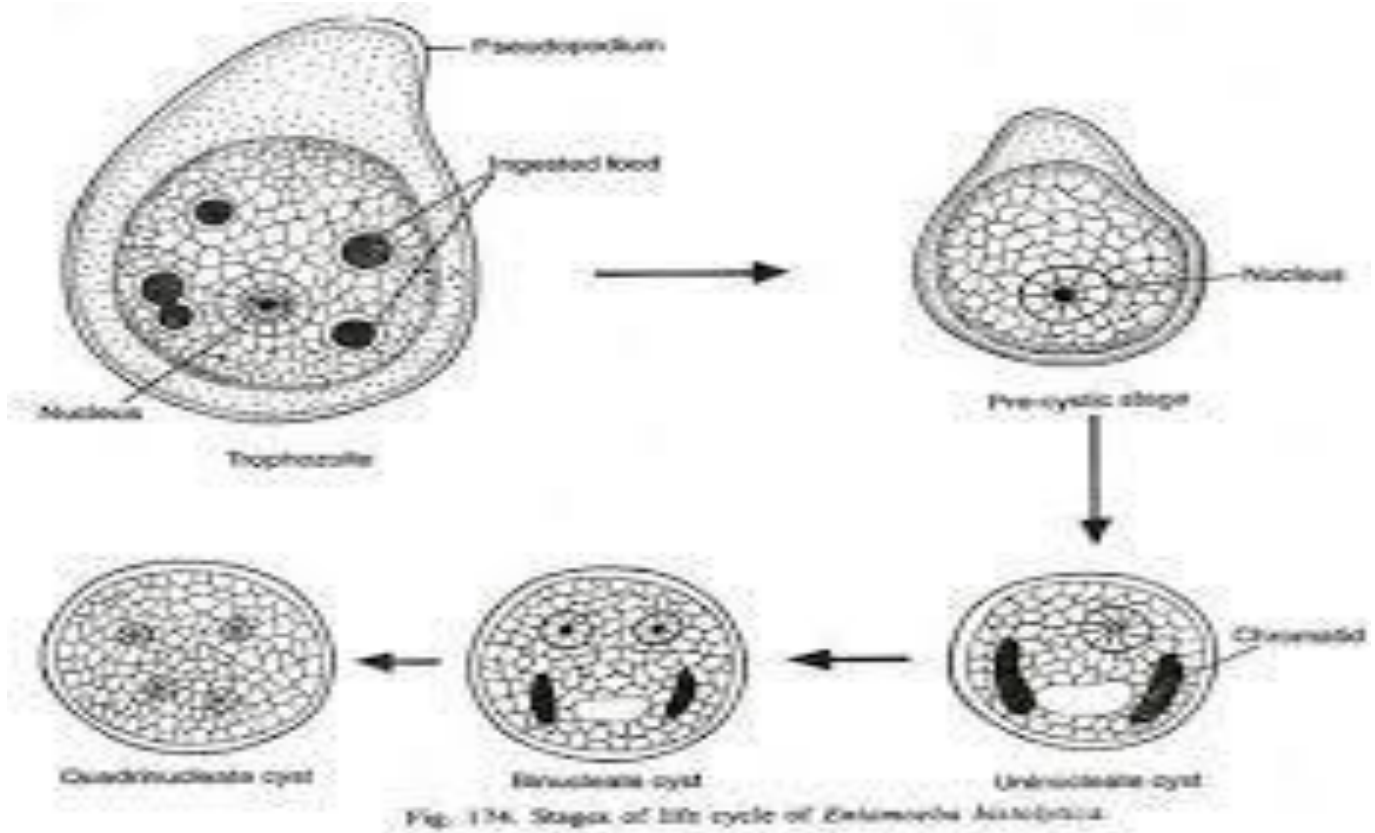
**Or Emebic Dysentery .**

**2 – Infection of this Parasite occur in colon characterized by diarrheasometimes mixed with blood .**

**3 – Stool sheds with parasite .**



4 – This parasite cause high number of infection in tropical countries .



## Stages of *Entamoeba histolytica*

### 1 – Trophozoit :

Active stage Motile ( Rapid ) , feeding stage ingest bacteria and red blood cells ( Food Vacuoles ) , Pathogenic stage , found in colon and fresh stool , have pseudopoda . Uni - nucleus with nucleolus and chromatin form wheel shape . Its size 15 – 40 micron in diameter .



## **2 - Pre-cyst :**

It is immature cyst smaller than trophozoite but larger than cyst have one or two nucleoli and have chromatid body which is aggregation of ribosomes. Found in colon .

## **3 – Cyst Stage :**

Non motile , non feeding , non active , coated by chitin layer . found in colon and stool , it is Infective stage . have four nucleus . Size range 10 – 20 micron .

## **Pathological effects and Transmission :**

Mouth is the route of infection of transmission of mature cyst in fresh stool ( Diagnostic stages ) \ contaminate food or water .

2 – Cyst form is the infective stage , coated by chitin membrane but readily killed by heat or freezing , divided to four individual by simple binary division .

3 – Infection occur when a person swallow contaminated food or water with cyst stage .

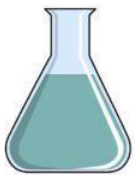
4 – Releasing the trophozoite occur in duodenum but colonize in ileum .



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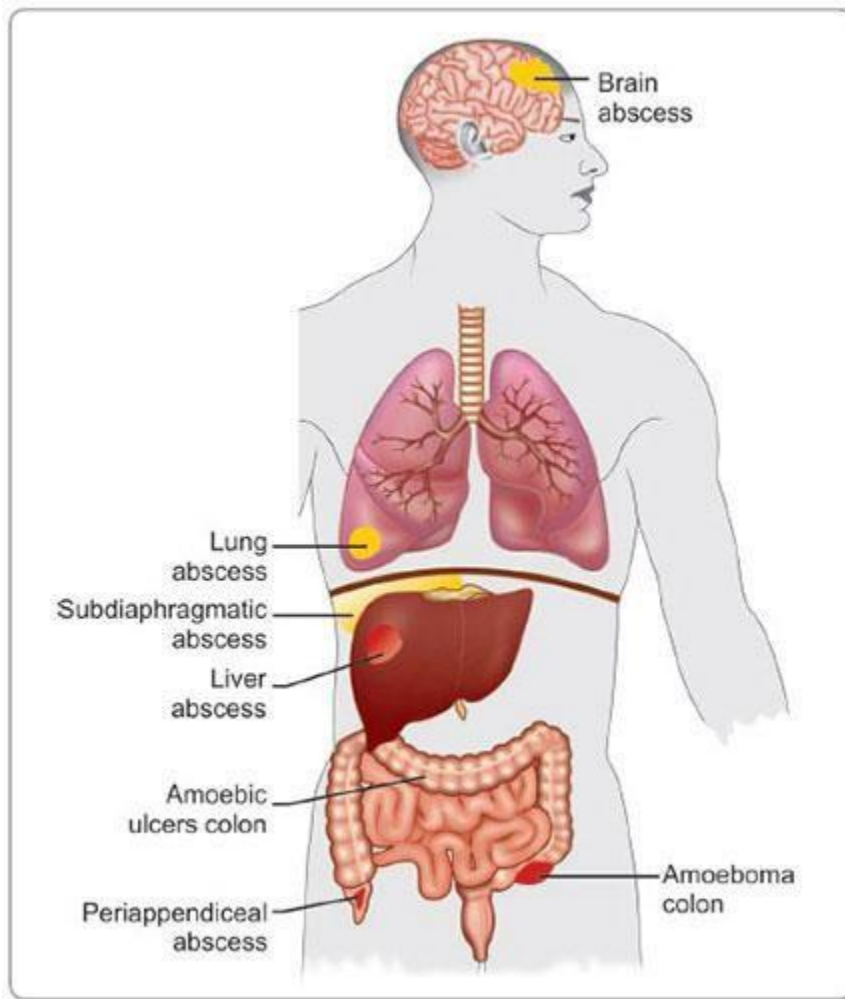


- 5 – Then Migrate to colon      invade    colonic epithelium  
secret    lytic enzymes cause    colic ulcer like Cup or flask  
shape .
- 6 – With blood circulation reach liver , cause liver abscess or  
lung , brain and spleen      abscesses .
- 7 – These lesions ( Ulcers and Abscesses ) are fatal .



*Invasion of crypts and subsequent  
burrow laterally in the lamina propria*  
FLASK shaped ulcer  
*with a narrow neck and broad base.*





## Diagnosis :

- 1 – Fresh stool \ Microscopic Identification for Trophozoite and Cyst stage .
- 2 - PCR ( Polymerase chain reaction ) .
- 3 - Blood samples .



## Treatment :

1– Metronidazole ( Flagel )

2– Trimethopriem

3– Antibiotics( Paromomycin ) Or  
Cephlexin

