



INTERNATIONAL SCHOOL OF MEDICINE

Department of Infectious Diseases

The topic of the lecture:

Amoebiasis

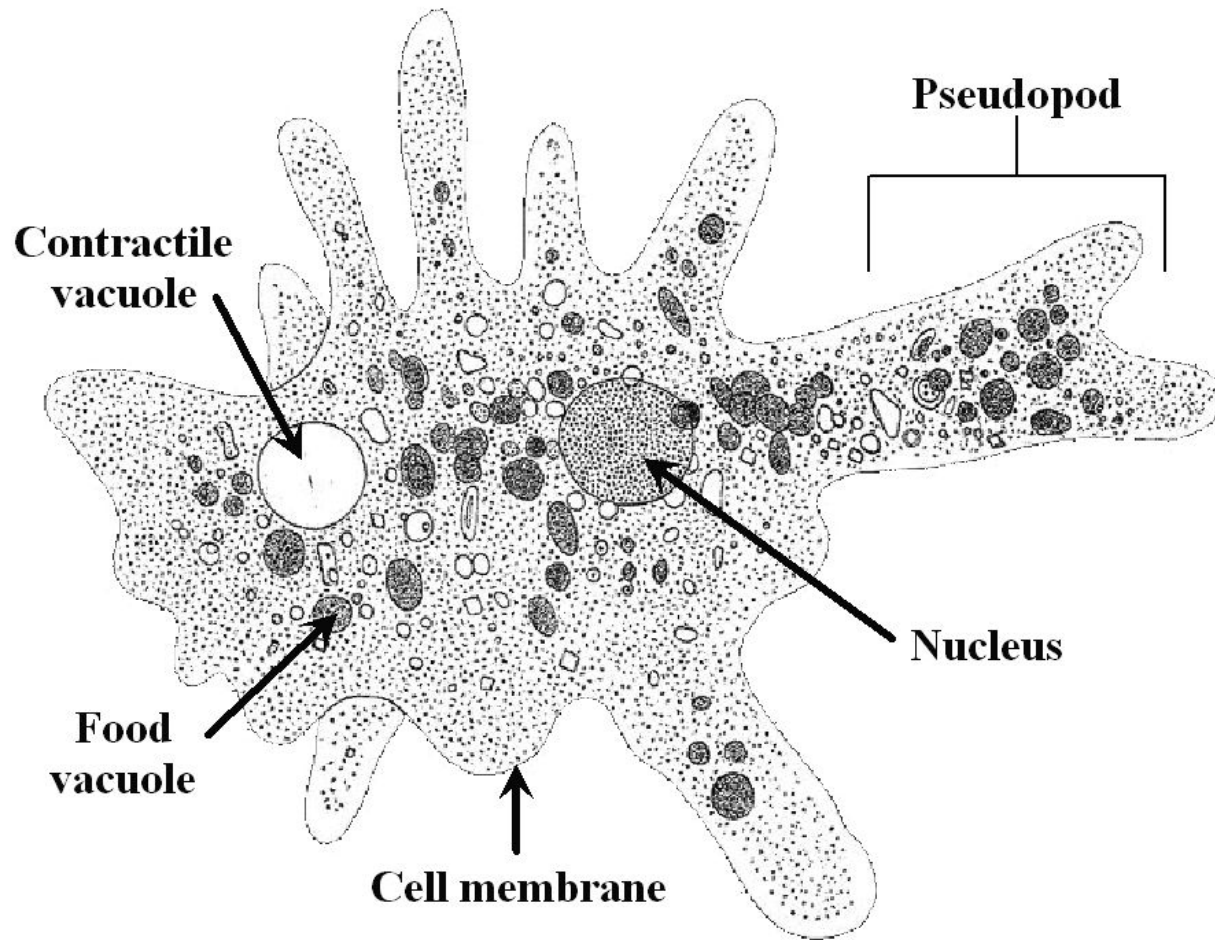
(Amoebic dysentery)

Professor Kutmanova A.Z.

Definition

- Amoebiasis is a parasitic protozoan disease that affects the gut mucosa and liver, resulting in dysentery, colitis and liver abscess.
- The causative agent, *Entamoeba histolytica*, is a potent pathogen that is spread via ingestion of contaminated food and water.
- Globally, amoebiasis is highly prevalent, and is the second leading cause of death to parasitic disease.

Causative agent: *Entamoeba histolytica*

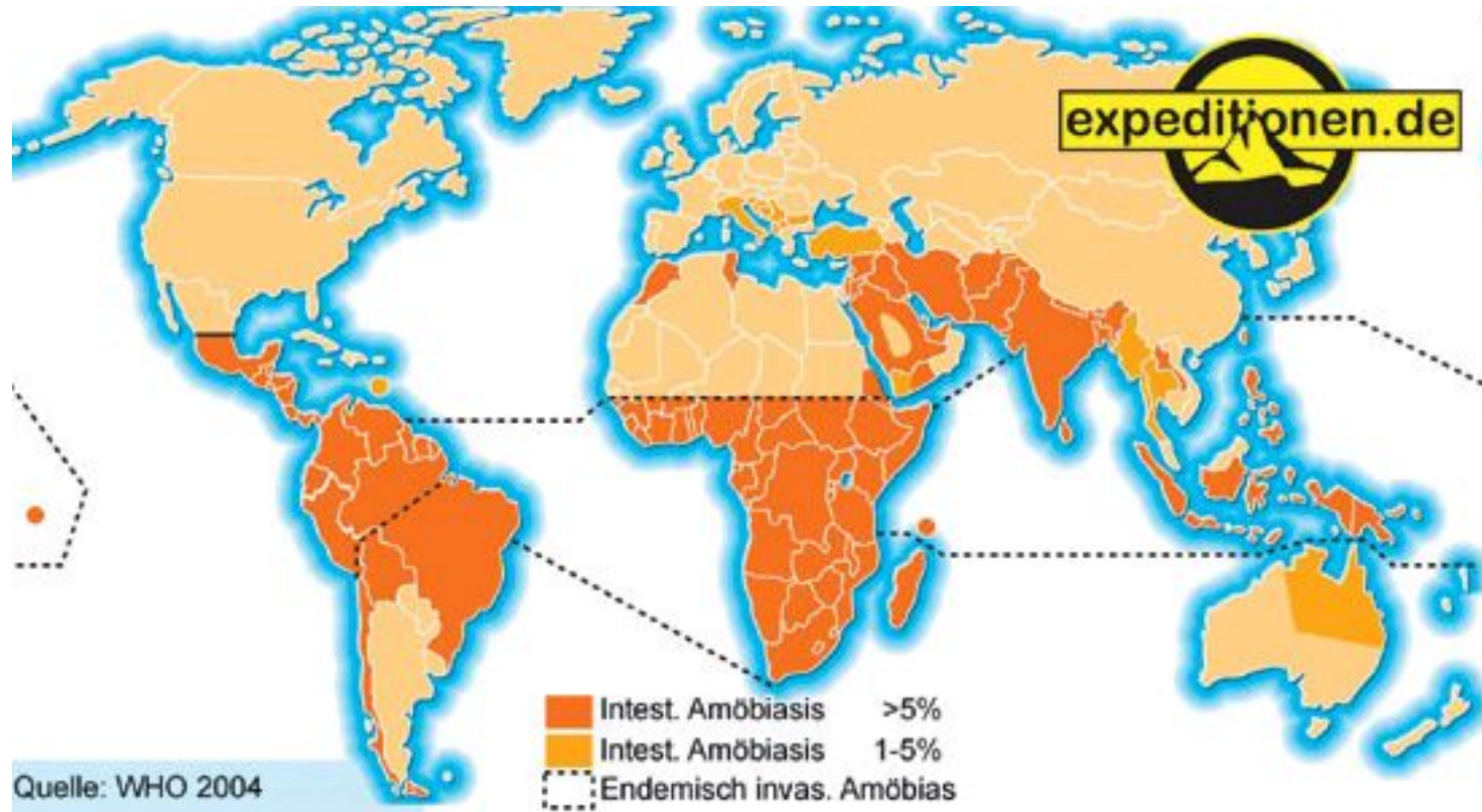


Amoebiasis

Harboring of protozoa *E. histolytica* inside the body with or without disease”

- only 10% of infected develop disease
- two types of infection
 - Extra-intestinal
 - Intestinal- mild to fulminant

Epidemiology



Magnitude

Global: - worldwide in distribution

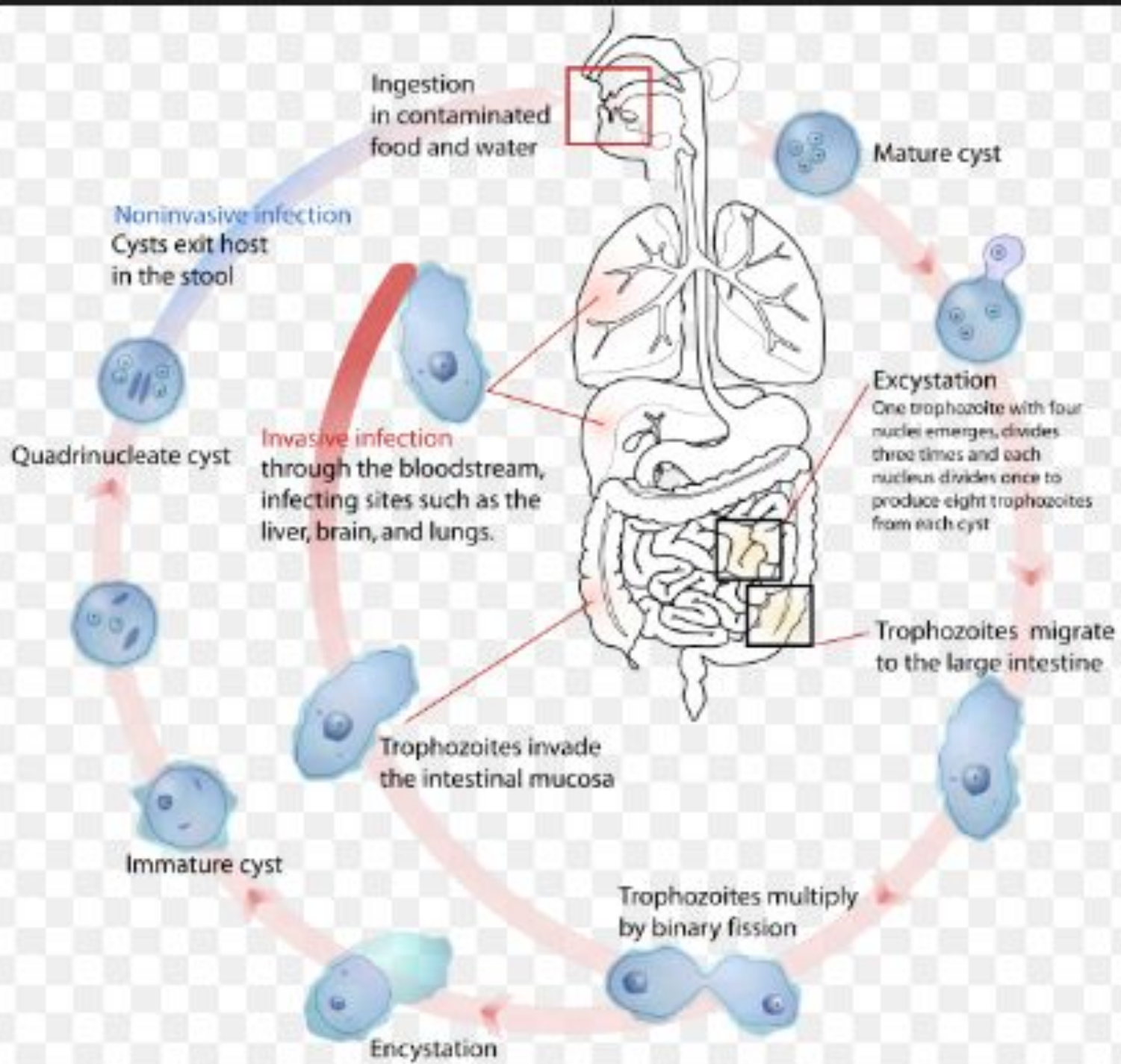
- 3rd most common parasitic death
- India, China, Africa, South America
- 2-60% prevalence
- 100,000 deaths/year
- 500 million infections
- 50 million cases

India: - 15% prevalence (3.6-47.4%)

- variation according to sanitation

Transmission

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



Epidemiology

- **Host**

- All age groups affected
- No gender or racial differences
- Institutional, community living, MSW
- Severe if children, old, pregnant, PEM
- Develops antibodies in tissue invasion

- **Environment**

- Low socio-economic
- Poor sanitation, sewage seepage
- Night soil for agriculture
- Seasonal variation

Host Factor Contributions

- Several factors contribute to influence infection
 - 1 Stress
 - 2 Malnutrition
 - 3 Alcoholism
 - 4 Corticosteroid therapy
 - 5 Immunodeficiency
 - 6 Alteration of Bacterial flora

Risk factors

- People in developing countries that have poor sanitary conditions
- Immigrants from developing countries
- Travellers to developing countries
- People who live in institutions that have poor sanitary conditions
- HIV-positive patients
- homosexuals

Entamoeba histolytica

Causes : Amoebiasis.

Geog.Distribution: cosmopolitan

Habitat: caecum and sigmoido-rectal region of man.

Infective stage:

Quadrinucleate cyst.

Mode of infection:

Eating raw vegetables (salad)

Drinking water **Heteroinfection**

Flies and food handlers (cyst passer)

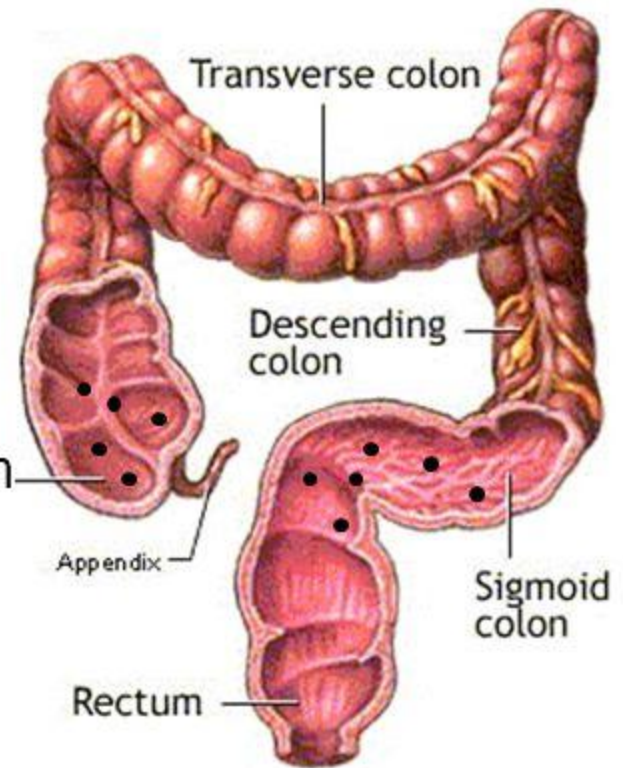
Faeco-oral **Autoinfection**



Trophozoite



Cyst



Incubation period:

- ✓ 3 days in severe infection; several months in sub-acute and chronic form. In average case vary from 3-4 weeks.

Period of communicability:

- ✓ For duration of the illness.

Clinical features

intestinal

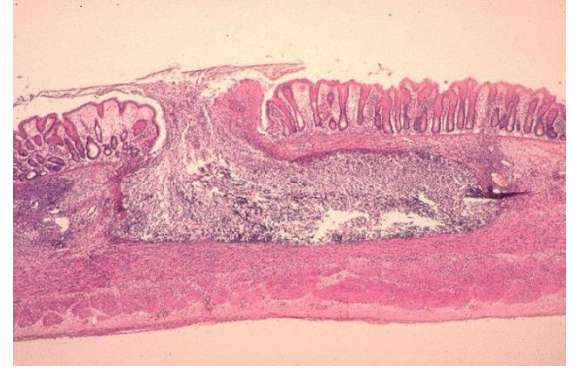
- Asymptomatic carriers
- Amoebic colitis
- Fulminant colitis
- Amoeboma

Extra intestinal

- Liver
- Lung
- Brain
- Skin

Asymptomatic carriers (non invasive form)

- 90% without symptoms
- does not damage lumen



Invasive forms:

Amoebic colitis

- flask shaped ulcers superficial or deep
- abd pain, diarrhea, blood, fever
- tenesmus, peri-anal ulcers

Fulminant colitis - <0.5%

- severely ill with high fever
- intestinal bleeding
- perforation
- paralytic ileus



Amoeboma

- 1% of cases
- inflammatory thickening of intestinal wall
- palpable mass with trophozoites

Symptoms of amoebic colitis

<u>Symptoms</u>	<u>Percentage</u>
1. Diarrhea	100
2. Dysentery	99
3. Abdominal pain	85
4. Fever	68
5. Dehydration	5
6. Length of symptoms	2 to 4 weeks

Symptom	Bacillary dysentery	Amoebic dysentery
<i>Onset</i>	Acute	Gradual
<i>General Condition</i>	Poor	Normal
<i>Fever</i>	High grade	Little fever (adult)
<i>Tenesmus</i>	Severe	Moderate
<i>Dehydration</i>	Frequent	Little dehydration (adult)
<i>Faeces</i>	No trophozoites	Trophozoites present
<i>Culture</i>	Positive	Negative

Extra-intestinal

□ Amoebic liver abscess

- via portal system
- 5% of invasive disease
- 10 times more common in men

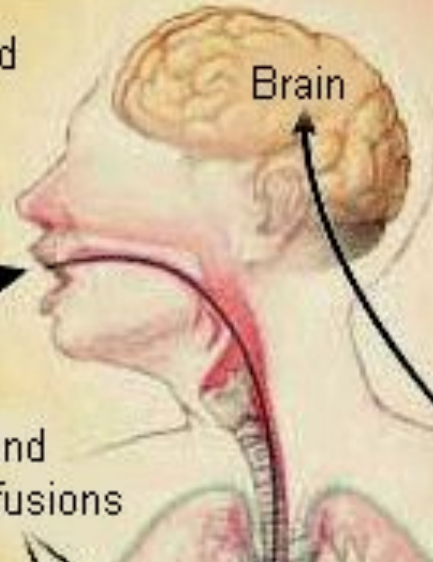
□ Pleuropulmonary

- direct spread from liver abscess (10%)
- haematogenous spread

□ Brain

- abrupt onset & rapid progression
- death in 12-72 hrs

Ingestion of fecally contaminated water or food containing *Entamoeba histolytica* cysts



Brain

Pleural and pericardial effusions

Self-limiting, asymptomatic infection
90% of cases

Invasive Disease
10% of cases

Extraintestinal disease
<1% of cases

Liver abscess

Mucin layer



Colon

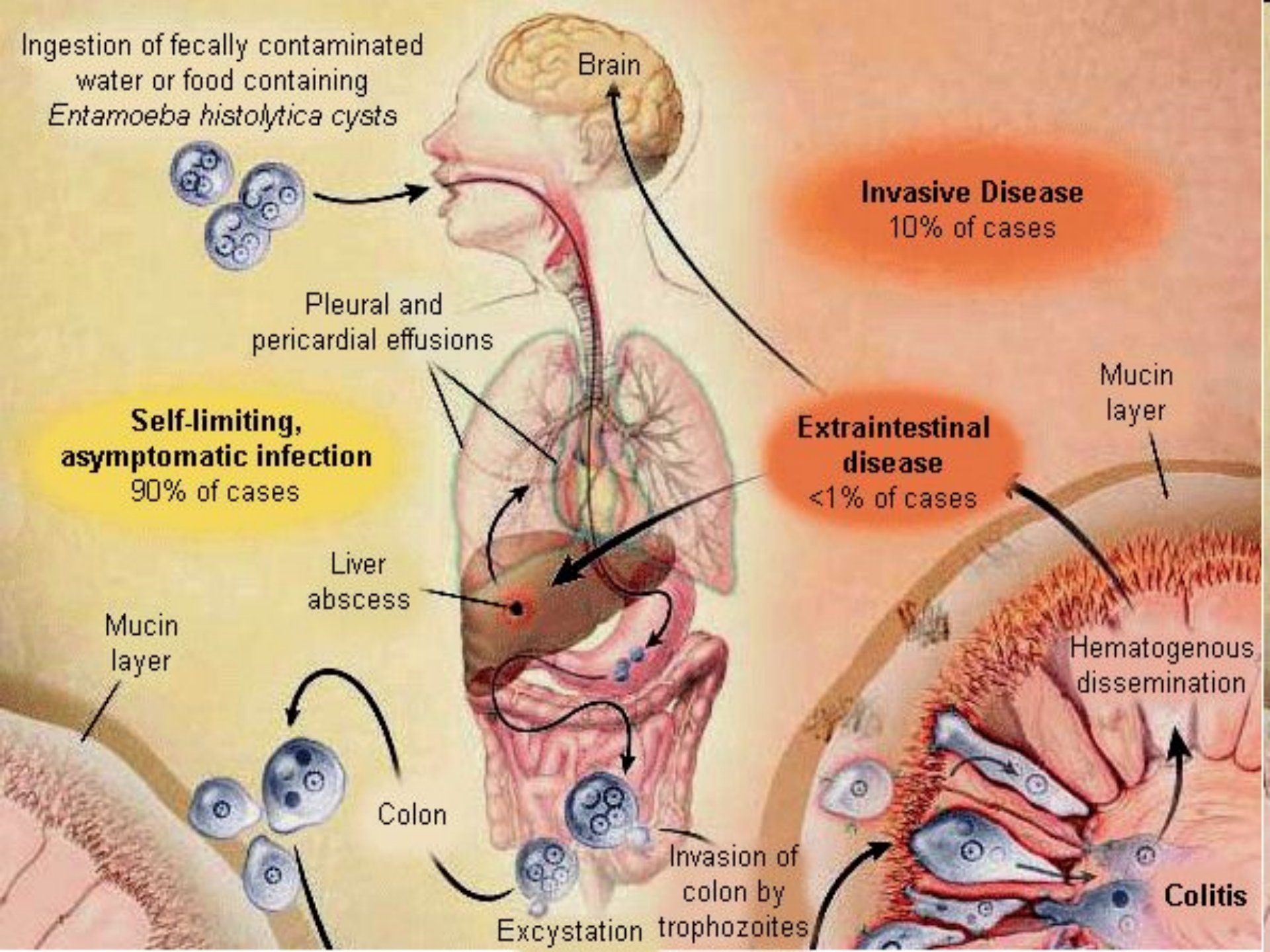
Excystation trophozoites

Invasion of colon by

Mucin layer

Hematogenous dissemination

Colitis



Pyogenic- Liver Abscess



Table 3. Clinical symptoms of 104 cases of hepatic amebiasis in patients at the Hospital João de Barros Barreto

Symptoms	Cases	
	No.	%
Fever	102.0	98.0
Pain	104.0	100.0
Hepatomegaly	84.0	80.0
Jaundice	54.0	54.9
Vomiting	45.0	43.2
Diarrhea	37.0	35.5
Weight loss	32.0	30.7



This is an amebic abscess of liver. Abscesses may arise in liver when there is seeding of infection from the bowel, because the infectious agents are carried to the liver from the portal venous circulation.

Diagnosis

- M/E immediately before cooling
 - fresh mucus or rectal ulcer swab
 - colourless motile trophozoites with RBC
 - quadrinucleated cysts

- Serology –IHA, ELISA
 - usually negative in intestinal

Treatment

- symptomatic cases
- asymptomatic in non-endemic areas
- asymptomatic if food handlers

	Drug			
	Metronidazole	Tinidazole	Iodoquinol	Diloxanide furoate
Acts on	Kills trophozoites in intestine & tissue	Kills trophozoites in intestine & tissue	Luminal-Eradicate cysts	Luminal-Eradicate cysts
Dose	500-750 mg PO tid x 5-10 days	600 mg bd PO x 5 days	650 mg PO tid x10days	500 mg PO tid x10days

Prevention & Control

Primary prevention

- Safe excreta disposal
- Safe water supply
- Hygiene
- Health education

Secondary

- Early diagnosis
- Treatment

Primary prevention

Sanitation

- excreta
- wash hands
- latrines

Water

- protect
- sand filter
- boiling
- food handlers
- examine
- treat
- educate

Food hygiene

- protect food
- acetic acid
- detergent

H edu.

- long term