# Amoebiasis (Amebic Dysentery): Symptoms and Treatment

Amoebiasis is an intestinal infection caused by the protozoan *Entamoeba histolytica*, primarily affecting the colon's mucosal lining. It is a significant global health concern, especially in regions with poor sanitation and low socioeconomic status.

The infection ranges from asymptomatic cyst carriage to invasive disease causing dysentery and extra-intestinal complications such as liver abscess.

## Epidemiology

- Worldwide distribution, endemic in tropical/subtropical areas with poor sanitation.
- Transmission mainly via fecal-oral route.
- Common in populations with low socioeconomic status and poor hygiene.
- Many infected individuals are asymptomatic cyst carriers.
- Approximately 10-20% of infected individuals develop invasive disease.

## Etiology and Life Cycle of *Entamoeba histolytica*

- Exists in two forms:
  - **Trophozoite (vegetative form):** Active, invasive form that multiplies in the intestinal mucosa.
  - **Cyst (infective form):** Environmentally resistant, excreted in stool, infectious to new hosts.
- Cysts survive several days in moist environments such as water, soil, or contaminated food.
- Infection occurs after ingestion of mature cysts, which excyst in the small intestine to release trophozoites.

## Transmission

- **Fecal-oral route:** Contaminated food, water, or direct person-to-person contact.
- **Sexual transmission:** Oral-anal contact, particularly among men who have sex with men.
- **Mechanical vectors:** Flies, cockroaches, rodents.
- Use of untreated human feces ("night soil") in agriculture facilitates spread.
- Incubation period ranges from days to weeks (typically 2-4 weeks).

## Pathogenesis

- Trophozoites invade the colonic mucosa causing flask-shaped ulcers.
- Ulcers may perforate, leading to peritonitis.
- Invasive trophozoites can spread hematogenously, especially to the liver causing **amoebic liver abscess**.
- Can also rarely infect lungs, brain, and skin.

## Clinical Presentation

| Clinical Form | Features |
|---|---|
| **Asymptomatic Carrier** | No symptoms, cysts present in stool |
| **Amoebic Colitis / Dysentery** | Abdominal pain, frequent small-volume bloody diarrhea, tenesmus, fever |
| **Chronic Amoebiasis** | Vague abdominal pain, diarrhea, fatigue, weight loss, intermittent fever |
| **Amoebic Liver Abscess** | Fever, right upper quadrant pain, hepatomegaly, malaise |
| **Extra-intestinal Disease** | Lung abscess, brain abscess, skin ulcers (rare) |

## Diagnostic Investigations

- **Microscopic stool examination:** Identification of trophozoites (may contain ingested RBCs) and cysts.
- **Stool antigen detection:** Differentiates *E. histolytica* from nonpathogenic *E. dispar*.
- **Serology (ELISA, IHA):** Useful for liver abscess; antibodies may persist for years.
- **Molecular methods (PCR):** Gold standard for species differentiation.
- **Imaging (Ultrasound, CT, MRI):** Detect liver abscesses or cerebral involvement.
- **Colonoscopy with biopsy:** Identification of trophozoites in tissue samples.
- **Laboratory tests:** Elevated ESR, mild anemia, leukocytosis without eosinophilia; liver enzymes elevated in hepatic involvement.

## Management

Asymptomatic Carriers

- Treatment only if the patient is a food handler or immunocompromised.
- **Diloxanide furoate** 500 mg orally twice daily for 10 days (luminal agent).

Intestinal Amoebiasis (Amoebic Dysentery)

- **Metronidazole** 500-750 mg orally three times daily for 7-10 days.
- Follow with a luminal agent (diloxanide furoate or paromomycin) to eradicate cysts.

Amoebic Liver Abscess

- **Metronidazole** 750 mg orally or IV once daily for 7-10 days.
- Percutaneous needle aspiration if:
    - Abscess > 5-10 cm,
    - Risk of rupture,
    - Left lobe abscess,
    - Failure to respond to medical treatment.

## Complications

- Fulminant colitis with perforation and peritonitis.
- Rectovaginal fistula, toxic megacolon, and stricture formation.
- Rupture of liver abscess into peritoneal, pleural, or pericardial cavities.
- Disseminated infection: lung abscess, brain abscess.
- Secondary bacterial infections.

## Prevention

- Improve sanitation and access to clean water.
- Proper disposal of human waste.
- Food hygiene and handwashing.
- Regular screening and treatment of food handlers.
- Avoid use of untreated night soil in agriculture.

## Nursing Interventions

1. **Assessment**
    - Monitor vital signs, especially temperature and hydration status.
    - Observe stool frequency, consistency, and presence of blood or mucus.
    - Assess for abdominal tenderness, hepatomegaly, and signs of complications (peritonitis, jaundice).
2. **Hydration and Nutrition**
    - Maintain adequate hydration, administer IV fluids if necessary.
    - Encourage small, frequent meals; avoid irritant foods.
3. **Medication Administration**
    - Administer prescribed anti-amoebic drugs with correct dosages and duration.
    - Monitor for side effects of metronidazole (nausea, metallic taste, neurotoxicity).
    - Educate patient on completing full course to prevent relapse.
4. **Infection Control**
    - Educate on hand hygiene, especially after defecation and before food handling.
    - Use standard precautions to prevent spread.
5. **Patient Education**
    - Teach about disease transmission and prevention measures.
    - Encourage safe sexual practices.
    - Advise on the importance of clean water and food hygiene.
6. **Monitoring for Complications**
    - Observe for signs of worsening abdominal pain, persistent fever, or jaundice.
    - Report immediately signs of liver abscess rupture or peritonitis.
7. **Psychosocial Support**
    - Provide reassurance about the prognosis.
    - Support nutritional and social needs especially in chronic cases.

## High-Yield Notes

- *E. histolytica* trophozoites ingest RBCs (pathognomonic).
- Flask-shaped ulcers in the colon are characteristic.
- Metronidazole kills trophozoites but not cysts; luminal agents eradicate cysts.
- Liver abscess commonly presents with "anchovy paste" pus on aspiration.
- Serology useful for invasive disease diagnosis, not for intestinal infection.