

AMEBIASIS

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Epidemiology

Amebiasis is an infection caused by a protozoan parasite formerly called *Entamoeba histolytica*. *Entamoeba histolytica* has been reclassified into two species that morphologically are identical but genetically distinct.

Entamoeba histolytica and *Entamoeba dispar* organisms are excreted as cysts or trophozoites in stools of infected persons. Infection occurs following ingestion of the cysts. Trophozoites are not infectious because they are destroyed by the acidity of the stomach and intestinal enzymes. The usual mode of transmission in the United States is by person-to-person spread and occasionally through contaminated food, drink or enema equipment.

The incubation period ranges from a few days to months or years, but commonly is one to four weeks.

Infectivity period: Infected patients excrete cysts intermittently, sometimes for years if untreated.

Entamoeba histolytica can be found worldwide but is more prevalent in persons of lower socioeconomic status who live in developing countries where the prevalence of amebic infection may be as high as 50%. The high risk groups in the US are immigrants from endemic areas, long-term visitors to endemic areas, institutionalized persons, and men who have sex with men.

Clinical Description

Entamoeba histolytica causes invasive disease, while *E. dispar* is a noninvasive parasite that does not cause disease.

Several clinical presentations have been associated with *E. histolytica*:

- Asymptomatic infection most likely due to *E. dispar*
- Intestinal amebiasis or amebic colitis: increasing diarrhea progressing to grossly bloody dysenteric stools with lower abdominal pain and tenesmus, weight loss, fever. Progressive involvement of the colon may lead to more severe complications
 - Acute fulminant or necrotizing colitis,
 - Ameboma: annular lesion of the cecum or ascending colon that may be mistaken for colonic carcinoma or as a tender extrahepatic mass mimicking a pyogenic abscess
 - Liver abscess; disease is more severe in the very young, the elderly, and pregnant women.

Immunosuppression, malnutrition, young age and pregnancy contribute to more severe disease.

Surveillance

Amebiasis is not a reportable condition in Louisiana unless occurring as a suspected cluster of cases.

Case Definition

Clinical description

Infection of the large intestine by *Entamoeba histolytica* may result in an illness of variable severity ranging from mild, chronic diarrhea to fulminant dysentery. Infection also may be asymptomatic. Extraintestinal infection also can occur (e.g., hepatic abscess).

Laboratory criteria for diagnosis

Intestinal amebiasis

Demonstration of cysts or trophozoites of *E. histolytica* in stool or
Demonstration of trophozoites in tissue biopsy or ulcer scrapings by culture or histopathology

Extraintestinal amebiasis

Demonstration of *E. histolytica* trophozoites in extraintestinal tissue

Case classification

Confirmed, intestinal amebiasis: a clinically compatible illness that is laboratory confirmed.

Confirmed, extraintestinal amebiasis: a parasitologically confirmed infection of extraintestinal tissue, or among symptomatic persons (with clinical or radiographic findings consistent with extraintestinal infection), demonstration of specific antibody against *E. histolytica* as measured by indirect hemagglutination or other reliable immunodiagnostic test (e.g., enzyme-linked immunosorbent assay)

Laboratory Tests

Identifying trophozoites or cysts by microscopic examination of stool specimens is the primary mode of diagnosis. Examination of serial samples may be necessary. Specimens of stool, endoscopy scrapings (not swabs), and biopsies, should be examined by wet mount within 30 minutes of collection and fixed in formalin and polyvinyl alcohol (available in kits) for concentration and permanent staining.

Serological tests (such as indirect hemagglutination) are useful adjuncts in diagnosing extraintestinal amebiasis. A positive serologic test in asymptomatic persons does not however, necessarily indicate extraintestinal amebiasis.

Stool specimens should be collected in stool containers that contain 5-10% formalin solution or polyvinyl alcohol fixative (P.V.A.). The specimen may be refrigerated. These specimen containers are available from the regional laboratories.

Treatment

Treatment involves elimination of the tissue-invading and intestinal lumen trophozoites. Corticosteroids and antimotility drugs administered to persons with amebiasis can worsen symptoms and the disease process. The following regimens are recommended (Redbook 2003):

- Asymptomatic cyst excretors (intraluminal infections): iodoquinol; alternatively, paromomycin or diloxanide furoate, which are luminal amebicides
- Patients with mild to moderate intestinal symptoms with no dysentery: metronidazole (or tinidazole) followed by a therapeutic course of a luminal amebicide
- Patients with dysentery or extraintestinal disease (including liver abscess): metronidazole (or tinidazole) followed by a therapeutic course of a luminal amebicide.

Dehydroemetine followed by a therapeutic course of a luminal amebicide should be considered for patients for whom treatment of invasive disease has failed. Liver abscess alternatively may be treated with chloroquine phosphate concomitantly with dehydroemetine, followed by metronidazole (or tinidazole).

Investigation (if indicated, outbreak, special cases)

- Upon receipt of a report of a case of amebiasis, contact the physician and/or hospital to confirm the diagnosis.
- Attempt to identify the source of infection (i.e., person-to-person, ingestion of fecally contaminated water, sexually transmitted by oral-anal contact).
- Household members and other suspected contacts should submit stool specimens for testing because of the possibility of asymptomatic carriage.

Prevention

- Exclude symptomatic individuals from food handling and from direct care of hospitalized and institutionalized patients.
- If a common vehicle is identified, such as water or food, appropriate measures should be taken to correct the situation.
- Known carriers should be indoctrinated in the need for thorough handwashing after defecation.
- Educate the public in personal hygiene, particularly in sanitary disposal of feces and in hand-washing after defecation and before preparing or eating food. Discuss the hazards of eating unpeeled or uncooked fruits and vegetables and in drinking water of questionable purity, especially while traveling in tropical areas of the world.
- Educate high risk groups to avoid sexual practices that may permit fecal-oral transmission.
- Isolation of the hospitalized patient: contact precautions should be used in the handling of feces and contaminated clothing and bed linen.