FIVE THINGS TO KNOW ABOUT ...

Entamoeba histolytica

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1

The gastrointestinal pathogen *Entamoeba histolytica* causes amoebiasis

Clinical severity ranges from the asymptomatic passage of cysts in the stool to fulminant dysentery. Potentially fatal extraintestinal amoebiasis, including amoebic liver abscess, complicates 1%–3% of infections.[1] Pregnancy, immunocompromise, corticosteroid use, alcohol abuse and diabetes are risk factors for severe disease.[2] Transmission can be sexual or occur via fecal contamination of food and water.[3] Most infections are acquired abroad in tropical and subtropical areas,[4] although household contacts of a patient with this infection, men who have sex with men and residents of institutions are also at risk.[3]

2

Standard stool examinations for ova and parasites cannot reliably distinguish pathogenic *E. histolytica* from nonpathogenic *Entamoeba dispar*

Stool microscopy reports typically state "*Entamoeba histolytica/dispar* present." Although morphologically identical to *E. histolytica, E. dispar* is a nonpathogenic intestinal amoeba. False-negative result rates for stool microscopy approach 40%, but decrease to 5%–15% with 3 or more specimens examined.[1] Testing to confirm *E. histolytica* by polymerase chain reaction or enzyme immunoassay should be done on a separate, fresh and unpreserved specimen.[5] In developed countries, the prevalence of *E. histolytica/E. dispar* is 2.4% among immigrants, 4% among travellers and 27% among men who have sex with men.[4] Most cases represent *E. dispar* colonization; in 1 Canadian study, only 4.6% of cases involved *E. histolytica*.[4]

3

Infection with *E. histolytica* requires treatment; colonization with *E. dispar* does not

Entamoeba histolytica is a nationally and provincially notifiable disease; *E. dispar* is a harmless commensal with no public health implications. Colonization of the stool with *E. dispar* suggests potential exposure to other pathogens with fecal–oral transmission but does not cause diarrhea.

4

Empiric treatment is rarely warranted

Current guidelines recommend treatment only when *E. histolytica* is identified, or if dysentery of unknown cause persists despite empiric treatment of *Shigella* with consecutive 2-day courses of different antibiotic agents.[6] Suspicion of amoebic liver abscess based on epidemiology and characteristic imaging should prompt empiric treatment.[2]

5

Invasive disease requires dual therapy

Symptomatic amoebiasis requires a 2-drug regimen: an amoebicidal agent, such as metronidazole, and a luminal-acting cysticidal agent, such as iodoquinol.[7] A recent meta-analysis concluded that monotherapy is inadequate for most cases of amoebiasis.[7] Asymptomatic cyst passage is treated with a luminal cysticide to prevent transmission and progression to invasive disease. A summary of therapeutic options is shown in Appendix 1 (available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.121576/-/DC1).

References

1. Fotedar R, Stark D, Beebe N, et al. Laboratory diagnostic techniques for *Entamoeba* species. *Clin Microbiol Rev* 2007;20:532-34.
2. Stanley SL. Amoebiasis. *Lancet* 2003;361:1025-34.
3. Salit IE, Khairnar K, Gough K, et al. A possible cluster of sexually transmitted *Entamoeba histolytica*: genetic analysis of a highly virulent strain. *Clin Infect Dis* 2009;49:346-53.
4. Pillai DR, Keystone JS, Sheppard DC, et al. *Entamoeba histolytica* and *Entamoeba dispar*: epidemiology and comparison of diagnostic methods in a setting of non-endemicity. *Clin Infect Dis* 1999;29:1315-8.
5. *World Gastroenterology Organisation global guidelines. Acute diarrhea in adults and children: a global perspective*. Milwaukee (WI): the Organisation; 2012. Available: www.worldgastroenterology.org/acute-diarrhea-in-adults.html (accessed 2013 Feb. 8).
6. Garcia LS, Smith JW, Fritsche TR. *Cumitech 30A — selection and use of laboratory procedures for diagnosis of parasitic infections of the gastrointestinal tract*. Garcia LS, coordinating editor. Washington (DC): ASM Press; 2003.
7. Gonzales MLM, Dans LF, Martinez EG. Antiamoebic drugs for treating amoebic colitis. *Cochrane Database Syst Rev* 2009;(2):CD006085.

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