Appendix B: Provincial Case Definitions for Reportable Diseases

Disease: Amebiasis

Ontario

Amebiasis

1.0 Provincial Reporting

Confirmed and probable cases of disease

2.0 Type of Surveillance

Case-by-case

3.0 Case Classification

3.1 Confirmed Case

Laboratory confirmation of infection with or without clinically compatible signs and symptoms:

- Demonstration of hypertrophied *Entamoeba histolytica (E. histolytica)* trophozoites in preserved stool samples
  OR
- Positive for *E. histolytica* by stool antigen ELISA on unpreserved stool samples
  OR
- Positive serological test(s) for *E. histolytica*, titre ≥1:512
  OR
- Demonstration of trophozoites in intestinal tissue biopsy or ulcer scrapings (e.g., Iron-Haematoxylin [IH] stained smears)
  OR
- Demonstration of trophozoites in extra-intestinal tissues (e.g., Haematoxylin & Eosin [H & E] stained sections)

3.2 Probable Case

- Clinically compatible signs and symptoms in a person with an epidemiologic link to one or more laboratory-confirmed cases
  OR
- A person with or without clinically compatible signs and symptoms and the presence of *E. histolytica/dispar* cysts and trophozoites by microscopy

4.0 Laboratory Evidence

4.1 Laboratory Confirmation

Any of the following will constitute a confirmed case of Amebiasis:

Intestinal amebiasis

- Demonstration of ingested red blood cells in hypertrophied trophozoites of *E. histolytica* in preserved stool samples
  OR
- Demonstration of positive ELISA for *E. histolytica* on unpreserved stool samples
  OR
- Demonstration of positive serological test(s) for *E. histolytica,* titre ≥1:512
  OR
- Demonstration of hypertrophied trophozoites in tissue biopsies or ulcer scrapings by histological staining or Iron-Haematoxylin staining techniques

Invasive amebiasis

- Demonstration of hypertrophied *E. histolytica* trophozoites in extra-intestinal tissue
  OR
- Demonstration of positive serological test(s) for *E. histolytica,* titre ≥1:512

4.2 Approved/Validated Tests

- O&P screening (Iron-Haematoxylin staining and F-E concentration) on stool samples preserved in Sodium acetate-acetic acid-formalin (SAF) fixative. (If hypertrophied trophozoites of *E. histolytica* found in IH stained smear, no further confirmatory tests required. If positive for *E. histolytica/dispar* by screen, then ELISA on unpreserved stool sample to distinguish between *E. histolytica* from *E. dispar*.)
- Stool antigen detection using ELISA on unpreserved stool samples, to distinguish between *E. histolytica* & *E. dispar*.
- Serological tests (e.g., IgG ELISA test, indirect haemagglutination [IHA] test)
- IH staining of smears prepared from colonic fluids or biopsies preserved SAF fixative
- H&E staining on intestinal or extra-intestinal sections

4.3 Indications and Limitations

- Permanent staining such as IH are for the trophozoite forms; it may not detect the presence of cyst forms, especially when they are few in numbers
- The antigen of *E. histolytica* can only be detected in “fresh” unpreserved stool specimens, not in old or preserved ones
- Colonic fluids may yield positive results provided they are preserved in SAF fixative immediately after collection, *E. histolytica* trophozoites usually show in IH smears prepared from this type of specimens
- H&E sections show the presence of *E. histolytica* trophozoites in the infected tissue but the procedure is time consuming and a negative smear is inconclusive
- Patients with early infections may not exhibit a detectable IgG response. IgM testing is not available.
- Serology tends to be positive with invasive disease (e.g., colitis, hepatic abscess). However, diarrhea alone rarely causes serology to be positive at >1:512.
- Only serum samples are suitable for serology.

5.0 Clinical Evidence

Infection of the large intestine by *E. histolytica* may result in an individual ranging in severity of symptoms from asymptomatic through to mild diarrhea and fulminant dysentery.

Mild symptoms may include intermittent diarrhea (can be bloody), cramps, vomiting and general malaise.

More severe amebic dysentery includes a sudden onset of fever, severe abdominal cramps, and an average of 15 to 20 stools per day consisting of liquid faeces flecked with bloody mucus. Death may occur from peritonitis resulting from gut perforation or from cardiac failure.

Invasive infections may affect various organs. Invasive infection (e.g., hepatic amebiasis, ameboma) may also occur. Invasive amebiasis will always be symptomatic with fever, abdominal pain, malaise and elevated liver function tests (for liver disease).

6.0 ICD Code(s)

ICD 10 Code A06

7.0 Comments

- According to the 2005 case definition, individuals that had an epidemiologic link to a confirmed case met the confirmed case definition. However, based on the 2008 case definition, these cases are now classified as probable.
- Non-hypertrophied "*E. histolytica/dispar*" in stool is not considered as conclusive evidence. Additional testing is required to differentiate between *E. histolytica* and *E. dispar.*

8.0 References

- National Notifiable Diseases Surveillance System. Case Definitions. [Internet]. Amebiasis; 1990. Atlanta, GA: Centers for Disease Control and Prevention (CDC); 2008. [cited 2009 Feb 12]. Available from http://www.cdc.gov/ncphi/disss/nndss/casedef/amebiasis_current.htm.
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