Giardiasis

ICD-10 A07.1

Identification

Case classification:

• Suspected case: A protozoan infection principally of the upper small intestine; it can be asymptomatic; or bring on acute, self-limited diarrhea; or lead to intestinal symptoms such as chronic diarrhea.

• Probable case: steatorrhea, abdominal cramps, bloating, frequent loose and pale greasy stools, fatigue, malabsorption (of fats and fat-soluble vitamins) and weight loss. There is usually no extra intestinal invasion, but reactive arthritis and, in severe giardiasis, damage to duodenal and jejunal mucosal cells may occur.

• Confirmed case: identification of cysts or trophozoites in feces (to rule out the diagnosis at least 3 negative results are needed). Because Giardia infection is usually asymptomatic, the presence of G. lamblia (in stool or duodenum) does not necessarily indicate that Giardia is the cause of illness. Tests using ELISA or direct ﬂuorescent antibody methods to detect antigens in the stool, generally more sensitive than direct microscopy, are commercially available. Where results of stool examination and antigen assays are questionable, it may be useful to examine for trophozoites from duodenal ﬂuid (aspiration or string test) or mucosa obtained by small intestine biopsy.

Infectious agent

Giardia lamblia (G. intestinalis, G. duodenalis), a ﬂagellate protozoan.

Occurrence

Worldwide. Children are infected more frequently than adults. Prevalence is higher in areas of poor sanitation and institutions with children not toilet trained, including day care centers. The prevalence of stool positivity in different areas may range between 1% and 30%.

Reservoir

Humans; possibly beaver and other wild and domestic animals.

Mode of transmission

Person-to-person transmission occurs by hand-to-mouth transfer of cysts from the feces of an infected individual, especially in institutions and day care centers; this is probably the principal mode of spread. Anal intercourse also facilitates transmission.

Incubation period

Usually 3-25 days or longer; median 7-10 days.

Period of communicability

Entire period of infection, often months.

Susceptibility and resistance

Asymptomatic carrier rate is high; infection is frequently self-limited. Pathogenicity of G. lamblia for humans has been established by clinical studies. Persons with HIV infection may have more serious and prolonged giardiasis.

Methods of control

a Preventive measures

1) Educate families, personnel and inmates of institutions, and especially adult personnel of day care centers, in personal hygiene and the need for washing hands before handling food, before eating and after toilet use.

2) Filter public water supplies exposed to human or animal fecal contamination.

3) Protect public water supplies against contamination with human and animal feces.

4) Dispose of feces in a sanitary manner.

5) Boil emergency water supplies. Chemical treatment with hypochlorite or iodine less reliable; use 0.1 to 0.2 ml (2 to 4 drops) of household bleach or 0.5 ml of 2% tincture of iodine per liter for 20 minutes (longer if water is cold or turbid).

b Control measures

1) Report to local health authority: Case report in selected areas.

2) Isolation: Enteric precautions.

3) Concurrent disinfection of feces and articles soiled there- with. In communities with a modern and adequate sewage disposal system, feces can be discharged directly into sewers without preliminary disinfection. Terminal cleaning.

4) Quarantine: Not applicable.

5) Immunization of contacts: Not applicable.

6) Investigation of contacts and source of infection: Microscopic examination of feces of household members and other suspected contacts, especially if symptomatic.

3.16.9c Epidemic measures

Institute an epidemiological investigation of clustered cases in an area or institution to determine source of infection and mode of transmission. A common vehicle, such as water, food or association with a day care center or recreational area must be sought; institute applicable preventive or control measures. Control of person-to-person transmission requires special emphasis on personal cleanliness and sanitary disposal of feces.

Management of the disease

Specific treatment: 5-nitroimidazoles: one daily dose of 2 grams metronidazole (children 15 mg/kg) for 3 days, or tinidazole 2 grams in a single dose (children 50-75 mg/kg) are the drugs of choice. Furazolidone is available in pediatric suspension for young children and infants (2 mg/kg thrice daily for 7-10 days). Paromomycin can be used during pregnancy, but when disease is mild, delay of treatment till after delivery is recommended. Drug resistance and relapses may occur with any drug.