Amebiasis is caused by the protozoan parasite *Entamoeba histolytica*, transmitted through the fecal-oral route. The parasite is released in the feces as cysts, which may contaminate drinking water or foods. Once the cysts are ingested and reach the small intestine, they undergo excystation and become trophozoites. Trophozoites migrate to the colon and cause mucosal ulcers in 5-10% of infected persons, resulting in "intestinal amebiasis". This condition is associated with dysenteric signs or symptoms, such as mucous and bloody stool, diarrhea, tenesmus (feeling of incomplete defecation) and abdominal pain. Occasionally, the trophozoites migrate hematogenously further to the liver, lung, brain or skin and produce local abscesses resulting in "extraintestinal amebiasis", which is clinically more serious. The World Health Organization estimates that globally several tens of thousands of people die of amebiasis annually.

*E. histolytica* infects experimental cynomolgus monkey as well as humans. *E. dispar* infects monkeys as well as humans but is nonpathogenic and does not require treatment. While *E. nuttalli* has been detected from Japanese monkeys, its pathogenicity to humans is unknown (see p. 249 of this issue).

**Reports under the National Epidemiological Surveillance of Infectious Diseases (NESID) system**

Amebiasis is a category V notifiable infectious disease under the Infectious Diseases Control Law. A physician who has made a diagnosis of amebiasis (excluding asymptomatic cases) shall notify the case within 7 days (see http://www.nih.go.jp/niid/images/iasr37/442/de4421.pdf for the notification criteria).

Reports of amebiasis have been increasing in Japan in recent years (IASR 28: 103-104, 2007), and much of this increase has been due to increase in cases infected domestically (Fig. 1). Among 9,301 cases reported from week 1 of 2007 to week 43 of 2016 (as of 23 November 2016), 7,753 cases (83%) were infected in Japan. There were 1,302 cases infected abroad (including 228 cases that had visited two or more countries and 102 cases whose country of travel was unknown), such as in China (179 cases), Thailand (149 cases), Indonesia (139 cases), Philippines (82 cases), India (59 cases), Republic of Korea (53 cases), Vietnam (47 cases), Taiwan (42 cases), and Cambodia (37 cases).

**Age and sex distribution:** As reported previously, the majority of reported cases were male (IASR 28: 103-104, 2007); among notified cases, 8,181 were male (88%) and 1,120 were female (12%). The median age of cases was 50 years (interquartile range: 41-59 years) for males and 40 years (interquartile range: 31-48 years) for females (Fig. 2). Among females, 115 cases were reported as fatal cases at the time of notification; 37 were male (1 case in his 30s, 5 cases in their 40s, 9 cases in their 50s, 9 cases in their 60s, 8 cases in their 70s and 5 cases in their 80s) and one female in her 70s.

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**Figure 1.** Number of reported amebiasis cases by year, from 2007 to 2016, Japan

![Number of cases vs. Year of diagnosis](image)

**Figure 2.** Age distribution of amebiasis cases by gender, from week 1 of 2007 to week 43 of 2016, Japan

![Age distribution vs. Number of cases](image)

(Continued on page 240)
Clinical types: Among notified cases, 7,783 were intestinal amebiasis, 1,131 were extraintestinal amebiasis and 407 were both intestinal and extraintestinal amebiasis cases. While it was reported previously that the extraintestinal type was more frequently reported among males than among females (20% vs. 12%, respectively) (IASR 28: 103-104, 2007), in the present data (week 1 of 2007-week 43 of 2016), the frequency was comparable, i.e., 12.2% (998/8,181) in males and 11.9% (135/1,120) in females. In recent years, as intestinal amebiasis cases with specific clinical manifestation of colonic mucosa lesions (but otherwise asymptomatic) have been increasing reported in males, the increased detections from colonoscopy may be contributing to the rise in notifications (see pp. 241 & 246 of this issue).

Geographical distribution: As in 2003-2006 (IASR 28: 103-104, 2007), during week 1 of 2007-week 43 of 2016, prefectures with major urban areas, such as Tokyo, Osaka and Kanagawa, reported both the largest number of cases and largest notification rate per million population (Table).

Infection route: Among the 9,301 cases, the presumed infection route was unknown for 49% of all cases (4,521 cases: 3,984 males and 537 females). Infections attributed to oral consumption (e.g. uncooked foods, fresh fruits or water) occupied 22% of the total cases (2,080 cases: 1,778 males and 302 females), though the specific source was not identified in more than 80% of the cases. Sexual transmission occupied 28% of all cases (2,700 cases: 2,419 males and 281 females); among males, infection through heterosexual contacts accounted for 1,090 cases and homosexual contacts for 864 cases, while among females, heterosexual infection accounted for 221 cases and homosexual contacts for 6 cases (for both genders, bisexuals were included in the homosexual contact category). Though amebiasis among men who have sex with men (MSM) have been well known (see p. 242 of this issue) (IASR 28: 103-104, 2007), during week 1 of 2007-week 43 of 2016, prefectures with major urban areas, such as Tokyo, Osaka and Kanagawa, reported both the largest number of cases and largest notification rate per million population (Table).

Laboratory diagnosis: Definitive diagnosis requires laboratory diagnosis to detect the presence of Entamoeba histolytica. Though amebiasis among men who have sex with men (MSM) have been well known (see p. 242 of this issue) (IASR 28: 103-104, 2007), during week 1 of 2007-week 43 of 2016, prefectures with major urban areas, such as Tokyo, Osaka and Kanagawa, reported both the largest number of cases and largest notification rate per million population (Table).

Treatment

Oral administration of metronidazole, which became covered by national health insurance specifically for the treatment of amebiasis since August 2012, is highly effective and the mainstay of treatment of amebiasis (see pp. 243 & 245 of this issue). Paromomycin, which is considered to be effective against cyst carriers, has also been covered by national health insurance since December 2012.

Future challenges

In recent years, reports of non-fulminant amebiasis cases have been increasing (see pp. 241 & 248 of this issue). While asymptomatic cases do not require notification, as asymptomatic carriers are potential sources of infection, and some will go on to become fulminant, treatment of such carriers is important. Among domestically infected amebiasis cases, while attention has been paid for amebiasis among MSM, reports of CSW cases (see p. 243 of this issue) continue. The recent increase in notifications of amebiasis caused by heterosexual contacts may be associated with diversification of sexual behaviors in recent years, which may result in the ingestion of cysts. Measures against amebiasis should be considered within a comprehensive framework of control measures against sexually transmitted infections.