Amebiasis in Acquired Immunodeficiency Syndrome

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Amebiasis is an infection caused by the intestinal protozoan Entamoeba histolytica (E. histolytica). About 90% of infections are asymptomatic, and the remaining 10% of infections produce a spectrum of clinical syndromes ranging from dysentery to abscesses of the liver or other organs. Most asymptomatic carriers harbor nonpathogenic strains (E. dispar) which do not cause invasive disease. Some patients infected with pathogenic strains do not develop invasive amebiasis and remain asymptomatic. Host factors play a role in the development of invasive disease.

Epidemiologically amebiasis is one of the most important infectious diseases in the world. About 10% of the world’s population (more than 500 million people) is infected with E. histolytica. Areas of highest incidence are developing countries including Central and South America, tropical Asia and Africa. Amebiasis is the third most common cause of death from parasitic disease after shistosomiasis and malaria. In developed countries, travelers, immigrants and homosexual men are at risk. Patients with acquired immunodeficiency syndrome (AIDS), an advanced human immunodeficiency virus (HIV) infection, are in the highest risk group of invasive amebiasis. Patients with HIV infection develop various kinds of opportunistic infections. Diarrhea secondary to opportunistic pathogens is a common problem in HIV-infected patients. Morbidity and mortality are increased in AIDS patients with chronic diarrhea secondary to opportunistic infections, and chronic diarrhea is an independent marker of a poor prognosis (1). The most common cause of lower gastrointestinal bleeding in AIDS patients is thought to be cytomegalovirus (CMV) colonic disease (1), and in one study amebic colitis and CMV colitis were the two leading causes of prolonged diarrhea in patients with AIDS (2). Most HIV-infected individuals with asymptomatic amebic infection have E. dispar but some of them can develop invasive amebiasis by E. histolytica (3). Amebiasis is an important emerging opportunistic infection in AIDS patients in an area endemic for amebic infection, where food-borne exposure is prevalent. For example in Taiwan (4), 6.1% of the patients with HIV infection have invasive amebiasis. In India it is reported that Cryptosporidium sp. (94.4%) and Isospora sp. (10.7%) are predominant over E. histolytica (5.6%) among the HIV positive asymptomatic injecting drug users (5).

On the other hand, in developed countries the incidence of amebiasis is low among HIV-infected patients: 13.5 cases per 10,000 person-years in the United States (6). However it is important as one type of sexually-transmitted diseases: transmitted by oral and anal sexual practices. While the overall prevalence of amebiasis is approximately 4% in the United States, certain high-risk groups have a much higher incidence of infection and disease. Prevalence of E. histolytica or E. dispar in the gay population of New York City and San Francisco approached 40 to 50% (7). Some Japanese literature (8, 9) also showed homosexual contact was an important risk factor for amebic infection.

In this issue of Internal Medicine, Mitarai et al (10) presented 6 Japanese homosexual AIDS patients with amebiasis (colitis and/or liver abscess).

The clinical manifestations of amebiasis in 4 out of their 6 patients were severe invasive amebiasis: 2 died of colonic perforation and 2 required drainage therapy with metronidazole for liver abscess. In addition to amebic infection 3 of them had other opportunistic infections including miliary tuberculosis, pneumocystis carinii pneumonia, CMV pneumonia, oral candidiasis and syphilis, some of which affected their grave prognosis. It is true that not all patients with amebic infection are afflicted with disease and the prophylactic utilization of metronidazol is not indicated in amebic cysts carriers (11). However, patients with impaired cellular immunity (patients receiving glucocorticoids, patients with AIDS etc.) are at risk for severe disease and the diagnostic delay may lead to life-threatening conditions (10, 12).

The diagnosis of amebiasis is made by the detection of trophozoites from the patient’s stool or the colonic lesion obtained by colonoscopic biopsy or operation. However, as in Mitarai’s 2 cases (cases 1 and 5) whose clinical specimens did not contain trophozoites, serological tests for anti-amebic antibody (9, 10) are useful to identify amebic infection. Endoscopic examination is also helpful to give a correct diagnosis in AIDS patients with chronic diarrhea without definite diagnosis (2).

Lastly, there is an interesting report that a soluble protein derived from an invasive strain of E. histolytica induced lymphoblastic responses of HIV-infected T lymphocytes and HIV replication (13). Moreover, another protozoa leishmania donovani and its surface molecule, lipophosphoglycan, can activate HIV-1 replication in monocytoid cells (14). Co-infection of protozoa and HIV might be responsible for HIV disease progression. Further studies are necessary to confirm this hypothesis.

The number of patients with HIV infection is increasing in Japan and the number of E. histolytica-infected patients could...
also increase because of frequent travel to and from the endemic areas. Therefore it seems to be very important to investigate the prevalence of amebic infection in individuals at higher risk. It is critical to be aware of amebiasis when HIV-infected patients, especially homosexual men, develop gastrointestinal symptoms.

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