Symposium

**S—I—1) CURRENT STATUS OF EMERGING PROTOZOAL INFECTIOUS DISEASES:
CRYPTOSPORIDIOSIS, CYCLOSPORIASIS, AND MICROSPORIDIOSIS**

MOTOHIRO ISEKI

Department of Parasitology, Graduate School of Medical Science, Kanazawa University

Cryptosporidiosis, caused by *Cryptosporidium parvum* infection, is recognized as acute, self-limiting, gastroenteritis in immunocompetent humans and persistent and potentially fatal in immunocompromised subjects, particularly those with AIDS. The number of the infection is estimated to be 250 millions to 500 millions every year, in both developed and developing countries. Recently, reports of imported cases among travelers to less developed countries, domestic infections among both immunocompetent or immunocompromised hosts, and outbreaks associated with public water supply are increasing in Japan. Diagnostic methods for demonstrating the oocyst or antigens in clinical specimens are well developed. While, we still have no consistently effective chemotherapeutic agent for use. Development of effective drugs for treatment and of control measures for waterborne outbreaks is urgently needed.

Cyclosporiasis is caused by *Cyclospora cayetanensis* infection. The organism is a newly recognized coccidian parasite inhabiting small intestinal epithelial cells and causes prolonged watery diarrhea, fatigue, and anorexia in humans was reported at least as early as 1979, it was initially called a coccidian-like body or a cyanobacterium-like body (CLB). In 1993, the organism was identified as a protozoan of the genus *Cyclospora*, and the species name of *C. cayetanensis* was proposed in 1994. The disease is widely distributed in tropical and subtropical countries. Since 1996,

more than 10 cases among travelers to developing countries and a case suspected to be infected by ingesting imported fresh vegetables have been reported in Japan. Symptomatic infections can be treated with trimethoprim-sulfamethoxazole.

Microsporidiosis, caused by infection with several species of the phylum Microspora, is an important opportunistic infectious disease among AIDS patients and appears to have worldwide distribution. At present, 13 species of microsporidia have been identified as potential pathogens in humans. The first report of diarrheal syndromes associated with microsporidiosis and HIV infection was published in 1985, and the number of case reports increased rapidly after 1990. Chronic diarrheas caused by *Enterocytozoon bieneusi* or *Encephalitozoon intestinalis* infection are frequently observed among AIDS patients. While, *Enc. hellem* and *Enc. cuniculi* cause keratoconjunctivitis and disseminated infection, *Pleistophora* spp. and *Nosema* sp. cause myositis. Recently, cases of microsporidiosis have been reported in Japan. Microscopic detection of the parasite requires special staining methods and adequate microscopic techniques. Although two agents, fumagillin and albendazole, have been reported to have activity against microsporidia both in vitro and in vivo, treatment efficacy is poor except in the case of infections caused by Encephalitozoonidae.

**S—I—2) CRYPTOSPORIDIOSIS AND CYCLOSPORIASIS:
THE CLINICAL FEATURES AND OCCURRENCE IN JAPAN**

GOHTA MASUDA

President, Tokyo Metropolitan Kiyose Children's Hospital

◆Cryptosporidiosis

Cryptosporidium sp. (mainly *C. parvum*) causes transient non-bloody diarrhea in normal hosts, while this pathogen produces severe, intractable, and recurrent non-bloody diarrhea, and in some cases biliary tract and/or respiratory tract infections in immunodeficient hosts. Gut infections

with this pathogen tend to demonstrate various degrees of diarrhea, abdominal cramps, flatulence, general fatigue, nausea and vomiting. Many sporadic diarrheal cases due to this protozoa are thought to exist in Japan, however, when such patients seek medical care, they are often misdiagnosed to have culture-negative and antimicrobial-refractory diarrhea.

Large waterborne outbreaks of diarrheal illness due to this pathogen have been reported in Japan involving 461 patients (in Kanagawa-ken, 1994), 8,812 patients (in Saitama-ken, 1996), 129 and 170 patients (in Niseko and Toyako lake side in Hokkaido, respectively, in 2000).

From a prospective study performed at Tokyo Metropolitan Komagome Hospital from 1990 to 2000, *Cryptosporidium* oocysts were positively detected in 18 out of 508 specimens (3.5%) from diarrheal patients who had recently traveled overseas, in none of 605 specimens (0%) with no history of overseas travel, and in 4 out of 140 specimens (2.9%) from HIV infected patients.

◆Cyclosporiasis

Cyclospora cayetanensis causes non-bloody watery diarrhea which clinically resembles cryptosporidial diarrhea except for the fact that diarrhea with *C. cayetanensis* tends

to be recurring. The administration of sulfamethoxazole/trimethoprim is usually effective for this kind of diarrhea. Cyclosporiasis in immunodeficient patients tends to lead to diarrhea with longer duration than that observed in normal hosts, and this infection is usually non-fatal even in these patients.

A few sporadic cases of *Cyclospora* enteritis have been reported in Japan. A study based on 1,071 stool specimens observed from patients at Tokyo Metropolitan Komagome Hospital from 1996 to 2001 indicated the positive rate of this protozoa among diarrheal illness to be 0.7% (3 out of 410 stool specimens were positive) in patients with a recent history of overseas travel, none (0/513 specimens) in indigenous diarrheal patients, and 0.7% (1/148 specimens) in HIV-infected patients.

S—I—3) EMERGING AND RE-EMERGING ARBOVIRAL INFECTIOUS DISESES

TOMOHIKO TAKASAKI and ICHIRO KURANE

Department of Virology 1, National Institute of Infectious Diseases

Arboviruses are one of the major pathogens of emerging and re-emerging infectious diseases. West Nile fever (WNV) epidemics since 1999 in the United States and dengue outbreak in Hawaii during 2001-2002 are valuable lessons. Global warming is a favorable condition for in-

sects such as mosquitoes and ticks. We need to pay more attention to emerging and re-emerging arboviral infectious diseases in Japan as well as in other areas of the world.

Key words: West Nile virus, dengue virus, imported case

S—I—4) CURRENT STATUS OF EMERGING AND RE-EMERGING BACTERIAL INFECTIOUS DISEASES

TSUYOSHI NAGATAKE

S—II—1) DETECTION OF NEW ENDEMIC AREAS OF CUTANEOUS LEISHMANIASIS IN PAKISTAN: A SIX-YEAR STUDY

ABDUL MANAN BHUTTO¹, RASHID AHMED SOOMRO¹, SHIGEO NONAKA² and YOSHIHISA HASHIGUCHI³

1. Department of Dermatology, Chandka Medical College/Hospital Larkana, Sindh, Pakistan
2. Department of Dermatology, Faculty of Medicine, University of the Ryukyus, Okinawa, Japan
3. Department of Parasitology, Kochi Medical School, Nankoku, Kochi, Japan

Cutaneous Leishmaniasis (CL) is endemic in Pakistan and is widely spreading. We report some new endemic areas of CL in the country. A total of 1210 cases of CL visited

our department from 1996 to 2001. Among them, 760 were the residents of Jacobabad, Larkana and Dadu districts of Sindh province and had never been traveled to the endemic