Identification of Cryptosporidium felis and another opportunistic infections among patients with primary and acquired immunodeficiency

Małgorzata Bednarska¹, Anna Bajer¹, Irena Jankowska², Karolina Piweżyńska³, Beata Wolska-Kuśnierz³, Małgorzata Wielopolska⁴, Andrzej Pawelas⁵, Renata Welc-Falęciak¹

¹Department of Parasitology, Institute of Zoology, Faculty of Biology, Warsaw University, Miecznikowa 1, 02-096 Warsaw, Poland; ²Gastroenterology, Hepatology and Immunology Clinic, ³Immunology Clinic, Children’s Memorial Health Institute, Al. Dzieci Polskich 20, 04-730 Warsaw, Poland; ⁴Pediatric Department in General Hospital, ul. Konarskiego 13, 05-400 Otwock, Poland; ⁵Department of Gastroenterology, Hepatology and Clinical Oncology, Medical Center for Postgraduate Education, ul. Roentgena 5, 02-781 Warsaw, Poland

Corresponding Author: Małgorzata Bednarska; e-mail: mabed@biol.uw.edu.pl

Intestinal opportunistic infections are often caused by unicellular parasites. Persons with decreased immunity are particularly susceptible to infections and severe illness. The most common first symptoms of intestinal parasitic infections are diarrhoea or other intestinal disorders. Diarrhoea is often chronic and prolonged in the course of the opportunistic diseases. Persistent infections can lead to dehydration and weight loss and be life-threatening. Cryptosporidium spp. are the most commonly detected microparasites in immunodeficient patients. Until now, about 30 species and genotypic variants of Cryptosporidium species have been described in mammals, birds, reptiles, amphibians or fish. Most human cases are caused by two species: C. parvum which also infects more than 100 species of mammals, and C. hominis which mainly infects humans. Less common species typical of animals, such as C. meleagridis, C. felis, C. canis, C. muris and C. suis, have also been reported in humans, usually those with immunodeficiency. Other opportunistic parasite species, such as Microsporidia, Cyclospora, Cystoisospora or Blastocystis, may also be commonly associated with gastrointestinal opportunistic diseases. The present study determines the prevalence of intestinal micro-pathogens in hospitalised patients with different immunological status and describes the first example of an intestinal infection caused by C. felis in a liver transplant recipient from Poland. In total, 5% (n=14) of the 283 study participants (46 immunocompetent and 237 immunocompromised) were found to be infected with intestinal parasites, as detected by microscope, immunofluorescence or PCR techniques. Additionally, three transplant recipients under 18 years old were infected with E. coli bacteria closely related to enteroinvasive strains (99% homology). Parasites were found in both immunocompetent and immunocompromised patients. The prevalence of Apicomplexa infections with Cryptosporidium or Cyclospora species was significantly associated with diarrhoea and heavy immunodeficiency.

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