

LOW PREVALENCE OF *CRYPTOSPORIDIUM PARVUM* IN HOSPITALIZED CHILDREN IN KOTA BHARU, MALAYSIA

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Abstract. The aim of this prospective study was to determine the prevalence of *Cryptosporidium parvum* in hospitalized children in Kota Bharu, Malaysia. Over a 19 month study period, 258 stool samples were examined from 159 children; 109 with diarrhea and 50 controls without diarrhea. Modified Ziehl-Neelsen staining method and a polymerase chain reaction (PCR) assay were used to detect *C. parvum* and the samples were also examined for the presence of other intestinal parasites. Only 1 of the 109 (0.9%) children with acute diarrhea was positive for *C. parvum* by microscopy and PCR. Thirty-one percent of children were infested with other intestinal parasites, the most common being *Ascaris lumbricoides* and *Trichuris trichiura*. In conclusion, we found *C. parvum* to be an uncommon infective agent in hospitalized children with or without diarrhea in Kota Bharu, Malaysia.

INTRODUCTION

Cryptosporidium parvum is an important cause of gastroenteritis in children worldwide, with prevalence rates varying from 1 to 4% in the developed world (Baxby and Hart, 1986) and 6 to 17% in the developing world (Salon *et al.*, 1990; Enriquez *et al.*, 1997). This coccidian protozoan usually causes a self-limiting watery diarrhea lasting 10 to 14 days in immunocompetent hosts. However, a protracted life-threatening illness can occur if the host is immunocompromised. Infection occurs following ingestion of oocysts, which are transmitted via the fecal-oral route and via contaminated water supplies. The source of infection is humans with animals such as cattle or domestic pets being possible sources (Juraneck, 1995).

Kelantan is a predominantly rural state in the northeast of peninsular Malaysia. Lai (1992) reported that 11.4% of hospitalized children with diarrhea in Kota Bharu, the capital of Kelantan State, were positive for *C. parvum*. This is much higher compared with prevalence data from other parts of Malaysia: 4% in Penang (Mat Ludin *et al.*, 1991) and 2% in Kuala Lumpur (Ng and Shekhar, 1993). *C. parvum* isolates can be characterized at the molecular level (Morgan *et al.*, 1997) and given that the prevalence of *C. parvum* was reported to be relatively high in Kota Bharu, a molecular epidemiological study was planned to determine the extent and nature of genetic variation in *Cryptosporidium* isolates from north east Malaysia. The aim of the present study was to confirm the high prevalence of *C. parvum* in children and collect *C. parvum* samples for the molecular epidemiological study.

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MATERIALS AND METHODS

This was a prospective study conducted