

# 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