

# PREVALENCE AND IDENTIFICATION OF *CRYPTOSPORIDIUM* INFECTION IN PEDIATRIC PATIENTS

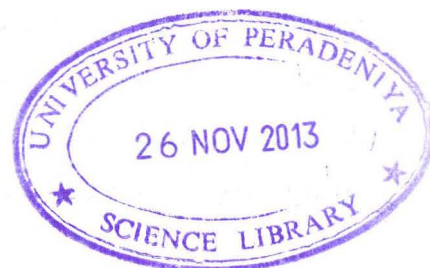
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*Cryptosporidium* is an obligatory intracellular extracytoplasmic intestinal coccidian parasite that infects a variety of animals including humans. Human cryptosporidiosis is caused by several cryptosporidial species. Among them more common species are *Cryptosporidium hominis* and *Cryptosporidium parvum*. This is the first report of molecular analysis of *Cryptosporidium* species in paediatric diarrhoeal patients in Sri Lanka.

This study identified *Cryptosporidium* species and examined the prevalence and distribution of Cryptosporidiosis in patients admitted to 4 different hospitals. Samples were concentrated by Formol- Ether sedimentation technique. Concentrated samples stained by the Modified Ziehl Neelson staining procedure. If the sample was stained positive for *Cryptosporidium*, remaining samples were concentrated by Sheather's sugar flotation technique.

DNA was extracted from all MZN positive samples by using Promega DNA extraction kit. *Cryptosporidium* ribosomal gene fragment was amplified using PCR in the genomic DNA with Cry2 and Cry 4 primers by hot short method. The relative specificity of these primers for the amplification of *Cryptosporidium parvum* by PCR has been demonstrated previously. Agarose gel electrophoresis was performed in 1 × TBE buffer at using 1.5% agarose gel to visualize PCR products.

MZN method showed cryptosporidial oocysts as dark pink colour spherical bodies with the size of about 4-5  $\mu\text{m}$  in diameter. In this study 8 stool samples were positive for *Cryptosporidium* species by MZN. The highest prevalence (13.6%) was detected in Teaching Hospital, Kandy and lowest prevalence (0%) was detected in the Teaching

Hospital, Peradeniya. Out of 8 stain positive samples *C. parvum* was detected in 1 (12.5%) sample and other 7 (87.5%) samples were negative for *C. parvum* by PCR.

The majority of patients with cryptosporidiosis had watery diarrhoea and contact with goats when compared to contact with other animals. The majority of human *Cryptosporidium* isolates were identified as non-*Cryptosporidium parvum* species (87.5%) and only one isolate was identified as *Cryptosporidium parvum* (12.5%), suggesting the need for further extensive studies to explore the association of *Cryptosporidium* infection with diarrhoea in children in Sri Lanka.