

## Prevalence and Identification of *Cryptosporidium* Species in Post-renal Transplant Patients in Sri Lanka

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Cryptosporidiosis, caused by *Cryptosporidium* spp., is one of the major causes of diarrhoeal disease worldwide. It causes self-limiting disease in immunocompetent patients and life-threatening disease in the majority of immunosuppressed patients. However, there is limited data available regarding cryptosporidiosis, specifically in post-renal transplant patients (PRT) in Sri Lanka. Hence, this study aimed to determine the prevalence of *Cryptosporidium* species and identify associated risk factors in this patient population. The study was carried out on PRT patients attending nephrology clinics at teaching hospitals Kandy and Peradeniya between January 2020 and December 2022. An information sheet was used to collect demographic and risk factors. Faecal samples were collected and transported to the laboratory. Samples were concentrated using modified formalin ethyl acetate and stained with the Modified Ziehl-Neelsen (MZN) stain. All the *Cryptosporidium* oocyst-positive samples were subjected to PCR using *Cryptosporidium* genus specific primers. A chi-square comparison test was utilized to assess correlation. Of 430 consented patients, 209 faecal samples were collected. Among them, the majority were males (163, 52.6%) and aged between 1 and 70 years (mean age 42). Of the 209 stool samples tested, 11 (5.3%) were positive for *Cryptosporidium* oocysts on MZN staining and PCR. A significantly high *Cryptosporidium* positivity was in patients aged 36–50 years ( $P=0.02$ ). Out of 209, 28 had diarrhoea and all the *Cryptosporidium* positives had diarrhoea. *Cryptosporidium* infections were significantly associated with occasionally drinking boiled water ( $P=0.001$ ) and washing hands after going to toilets ( $P=0.05$ ). Sources of drinking water, animal contact, and washing hands before meals were not significantly associated with *Cryptosporidium* infection. In conclusion, present study identified *Cryptosporidium* as one of the etiological agents causing diarrhoea. It is important to practice good personal hygiene and consume boiled water to prevent transmission. Furthermore, this study recommends routine screening for *Cryptosporidium* oocysts in all PRT patients.

**Keywords:** *Cryptosporidium*, Post-renal transplant patient, Immunocompromised, Diarrhoea, Modified Ziehl-Neelsen stain.

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