

ABSTRACT

Prevalence of *Campylobacter* species and *Yersinia enterocolitica* in stools among children aged less than 12 years with acute gastroenteritis in selected tertiary care hospitals in the Colombo District.

Background: Yersiniosis and campylobacteriosis are important food and water-borne zoonotic gastrointestinal infections. Ease of performance and a rapid turn-around-time has made *Campylobacter* antigen detection the assay of choice in busy clinical microbiology laboratories. There are no published studies regarding the incidence of *Campylobacter* detection using ELISA and no microbiological studies have been carried out to determine the presence of *Yersinia enterocolitica* in stools in children with acute diarrhoea in Sri Lanka in recent times.

Objectives: To determine the prevalence of *Campylobacter* spp. by enzyme-linked immunosorbent assay (ELISA) and *Yersinia enterocolitica* by culture in stools and determine factors associated with *Campylobacter* spp. and *Yersinia enterocolitica* diarrhoea in hospitalised children in the Colombo District.

Methodology: A hospital-based, descriptive, cross-sectional study was carried out over 04 months. Study population was 384 children, less than 12 years of age, with acute gastroenteritis at Lady Ridgeway Hospital for Children (LRH) and Colombo South Teaching Hospital (CSTH). Stool culture was performed for *Yersinia enterocolitica* and an ELISA kit was used to identify *Campylobacter* faecal antigen. Data analysis was done using SPSS version 22.

Results: A total of 384 patients tested negative for *Yersinia enterocolitica* by culture. A total of 123 faecal samples were tested for *Campylobacter* spp. antigen by ELISA,

8 samples tested positive. The prevalence of *Campylobacter spp.* in the study population was 6.5%. Presence of pus cells in stool sample ($p=0.02$) and abdominal pain ($p=0.03$) were significantly associated with campylobacteriosis. None of the demographic factors and risk factors were significantly associated with *Campylobacter* infection.

Conclusion and recommendations:

Establishment of *Campylobacter* antigen ELISA for detection of *Campylobacter spp.* in stool specimens in clinical microbiology diagnostic laboratories will be beneficial to diagnose *Campylobacter* enteritis quickly. The study findings suggest that *Yersinia enterocolitica* may not be an important enteric pathogen in childhood diarrhoea in Sri Lanka. A larger study, including other districts, is recommended to further assess the situation of *Yersinia enterocolitica* in Sri Lanka.

Key words: *Campylobacter* species, *Yersinia enterocolitica*, ELISA, acute gastroenteritis