

Research no.[٣]

## Incidence of *C. jejuni/coli* in Cases of Diarrhea and Utility of PCR and EIA as Rapid Alternatives for Routine Culture Technique

By

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### Abstract

**Background:** *Campylobacter* is an invasive microorganism associated with diarrheal and systemic diseases. *Campylobacter jejuni and coli* frequently cause intestinal infections worldwide. Routine detection of *Campylobacter* species is primarily and traditionally based on growth followed by phenotypic identification. Nucleic acid based methods, particularly polymerase chain reaction (PCR), have emerged as promising techniques for the rapid, reliable, and sensitive detection and diagnosis of infections. Furthermore, several enzyme immunoassays (EIAs) have demonstrated excellent sensitivity and specificity compared with culture results. **Objectives:** This study aimed to determine the incidence of *C. jejuni and C. coli* isolation in cases of diarrhea and to assess the utility of PCR and EIA as rapid alternatives for routine culture technique.

**Methodology:** A total of 343 stool samples and rectal swabs collected from patients (n=193) and matched controls (n=150) were cultured on two selective media and phenotypically identified by conventional methods. Eighty cases were selected for multiplex PCR and EIA examination.

**Results:** *Campylobacter* was isolated from 5.7% of the patients and 0.7% of the controls. Compared to culture, PCR had 100% specificity and 91.7% sensitivity, and EIA had 89.7% specificity and 91.7% sensitivity.

**Conclusion:** Selective culture remains the optimum method for detection of *Campylobacter* spp. from stool samples. EIA has poor specificity and needs to be redeveloped. Although PCR offers increased specificity, it is preferred for epidemiologic studies.