Prevalence and antibiotic resistance against tetracycline in Campylobacter jejuni and C. coli in cattle and beef meat from Selangor, Malaysia

ABSTRACT

Campylobacter is a major foodborne pathogen frequently associated with human bacterial gastroenteritis in the world. This study was conducted to determine the prevalence and antibiotic resistance of Campylobacter spp. in the beef food system in Malaysia. A total of 340 samples consisting of cattle feces (n = 100), beef (n = 120) from wet markets and beef (n = 120) from hypermarkets were analyzed for Campylobacter spp. The overall prevalence of Campylobacter was 17.4%, consisting of 33% in cattle fecal samples, 14.2% in raw beef from wet market and 7.5% in raw beef from the hypermarket. The multiplex-polymerase chain reaction (PCR) identified 55% of the strains as C. jejuni, 26% as C. coli, and 19% as other Campylobacter spp. A high percentage of Campylobacter spp. were resistant to tetracycline (76.9%) and ampicillin (69.2%), whilst low resistance was exhibited to chloramphenicol (7.6%). The MAR Index of Campylobacter isolates from this study ranged from 0.09 to 0.73. The present study indicates the potential public health risk associated with the beef food system, hence stringent surveillance, regulatory measures, and appropriate interventions are required to minimize Campylobacter contamination and prudent antibiotic usage that can ensure consumer safety.

Keyword: Campylobacter; MPN-PCR; Antibiotic suspetibility; Beef; Prevalence