# MICROBIOLOGY, MOLECULAR AND CLINICAL CHARACTERISTICS OF *CLOSTRIDIOIDES DIFFICILE* INFECTION AND IDENTIFICATION OF RISK FACTORS IN A CHINESE HOSPITAL

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**Abstract.** *Clostridioides difficile* infection (CDI) is not widely prevalent in China but there are regional differences in epidemiology and microbiology of CDI. Incidence of CDI, molecular characteristics of virulence and clinical characteristics of *C. difficile* from clinical isolates in China were investigated to identify scale of the problem and formulate appropriate infection control actions and interventions to avoid CDI outbreaks. Diarrhea fecal specimens ($n$ = 400) from Xiangya Hospital of Central South University, Changsha were selectively cultured for *C. difficile* and identified by API20A, a test kit for the identification of anaerobes. PCR was employed to detect *tcdA*, *tcdB*, *cdtA*, *cdtB*, and 16S-23S internal spacer region. Rate of CDI occurrence was 23.25%, 23.66% of which were toxin A-negative and toxin B-positive strains (no binary toxins strains) and 64.52% obtained from healthcare-associated CDI. Twenty-nine different ribotypes were identified: 8.60% CD001, 12.90% CD012,15.05% CD046, and 21.51% CD017. Independent risk factors associated with CDI were being >55 years of age [odds ratio (OR) = 2.34, 95% confidence interval (95% CI): 1.25-4.37)], installation of a catheter (OR = 2.31, 95% CI: 1.28-4.19), surgical procedure within previous two months (OR = 3.28, 95% CI: 1.30-8.27), and fluoroquinolones use (OR = 2.84, 95% CI: 1.33-6.03). The findings provide evidence CDI was highly prevalence in hospitalized diarrheal patients, and efforts must be undertaken to diagnose CDI allowing appropriate therapy and to raise awareness of this hitherto under-recognized disease.

**Keywords:** *Clostridioides difficile*, diarrhea, ribotype, risk factor

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