

TITLE: PREVALENCE OF *Clostridioides difficile* INFECTION IN HOSPITALIZED PATIENTS WITH ANTIBIOTIC-ASSOCIATED DIARRHEA

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Clostridioides(*Clostridium*) *difficile* infection (CDI) is the main cause of antibiotic-associated diarrhea in adults and it is related to prolonged hospitalization, increased mortality and health care costs. However, there are few national studies evaluating the frequency and severity of this infection in Brazilian hospitals. Hospitalized patients in eight Curitiba Hospital Institutions, older than 17 years, that presented antibiotic-associated diarrhea, from June 2017 to March 2019, were included in this research. Stool samples were collected and processed immediately or conserved at 4°C for up to 24 hours. The glutamate dehydrogenase (GDH) antigen and toxins A/B were tested in all stool samples, using enzyme immunoassay (EIA) (C. diff quik chek complete test® - Alere Inc, Walsham, Massachusetts, USA). The samples that presented positive result for GDH test were also evaluated for presence of genes coding for Toxin B (tcdB), Binary Toxin (cdtA, cdtB) and an hypervirulent strain marker (tcdC deletion) of *C. difficile*, by real time polymerase chain reaction (qPCR) (GeneXpert® *C. difficile* test - Cepheid Inc, Sunnyvale, California, USA). A total of 409 patients were included in study during this period. Among of them, 83 presented positive GDH and in 61 toxins were detected by at least one of the methods. Thus, the prevalence of CDI in population studied was 14.91% (61/409). For CDI case definition, 27 samples presented toxin detected by EIA and qPCR, while in 34 the toxin were detected only by qPCR. By qPCR, among the 61 samples positive to *C. difficile* toxigenic strain, 49 were positive only for toxin B, 10 were positive for toxin B and binary toxin and 2 were positive for toxin B, binary toxin and *tcdC* deletion. The prevalence of *C. difficile* infection was like that found by other Brazilians studies. Our results call attention to the prevalence of binary toxin producing strains and possible circulation of hypertoxigenic strain.

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