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Prognostic factors of mortality and complications of Clostridium difficile infection in elderly patients

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Background: Most cases of Clostridium difficile infection (CDI) occur in patients older than 65 years. Older age is associated with increased mortality. We describe the characteristics of CDI in a group of elderly patients

Material/methods: A retrospective cohort study of all patients older than 65 years with CDI hospitalized between January 2014 and November 2016 in a tertiary university hospital in Spain was performed. Data on demographic characteristics, past medical history, CDI description were collected. Exposure to risk factors associated with CDI within 8 weeks before CDI, including previous hospitalization, nursing home residency, antibiotic treatment, antisecretory drugs, and surgical procedures was recorded. *C. difficile* was detected in stool samples by detection of GDH antigen and toxins A and B using an immunoassay (C. Diff Quick Check Complete, Alere). Those samples with GDH (+)/Toxins (-) were analyzed with the PCR-based assay GenomEra CDX System (ABACUS Diagnostica) to detect gen tcdB. Qualitative variables were compared using the Chi^2 test or the Fisher exact test, when necessary. For quantitative variables, the Student t test or the Mann-Whitney U test were used. Significance was designated at $p<0.05$.

Results: 84 patients (60,7% males, mean age: 77 [8] years, mean stay before the infection: 8[14] days) were included. Prior to CDI, 64 patients (76.2%) were exposed to antibiotics. All infections except four was nosocomial. The most frequent symptoms were diarrhea (100%), abdominal pain (46.4%) and fever (45,2%). Nine patients developed a complication (8 patients a colitis and 1 patient an ileus). Mortality was significantly more frequent in patients with elevated levels of leucocytes (17485[12655] vs 13451[7671], p=0.072) but there is no differences in sex, age, treatment with metronidazole or vancomycin or serum C-reactive protein levels (18[15] vs 13[27], p= 0.001). On the other hand, the presence of complications was more frequent in patients treated with vancomycin enemas in monotherapy (p=0.030, OR:20.8 [1.674-259]) and in those with abdominal pain (p=0.013, OR: 9.39 [1.173-83.57]).

Conclusions: *Clostridium difficile* infection is an important cause of complications and mortality in elderly patients associated to treatment with vancomycin enema in monotherapy, and high levels of leucocytes.