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Poster Session III
Clostridium difficile: epidemiology and outcomes

CLOSTRIDIUM DIFFICILE INFECTION IN A FRENCH UNIVERSITY HOSPITAL: MOLECULAR CHARACTERISTICS OF ISOLATES AND FACTORS ASSOCIATED WITH SEVERITY

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Objectives: C. difficile infection (CDI) remains a significant problem in healthcare settings. The aim of this study was to obtain an overview of the phenotypic and genotypic characteristics of *C. difficile* isolates and to estimate factors associated with severe CDI.

Methods: A 1-year prospective study of patients w ith CDI was conducted in a university hospital. Stool specimens were tested by an EIA for toxins A and B and by toxigenic culture. Isolates w ere characterized by toxinotyping, PCR ribotyping, and for detection of binary toxin. Strains were tested for their susceptibility to chloramphenicol, ciprofloxacin, clindamycin, erythromycin, imipenem, metronidazole, moxifloxacin, tetracycline, and vancomycin by disk diffusion method. CDI w as rated as severe w hen patients met at least 1 of the following criteria: (1) fever (> 38.5°C), abdominal pain, and leukocyte count greater than 10,000 cells/mm^3; (2) endoscopically- or histologically-proven pseudomembranous colitis; or (3) complications related to CDI, such as toxic megacolon, intestinal perforation, colectomy, renal failure, septic shock, or intensive care unit (ICU) admission. Factors associated with severity were estimated by a multivariate logistic regression model.

Results: A total of 558 stool specimens were collected from 432 patients with diarrhea. EIA positive toxins w ere observed in 37 specimens (6.6%) and a toxigenic strain w as isolated in 42 samples (7.5%). The toxin A&B genes were detected on 59 samples. PCR ribotyping show ed 16 different ribotypes (Fig.1).

Toxinotypes 0 (81%), V (15%) and IV (4%) were the main toxinotypes. The gene for binary toxin was detected in 20.3% of the strains. Three isolates (5.1%) w ere susceptible to clindamycin (zone diameter, ≥15mm), 7 isolates (11.9%) were resistant to erythromycin (zone diameter <20 mm) and 2 isolates (3.4%) were resistant to moxifloxacin (zone diameter <20 mm). In 20 CDI episodes (33.9%) identified as severe, 14 (70%) were caused by toxinotype 0 (Fig.1). In 4 patients who developed relapse, PCR ribotyping confirmed the presence of the same strains isolated in the first episode. Multivariate analysis show ed that exposure to fluoroquinolones after diagnosis (OR: 10.4, 95% [CI]: 1.6-68.6), appendectomy (OR: 7.2, 95%CI: 1.2-46.8) and diabetes (OR: 5.2, 95%CI: 1.3-20.5) w ere associated with severe CDI w hile binary toxin was not.

Conclusions: We observed a wide clonal diversity locally in accordance with national and European data. Infection with strains possessing the binary toxin was not associated with severe CDI as reported elsewhere. However a significant association was observed in patients with diabetes, administration of fluoroquinolones and appendectomy. The effect of the latter association is controversial and requires further evaluation in larger studies.