

P0740

Poster Session III

Diagnosis of *Clostridium difficile* and other gastrointestinal infections

CLINICAL OUTCOME AND BIOLOGICAL FEATURES OF PATIENTS WITH CLOSTRIDIUM DIFFICILE INFECTION ACCORDING TO TESTING METHODS.

L. Rame¹, N. Khanafer², C. Eckert¹, V. Lalande³, **F. Barbut**¹

¹National Reference Laboratory for *Clostridium difficile*, Université Pierre et Marie Curie, Paris, France ;

²Laboratoire d'Epidémiologie et de Santé Publique, Université Claude Bernard 1, Lyon, France ;

³Department of Bacteriology, Assistance Publique-Hôpitaux de Paris Hôpital Saint-Antoine, Paris, France

Objective: To compare the clinical presentation and outcome (mortality) of patients with *Clostridium difficile* infection (CDI) based on the presence or absence of free toxins in the stools at the time of diagnosis.

Methods: A prospective study including patients with CDI hospitalized in a university hospital was conducted from December 2010 to April 2013. Patients were classified into two groups: those who had free toxins in the stools (defined by a positive stool cytotoxicity assay) and those whose diagnosis was based only on the presence of a toxigenic strain (defined as patients with a negative stool cytotoxicity assay but a positive toxigenic culture). For each patient, a standardized questionnaire including demographic, clinical (severity, recurrence during the 2 months following the initial episode, mortality at Day 30) and biological (leukocyte count, CRP, albumin concentration, serum creatinine concentration) data was fulfilled. Severity was defined as recommended by the European study group on *C. difficile*. A multivariate logistic regression model was used to identify factors associated with the presence of free toxin and severity of CDI. Factors associated with death were determined by a Cox model.

Results: 312 patients with CDI were included: 191 had free toxins in the stools and 121 had no detectable toxin in the stools but a positive toxigenic culture. Factors significantly associated with the presence of free toxin were the leukocyte count (OR = 1.48, 95% CI 1.02-2.15, p = 0.04), antibiotics in the previous 2 months (OR = 1.94, 95% CI 1.06-3.57, p = 0.03) and diagnosis of inflammatory bowel disease (OR = 0.50, 95% CI 0.28-0.87, p = 0.013). Independent factors associated with severe CDI were elevated CRP (OR = 1.08, 95% CI 1.02-1.14, p = 0.006) and leukocytes > 10000/mm³ (OR = 6.34, 95% CI 1.25 - 32.28, p = 0.03). Mortality at Day 30 was significantly higher in elderly patients (> 65 years) (HR = 3.76 , 95% CI 1.5-9.40), in patients with severe CDI (HR = 5.19, 95% CI 1.98-13.62), in patients with a leukocyte count > 10000 /mm³ (HR : 4.52 , 95% CI 1.56-22.50) or with leukopenia (HR = 6.05 , 95% CI 1.29-15.86), and in patients without specific *C. difficile* treatment (HR = 0.3 , 95% CI 0.12-0.73).

Conclusion: The presence of free toxin at the time of diagnosis was not significantly associated with a severe form of CDI or higher mortality rate. However, free toxin in stools was significantly associated with biological markers of inflammation or risk factors for infection.