

Spectrum, antibiotic susceptibility and virulence factors of bacterial infections complicating severe acute pancreatitis

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Secondary infection of pancreatic necrotic tissue and peri-pancreatic fluid is a serious complication of acute pancreatitis resulting in significant morbidity and mortality. The aim of this study was to find out the spectrum of bacterial infections, their antibiotic susceptibility patterns and virulence features in patients with severe acute pancreatitis (SAP). A total of 19 patients with acute pancreatitis were consecutively selected from 153 clinical cases of septic abdominal surgical emergencies (age 29-80, 12 males, 7 females) admitted during 2009-2011, in the First Surgical Clinic of the University Emergency Hospital of Bucharest. All 19 SAP cases were submitted to pre-operative antibiotic empiric treatment. Ten cases were culture negative, in spite of the positive microscopy registered in eight of them. The rest of nine cases were culture positive, 17 different bacterial strains being isolated and identified as belonging to eight aerobic and four anaerobic species. Polymicrobial infection was seen in six patients and the etiology was dominated by Gram-negative bacilli, followed by gut anaerobic bacteria, attesting their colonic origin. The susceptibility testing of the isolated strains confirmed in vitro in all cases the efficiency of the antibiotics that had been used in the empiric pre-operative treatment. Out of 19 cases submitted to pre-operative empiric treatment, 14 proved a favorable evolution and five a lethal outcome. The host depending factors (sepsis and other co-morbidities), as well as the aggressivity of the isolated microbial strains (mediated by the presence of different factors implicated in adherence, toxicity and invasion) were found to contribute to the unfavorable, even lethal clinical outcome of SAP cases. In spite of all theoretical controversies, the antibiotic therapy remains at present a very important therapeutic mean for the SAP treatment; although it cannot solve the septic necrotizing pancreatitis in 100% of cases, however, associated with the surgery and all other medical means of intensive therapy, the antibiotic treatment can influence the clinical evolution to the benefit and recovery of patients in a significant number of cases.

Key words: severe acute pancreatitis, virulence factors, antibiotic therapy

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