PANCREAS NEWS

Extra-Pancreatic Infections in Acute Pancreatitis: Supporting or Main Actor into the Disease's Outcome?

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Sepsis is an important complication and cause of morbidity and mortality in acute pancreatitis [1, 2, 3]. Occurrence of pancreatic/peripancreatic infection characterizes the more severe forms of the disease, especially when it is associated with secondary organ failure [4]. These features are based on many international clinical studies and surveys that witness the great interest on this topic. On the opposite, few reports are available as regards the clinical and prognostic relevance of extra-pancreatic infections on the acute pancreatitis outcome. One study from Netherlands dated 2009 [5] investigated the impact of bacteremia and pneumonia in a cohort study of 731 patients with a primary episode of acute pancreatitis, including 296 patients involved in a randomized controlled trial to investigate the value of probiotic treatment in severe acute pancreatitis. Time of onset of bacteremia, pneumonia, infected pancreatic necrosis, persistent organ failure and death were recorded. The initial infection in 173 patients was diagnosed a median of 8 days (interquartile range: 3-20 days) after admission (infected necrosis: median day 26; bacteremia/pneumonia: median day 7). Eighty per cent of 61 patients who died had an infection. In 154 patients with pancreatic parenchymal necrosis, bacteremia was associated with increased risk of infected necrosis (65% *versus* 37.9%; P=0.002). In 98 patients with infected necrosis, bacteremia was associated with higher mortality (40% *versus* 16%; P=0.014). In multivariable analysis, persistent organ failure (odds ratio (OR): 18.0), bacteremia (OR: 3.4) and age (OR: 1.1) were associated with death. The conclusions of the study were that extra-pancreatic infections occur early in acute pancreatitis and have a significant impact on mortality, especially bacteremia. In the same period, another study coming from China [6] confirmed in a group of 140 patients suffering from severe acute pancreatitis that the earliest extra-pancreatic infection was pneumonia (10.7±2.5 days), followed by bacteremia (13.7±1.5 days), gastrointestinal tract infection (16.8±3.9 days) and urinary tract infection (20.5±4.8 days). Considering the whole series, of 65 episodes of infection, infected pancreatic necrosis accounted for 47.7%, pneumonia for 27.7%, bacteremia for 10.8%, urinary tract infection for 6.1%, and gastrointestinal tract infection for 7.7%.

Quite recently, an interesting study [7] investigated the relationship between the source of pancreatic and extra-pancreatic infections and the outcome of acute pancreatitis defined in terms of persistent organ failure, length of hospital stay, and mortality. The core of the study consisted of a retrospective analysis of a series of 357 patients (229 males; age: 40.3 ± 14.0 years) with acute pancreatitis who had detailed culture reports. Eighty-four (23.5%) patients had pancreatic (or peripancreatic) source (Group 1), 52 (14.6%) patients had other (extra-pancreatic) sources (Group 2), 20 (5.6%) patients were noted to have positive cultures from sources, which were both pancreatic and extra-pancreatic (combined) sources (Group 3), while 201 patients had sterile cultures (Group 4). Persistent organ failure was seen in 147 (48%) patients (Group 1: 67.8%; Group 2: 65%; Group 3: 90%; Group 4: 34%; P < 0.001). The mean length of hospital stay was 22.1 ± 20.3 days (Group 1: 30.2 ± 20.6 days; Group 2: 26.4 ± 26.8 days; Group 3: 47.3 ± 32.6 days; Group 4: 15.2 ± 11.3 days; P < 0.001). Seventy (19.7%) patients succumbed to their illness (Group 1: 22.9%; Group 2: 36.5%; Group 3: 40%; Group 4: 12%; P < 0.001). These

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results underline that the presence of combined pancreatic and extra-pancreatic sources of sepsis significantly worsen the outcome of acute pancreatitis, but did not discriminate in this context whether pancreatic infection is more important than extra-pancreatic ones.

What can we argue from these data? Extra-pancreatic infections adversely affect the outcome of acute pancreatitis but we don't exactly know if its relevance has equal dignity of the pancreatic sepsis. Anyhow, physicians should rapidly and strongly counteract all kind of extra-pancreatic infections in clinical practice as well as eventual prophylactic strategies should necessarily focus on early intervention.

Conflict of interest The author has no potential conflict of interests

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