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PANCREAS NEWS

Do We Really Need a New Category of Severity for Patients with Acute Pancreatitis?

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In the last few years several international surveys have confirmed that approximately 15-20% of patients suffering from acute pancreatitis have a severe outcome [1, 2, 3, 4, 5, 6, 7, 8]. The most widely used system for defining an episode of acute pancreatitis as severe derives from the Symposium on classifying acute pancreatitis held in Atlanta, GA, U.S.A. in 1992 [9]. This innovative classification system pays specific attention to the morphological data, the complications of acute pancreatitis and the terminology. In a short period of time, the Atlanta criteria enjoyed worldwide diffusion and wide international agreement. Its clinical and scientific relevance is witnessed by the fact that, since 1994, virtually every paper published in any journal having a high impact factor and which deals with acute pancreatitis from a clinical point of view refers to the Atlanta criteria for patient stratification. Acute pancreatitis is categorized as either "mild" or "severe", severe being defined as the presence of any one of the following: a) failure of one or more organ systems (respiratory, renal, gastrointestinal or circulatory) at any time during the course of the disease; b) occurrence of one or more local complications (pancreatic necrosis, pseudocyst or abscess). In short, acute pancreatitis is classified as severe in the presence of any organ failure and/or the presence of any local complication. As a consequence, all patients having any type of organ dysfunction after a single examination were described as severe acute pancreatitis without any distinction between minimal or multi-organ failure, and transient or persistent organ dysfunction. At the same time, all patients showing evidence of pancreatic necrosis were described as severe, independently of the entity of the necrotic process.

Recent knowledge and concepts of the course and pathophysiology of the disease together with the huge improvement in imaging techniques has shaken the foundations of the above-mentioned statements. During the first phase of an episode of acute pancreatitis, severity is related to organ failure secondary to the host's systemic inflammatory response and not necessarily to the presence of pancreatic necrosis; the extent of the pancreatic and peripancreatic changes is usually, but not always, directly proportional to the severity of organ failure [7, 10]. In clinical practice necrosis mainly means risk of infection and does not always identify a severe case; for each individual patient, the "real" severity factor is the occurrence of multi-organ failure. Some recent studies [11, 12, 13] have shown that the most important determinant of patient outcome in patients with severe acute pancreatitis is persistent multi-organ failure (mortality ranging from 34 to 55%) whereas the prognosis is better in patients with transient and resolving or single organ failure (mortality ranging from 0 to 3%). In the second phase of acute pancreatitis, we can observe different outcomes: a) morphological resolution (edematous pancreatitis without necrosis, necrotizing pancreatitis with a limited amount of necrosis); b) tendency to stabilization with a more protracted course related to the necrotizing process lasting weeks or months; the persistence of local complications without organ failure is generally associated with morbidity and a prolonged hospital stay but very low mortality; c) occurrence of infection of pancreatic necrosis with possible secondary multi-organ dysfunction and a sharp increase in morbidity/mortality. Therefore, in this clinical scenario designed by the natural history of the disease, the clinician should apply functional or clinical parameters in the first phase and morphologic criteria in the second phase in order to obtain a reliable prognostic assessment of acute pancreatitis.

Bearing these concepts in mind, the unique category of severe acute pancreatitis according to the Atlanta criteria may include different (and substantial) degrees of severity thus introducing a misclassification factor. An important clinical contribution has recently been published, adding new relevant data on this topic [14]. The authors carried out a retrospective study aimed at evaluating the morbidity and mortality of 207

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consecutive patients admitted with severe acute pancreatitis (three subgroups: a) patients without organ failure; b) patients with single organ failure; c) patients with multiple organ failure). In-hospital mortality, length of hospitalization, need for the intensive care unit (ICU) and the mean length of stay in the ICU were considered as primary outcomes. Compared to patients with multi-organ failure, patients without organ failure had shorter hospitalizations (28 *vs*. 34 days, P=0.02), less need for ICU care (50% *vs*. 90%, P=0.001), a shorter time in the ICU (5 *vs*. 34 days, P<0.05) and decreased in-hospital mortality (2% *vs*. 46%, P<0.01). Considering these results, the authors suggested that the Atlanta classification be revised to include a patient group defined as "moderately severe acute pancreatitis" which identifies those patients currently classified as severe acute pancreatitis owing to the presence of local complications but without organ failure. The same group of clinicians (coming from the Mayo Clinic, Rochester, MN, U.S.A.) validated these retrospective results with a new prospective study presented at the last European Pancreatic Club held in July 2009 at Szeged, Hungary [15]. The authors enrolled a prospective cohort of 82 patients divided into three subgroups: a) severe acute pancreatitis (14 patients with the presence of organ failure with/without local complications); b) moderately severe acute pancreatitis (12 patients with the presence of local complications without organ failure); c) moderate acute pancreatitis (56 patients with the absence of organ failure/local complications). Patients with moderately severe acute pancreatitis did not require ICU care (0% *vs*. 71.4%, P<0.001) and had no mortality (0% *vs*. 28.6%; P=0.04) despite the presence of necrosis and a total hospital stay similar to those who had organ failure (severe acute pancreatitis patients). In addition, compared to the moderate acute pancreatitis group, patients in the moderately severe acute pancreatitis group had longer hospital stay (4.7 *vs*. 17.5 days, P=0.03). The authors concluded that moderately severe acute pancreatitis represents an exclusive entity, different from severe and moderate acute pancreatitis. Similar results were obtained from another group at the same Meeting [16]. Significant differences concerning mortality, length of hospital stay and ICU admission were found between a group of patients identified as "moderate acute pancreatitis" by the presence of acute fluid collections, pseudocysts, pancreatic or peripancreatic necrosis and/or pancreatic abscess, and a group of patients identified as "severe acute pancreatitis" by the presence of persistent (more than 48 hours) organ failure or mortality. The authors stated that a reliable prognostic classification of acute pancreatitis should include three categories of severity: mild acute pancreatitis (low morbidity without mortality), moderate acute pancreatitis (high morbidity without mortality) and severe acute pancreatitis (high morbidity and mortality).

The Atlanta classification system for acute pancreatitis has served us well for many years but nowadays it seems logical to consider the opportunity of introducing a third category of severity for patients with acute pancreatitis. In this context, the publication of the final revision of the Atlanta criteria by the Acute Pancreatitis Classification Working Group will constitute a very important step forward.

Conflict of interest The author has no potential conflicts of interest

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