Acute pancreatitis (AP) is a common disorder with a significant burden on our healthcare system. It is defined as an inflammatory process of the pancreas with possible peripancreatic tissue and multorgan involvement. Majority of AP is usually mild and often resolves without any sequela. Nonetheless, between 10-20% experience severe AP (SAP) episode, which can result in an intense inflammatory response leading to a variety of local and systemic complications. The individual patient response to pancreatic injury is highly variable and often unpredictable. Hence, clinical biomarkers that predict the development of these life-threatening complications are important to help guide patient triage and management. Several prognostic markers have been developed for severity stratification in acute pancreatitis. Many of these are either too complex (APACHE II) or unable to obtain a complete score until at least 48 hours into the illness (Ranson score). The specificity and sensitivity of these scoring systems for predicting severe acute pancreatitis range between 55% and 90%, depending on the cut-off number and the timing of scoring.

C-reactive protein (CRP), Interleukin-6 (IL-6), procalcitonin (PCT) are promising biochemical markers for clinical use but they have the drawback of being costly and not widely available in all hospitals. We have embarked on a clinical study to assess the predictive accuracy of BISAP in determining disease severity and mortality in patients with acute pancreatitis.

Methodology

Study Objectives

Primary - To evaluate the accuracy of BISAP score in predicting disease severity, organ failure and mortality in patients with acute pancreatitis.

Secondary - To determine the cutoff points for predicting severe acute pancreatitis on the basis of highest sensitivity and specificity values generated from ROC curves.

Study Design

A cross sectional, multicentre study that was conducted in Hospital Tengku Ampuan Rahimah (HTAR) and Hospital Canselor Tuanku Muhriz (HCTM) from January 2015 till August 2016. BISAP is a newly developed prognostic scoring system, which was performed well in preliminary studies, especially in the early identification of patients with AP at increased risk of in-hospital mortality.

Inclusion Criteria

• patients age ≥ 18,
• admitted with acute pancreatitis as defined by ≥ 2 of the following:
  1. characteristic abdominal pain,
  2. serum amylase levels 3× the upper limit of normal,
  3. contrast-enhanced computed tomography (CT) of the abdomen within the first 7 days of hospitalization demonstrating changes consistent with acute pancreatitis.

Exclusion Criteria

• Acute pancreatitis patients with organ failure at or within 24 hours of presentation
• Patients with chronic pancreatitis
• Patients who refuse to be included in this study

A total of 159 patients with acute pancreatitis were recruited between January 2015 until August 2016. The mean age was 47±17 years old. There was an equal gender distribution in our study group.

Out of these, 21 patients (13%) progressed to develop persistent organ failure and were classified as severe acute pancreatitis. Gall stone disease is the main aetiology in the development of acute pancreatitis (66.7%), followed by alcohol consumption (15.7%) and idiopathic (7.5%) cause.

Gender

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Table 2. Demography

Mean Age (years, SD) 47 ± 17

BMI (mean, SD) 26 ± 5

Table 2. Demographics

According to Spearman ranked correlations, BISAP score showed positive correlation with Glasgow score and CRP, whereas CTXI showed positive correlation with CRP level (correlation coefficient; 0.632, P =0.001) but not with other scores (Table 4).

Table 3. Etiology of Pancreatitis

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Table 3. Etiology of Pancreatitis

Conclusions

BISAP is more accurate in predicting disease severity, and death in patients with acute pancreatitis. In our opinion, the ability of the BISAP score to stratify patients at risk of mortality and severe disease within 24 h of presentation will help improve clinical care and facilitate early ICU admissions for patients, thus improving patient outcomes. It will also help in patient stratification from district hospitals, to enable easier description of severe cases during referrals to tertiary centres. The stratification of these patients at the district level will also enable the district hospital to manage mild cases of acute pancreatitis, thus reducing the burden at tertiary centres.