

ABSTRACT

BACKGROUND

Acute Pancreatitis is non bacterial inflammation of Pancreatic Gland by activation and digestion of the gland by its own enzymes. Acute pancreatitis embodies a large spectrum of diseases which ranges from mild pancreatitis comprising of parenchymal edema to severe necrotizing pancreatitis. Identification of patients at risk for severe disease early in the course of acute pancreatitis is an important step to guiding management and improving outcomes.. Several scoring systems are used to assess the severity and predict the outcome and prognosis of acute pancreatitis. An improved outcome in the severe form of acute pancreatitis is based on early identification of disease severity and subsequent focused management of the high risk patients. There is a need to evaluate the efficacy of clinical scoring system versus CT severity index to triage the patient into intensive care. The present study is designed to examine the effect of using BISAP score on patient outcome and its value in comparison with MCTSI.

STUDY DESIGN

Diagnostic Test Evaluation

MATERIALS AND METHOD

All patients with Acute Pancreatitis presenting to the Department of General Surgery who fit the inclusion criteria were included in the study after obtaining informed consent. Extensive demographic, radiographic and laboratory data which includes complete haemogram, serum electrolytes , renal function test, liver function test, serum amylase, lipid profile, chest X-ray, USG abdomen etc were collected. BISAP score was calculated using data from the first 24 hours from admission. A score of 1 is given for each criteria for a maximum score of 5. MCTSI was calculated from CECT within 48 hours. Patients were closely monitored during the entire stay in hospital and evidence of organ failure documented. Patients were classified as mild acute pancreatitis and severe acute pancreatitis based on the presence of organ failure that persist for more than 48 hours . Pancreatic necrosis was assessed from CECT. Pancreatic necrosis is defined as lack of enhancement of pancreatic parenchyma with contrast. Comparison of prediction of severity of acute pancreatitis by BISAP and MCTSI score is the primary outcome of interest and comparison of prediction of mortality and pancreatic necrosis by both scores is the secondary outcome of interest.

SAMPLE SIZE: n = 100

INCLUSION CRITERIA

All patients admitted with the diagnosis of Acute Pancreatitis based on the presence of at least two of the following three criteria:

1. Characteristic epigastric abdominal pain , with or without radiation to the back.
2. Serum amylase or lipase levels elevated to at least three times the upper limit of normal.
3. Characteristic finding of Acute Pancreatitis on abdominal CT scan.

EXCLUSION CRITERIA

Patients with pre existing Chronic Kidney Disease (CKD) which may be associated with elevated Blood Urea Nitrogen values were excluded from the study as they may result in high BISAP score.

OUTCOME

1. Organ Failure
2. Mortality
3. Pancreatic Necrosis

RESULTS

The study compares BISAP score which is a clinical scoring system with MCTSI, which is a radiological score in predicting severity, mortality and necrosis in 100 patients with acute pancreatitis..Mean age of patients presenting with acute pancreatitis is 39 years. Males were 97% and females were 3%..Alcohol is the most common etiological agent contributing 46% followed by gallstones contributing 27%..This may be attributed to the difference in dietary, social, genetic and cultural factors between Indian population and Western population. 29 out of 100 patients (29%) developed severe acute pancreatitis. The AUC for prediction of severity by BISAP and MCTSI score are 0.917 (95% CI 0.864 – 0.970) and 0.853 (95% CI 0.777 – 0.928) respectively. The in-hospital mortality rate is 8%. Patients with $BISAP \geq 3$ had thirty eight times more chance of ending up in death compared to those with $BISAP < 3$. MCTSI was found to have higher sensitivity and positive predictive value in predicting pancreatic necrosis..Patients with $MCTSI \geq 4$ had 23 times chance of having pancreatic necrosis than $MCTSI < 4$.

CONCLUSION

To classify patients with acute pancreatitis into mild and severe groups, BISAP is a reliable prognostic tool. The components of BISAP are clinically relevant and easy to obtain. The sensitivity of BISAP score ≥ 3 in predicting severe acute pancreatitis was found to be 65.52%. AUC concludes that BISAP score is an ideal tool in predicting severity in Acute Pancreatitis.

KEY WORDS

Acute Pancreatitis, BISAP score, MCTSI, Necrosis, Inflammation

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