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Bisap score to estimate severity in acute pancreatitis

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Abstract
The study was undertaken to test the BISAP score while assessing mortality and moderate frequency thresholds in acute pancreatitis. Out of 51 cases of acute pancreatitis admitted to our hospital the BISAP value was assessed. In both instances the BISAP scores were determined using data within 24 h of request. While most acute pancreatitis patients recover without complications, this disease's average mortality rate is between 2% and 5%. A multitude of risk stratification methods have been built for acute pancreatitis. BISAP score of level ≥3 provide a simple method to classify patients at risk of elevated mortality and establish moderate frequency indicators within 24 hours of presentation.

Keywords: acute pancreatitis, severity, bisap score, gland, organs, mortality

Introduction
Acute pancreatitis is an acute inflammation of the pancreatic gland with auto- digestion of pancreatic tissue often incurring variable damage to adjacent organs [1]. Therefore, this disease has frequently shown a very complicated and life threatening course. It accounts for 20,000 admissions in the United States annually [2, 3]. Various scoring systems have been used to predict the severity of acute pancreatitis such as Ranson's criteria, APACHE II and modified Glasgow scale. The bedside index of severity of acute pancreatitis (BISAP) is a simplified scoring system that can be easily applied in the earliest phase of acute pancreatitis to help identify the patients which have a high risk of death [4]. The aim of this study is to study the importance of BISAP score in determining the prognosis of patients admitted with acute pancreatitis.

Aims and Objectives
To evaluate the ability of BISAP Score in predicting severity in patients of Acute Pancreatitis that get admitted in our institution.

Review of Literature
Herophilus of Chalkaidon was given the first account of the pancreas around 300 B.C. The name of this organ, pancreas (Greek: pan, all; kreas, flesh), was not reported by Rufus of Ephesus (100 A.D.) until 400 years later [5]. S are met with early case studies of people suffering from suppurative inflammation or pancreatic tumours. Alberti (1578), and J. Schenck, and N. (1600). N.Tulp (1641) [6]. Fitz published the first diagnostic scheme for AP in 1889 [7]. In 1901, Opie explained how gallstones were correlated with AP [8]. In 1917 alcohol was clearly identified as a major pathogenetic cause [9]. Chiari (1896) suggested more than 100 years ago that intrapancreatic stimulation of zymogens contributes to pancreatic autodigestion and is a crucial factor in AP pathogenesis [10]. The advent of computed tomography (CT) ultimately further improved the pancreatic imaging [11, 12]
In 80 percent of patients the disorder takes a moderate self-limiting path although about 20 percent of cases are serious and correlated with substantial mortality and morbidity [13]. The Atlanta symposium described severe acute pancreatitis (SAP) as attacks related to organ failure and/or local complications such as necrosis and development of pseudocysts [14]. Septic complications of pancreatic necrosis (PN) and subsequent multi-organ failure (MOF) are mainly late deaths [15, 16]
Rapid and precise stratification of seriousness in AP is important for early diagnosis because it reduces mortality and morbidity in the correct transition to an important care facility. This has been found that fewer than half of patients with serious pancreatitis are detected through a basic clinical examination on entry [17].

Materials and Methods
This was a prospective non-blinded study (observational study) using purposive convenience sampling. The study was conducted at Krishna Hospital, Karad. Duration of the study was from May 2011 to May 2013. A total of 51 patients were enrolled in the study. Those cases admitted in Krishna Hospital, Karad during the study period with clinical diagnosis of Acute Pancreatitis and were confirmed to have Acute Pancreatitis. After getting clearance and approval from the institutional ethical and scientific committee, the study was conducted. Patients admitted through both the outpatient department and emergency department were included in the study after taking an informed consent from them for the same. A detailed history taking and a thorough clinical examination was carried out after admission. Apart from the routine blood investigations which were sent during the initial screening of the patients, serum amylase and urine amylase estimation was also done in all patients. Debridement of the pancreatic necrosum was done in 5 out of the 51 patients. All

the patients in the study at admission received broad spectrum antibiotics and I.V. fluids. Patients were followed up during the course of their stay in the hospital. Data was entered into an Excel worksheet using a personal computer and was analyzed using the computer software, statistical pack for social sciences (SPSS) statistics 20.0. Frequency and percentage for all study variables were calculated. Fixing the level of significance at 0.05, statistical test Fisher's exact test was used to assess the statistical significance.

Observations and Results

Table 1: Age Distribution

Age	Frequency	Percent
<40	19	37.25
≥40	32	62.75
TOTAL	51	100.0

As sheen in table 1, the mean age of 52 ± 16 and 51.7 respectively. 62.75% patients were ≥40 years of age and 37.25% were below 40 years of age.

Table 2: Idiopathic

Idiopathic	Frequency	Percent
Present	7	13.7
Absent	44	86.3
Total	51	100.0

As seen in table 2, in etiology it was seen that alcohol was the predominant causative factor in the study region accounting to 60.8%. Idiopathic was present 13.7%.

Table 3: Complications

Complications	Frequency	Percentage
No Organ Failure	40	78.43
Organ Failure: Renal	8	15.68
Organ Failure: ARDS	6	11.76
Organ Failure: CVS	6	11.76
Pancreatic Necrosis	8	15.68

In the given table no. 3, 78% had no organ failure, organ failure seen were renal 15.68%, ARDS 11.76%, CVS 11.76%. Pancreatic necrosis was seen in 15.68% patients.

Table 4: Severity of BISAP Score

Severity	Frequency	Percent
SCORE <3	37	72.55
SCORE ≥3	14	27.45
Total	51	100.0

72.55% patients had BISAP score <3 and 27.45% patients had BISAP score ≥3 seen in the current table.

Table 5: Mortality

Mortality	Frequency	Percent
Alive	49	96.08
Dead	02	03.92
Total	51	100.0

In table no. 5, mortality seen was 3.92 percent.

Discussion

Acute pancreatitis (AP) still remains a critical problem. It is characterized as an inflammatory cycle of the pancreas with potential peripancreatic tissue and involvement of multi-organ causing syndrome of multi-organ dysfunction (mods) with increased mortality. An essential move in developing treatment techniques for acute pancreatitis is the opportunity to stratify patients early on in their path. Based on BISAP score, the seriousness of the acute pancreatitis was established. 78.4% of the group study consisted of males and 21.6% were females with M:F ratio 3.7:1. The studies done by V. K. Singh *et al*. and Georgios *et al*. had M:F ratio 1:1[18,19]. The mean age in the current study was 46.31 ± 17.018 which was comparable to study conducted by V. K. Singh *et al*. and Georgios *et al*. which had a mean age of 52 ± 16 and 51.7 respectively. 62.75% patients were ≥40 years of age and 37.25% were below 40 years of age. In etiology it was seen that alcohol was the predominant causative factor in the study region accounting to 60.8% followed by gallstones 21.6%. Idiopathic was 13.7%, trauma 2% and drugs 2%. V. K. Singh *et al*. and Georgios *et al*. had gallstones (27% and 36% respectively) as the predominant causative factor followed by alcohol (21.4% and 14% respectively). The differences in the study could be due regional differences, life style and socio economic status. In patients with BISAP score <3, out of 37, 34 had no organ failure, 2 had organ failure without death and 1 had organ failure followed by death. Patients with BISAP score ≥3, out of 14, 6 had no organ failure, 6 had organ failure without death and 2 had organ failure followed by death. P value was 0.001 and it was significant. The current study when compared to studies done by Vikesh K Singh *et al*. and Georgios *et al*. showed similar results.

Conclusion

The BISAP score is a simple method that can be applied within 24 h of hospital admission for the early identification of patients at increased risk for in hospital mortality. Patients with BISAP score ≥3 are at high risk of developing Severe Acute Pancreatitis and should be given intensive management right from the time of admission.

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