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Original Research Article

TO EVALUATE THE ABILITY OF BISAP SCORE TO PREDICT MORTALITY IN ACUTE PANCREATITIS PATIENTS

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Abstract

Background & Methods: The aim of the study is to evaluate the ability of BISAP score to predict mortality in acute pancreatitis patients, clinical features of Acute Pancreatitis are evaluated clinically and subjected to laboratory and radiological investigations as per the designed proforma. Data pertinent to the scoring systems will be recorded within 24 h of admission to the hospital. Once diagnosis is established the patient disease severity will be assessed by BISAP scoring system.

Results: History of consumption of alcohol and the possibility of it being the etiological factor were found in 54 patients. Gall stone disease was attributed in 24 patients. Hyperlipidemia and drugs as causative factor presented in 02 patients in each category, respectively. There was clear cut history of blunt trauma with CT scan showed isolated pancreatic laceration presented in 04 cases. No cause could be attributed in rest of the 14 patients. Out of 100 patients, 08 patients presented with > 4 score and 92 patients presented with < 4.

Conclusion: We concluded from this study, Alcohol (54 %) was found to be the most common etiological factor for acute pancreatitis. Males were most commonly affected than female with a ratio of 9:1. The most common age groups of patients affected were in 4th decade of life. The overall mortality in patients with severe acute pancreatitis was 8%. The BISAP score predicted disease severity and mortality significantly in this study, hence early identification and initiation of treatment can significantly alter the outcome.

Keywords: BISAP, mortality, acute & pancreatitis.

Study Design: Prospective Observational Study.

1. Introduction

The term “Pancreas” is derived from the Greek word Pan Kreas, meaning “all flesh”6. The fascinating embryological development of the Pancreas has intrigued the biologists[1]. It is an endodermally derived organ, consisting of two morphologically different parts, the exocrine and the endocrine tissue. It has also been described as “two organs in one”, in view of the distinct function of the gland[2].

It is a posteriorly situated retroperitoneal organ, lying posterior to the stomach, sloping upward from the C-loop of the duodenum to the splenic hilum at the level of L1.The fact that the pancreas is situated so deeply in the abdomen, and is sealed in the retroperitoneum

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explains the poorly localized and sometimes ill-defined nature with which pancreatic pathology presents[3].
The pancreas is a compound, finely nodular gland. The lobules are visible on gross examination, and are connected by connective tissue septa which contain the ducts, blood vessels, lymphatics, and the nerves. The basic subunit of the exocrine part is the acinus, which is at its base a spherical mass of secretory cells called acinar cells[4]. The spherical acinus connects to a goblet-shaped neck that consists of tubular cells called duct cells. The inner lumen of the acinus forms the terminal portion of the secretory duct. The pancreatic ductal system is lined by columnar epithelium. Goblet cells and occasional argentaffin cells are also present.
Obstructive cause of acute pancreatitis is most frequently due to gallstones. However, only 3% to 7% of patients who have gallstones, will develop an attack of acute pancreatitis in their lifetime. Gallstone pancreatitis is more common in women than men because gallstones are more frequent in women[5]. Acute pancreatitis occurs more commonly when a patient harbours a smaller stone, less than a diameter of 5 mm, as they are more likely to traverse down the cystic duct to go on to obstruct the ampulla. Intermittent and continuous obstruction of the ampullary orifice due to a gallstone or edema induced by stone passage is the inciting factor in the pathogenesis of gallstone-induced pancreatitis. Microlithiasis refers to "aggregates <5 mm in diameter, of cholesterol mono hydrate crystals or calcium bilirubinate granules detected as "sludge" within the gallbladder" on ultrasonography or on examination of bile obtained during ERCP[6].

2. Material and Methods

Present study was conducted at SAIMS, Indore for 01 Year on 100 patients attending the general surgery department with clinical features of Acute Pancreatitis are evaluated clinically and subjected to laboratory and radiological investigations as per the designed proforma. Data pertinent to the scoring systems will be recorded within 24 h of admission to the hospital. Once diagnosis is established the patient disease severity will be assessed by BISAP scoring system.
Biliary Pancreatitis was presence of gall stones/biliary sludge in the gall bladder or bile duct, which was documented by any radiological methods. Alcoholic Pancreatitis was considered, when the patient found to have regular high intake of alcohol daily, or if there was binge of alcohol consumption prior to the onset of illness and has no signs of other etiologies present. Idiopathic pancreatitis was the one with no identifiable etiological factor based on the history, or after initial investigations.

Inclusion criteria:-
1. Characteristic abdominal pain.
2. Increased levels of Serum amylase and/or lipase 3 times the normal value.
3. Ultrasonography of the abdomen demonstrating changes consistent with acute pancreatitis.

Exclusion criteria:-
1. Proven cases of chronic pancreatitis.
2. Hereditary pancreatitis.
3. Acute pancreatitis patients with organ failure at or within 24hrs of presentation

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Fig No. 1: Schematic diagram of Pancreas

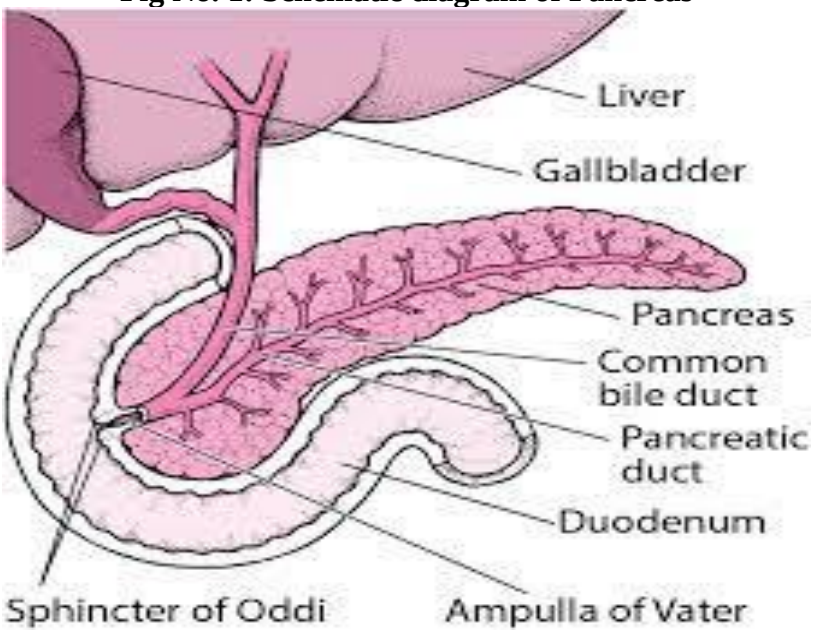

Fig No. 2: BISAP Criteria for Acute Pancreatitis

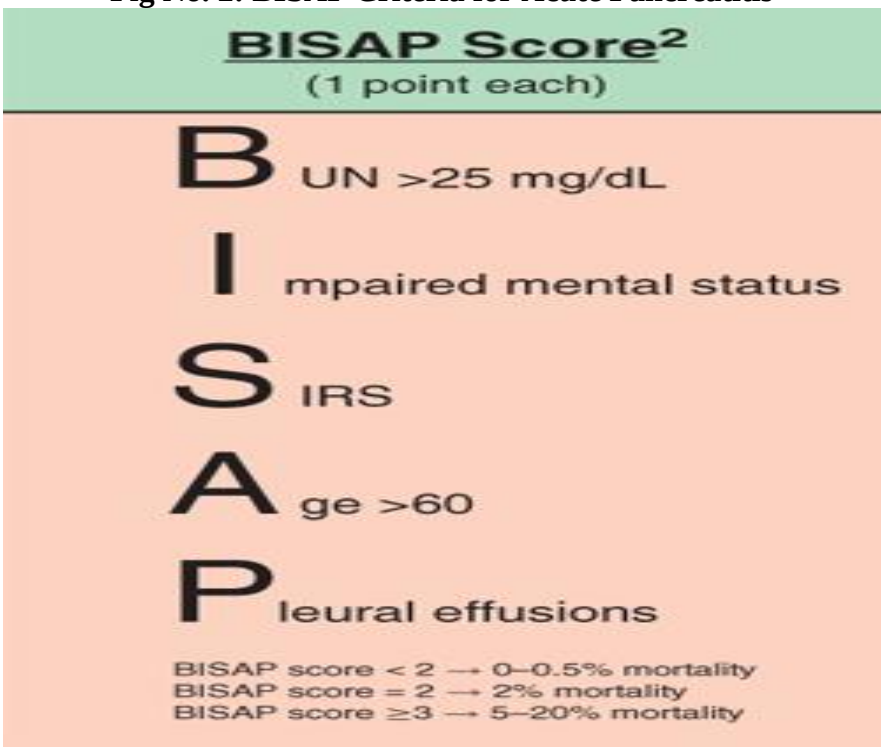

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Fig No. 3: Large mesenteric and Omental fat inflammation following Acute Fulminating Pancreatitis

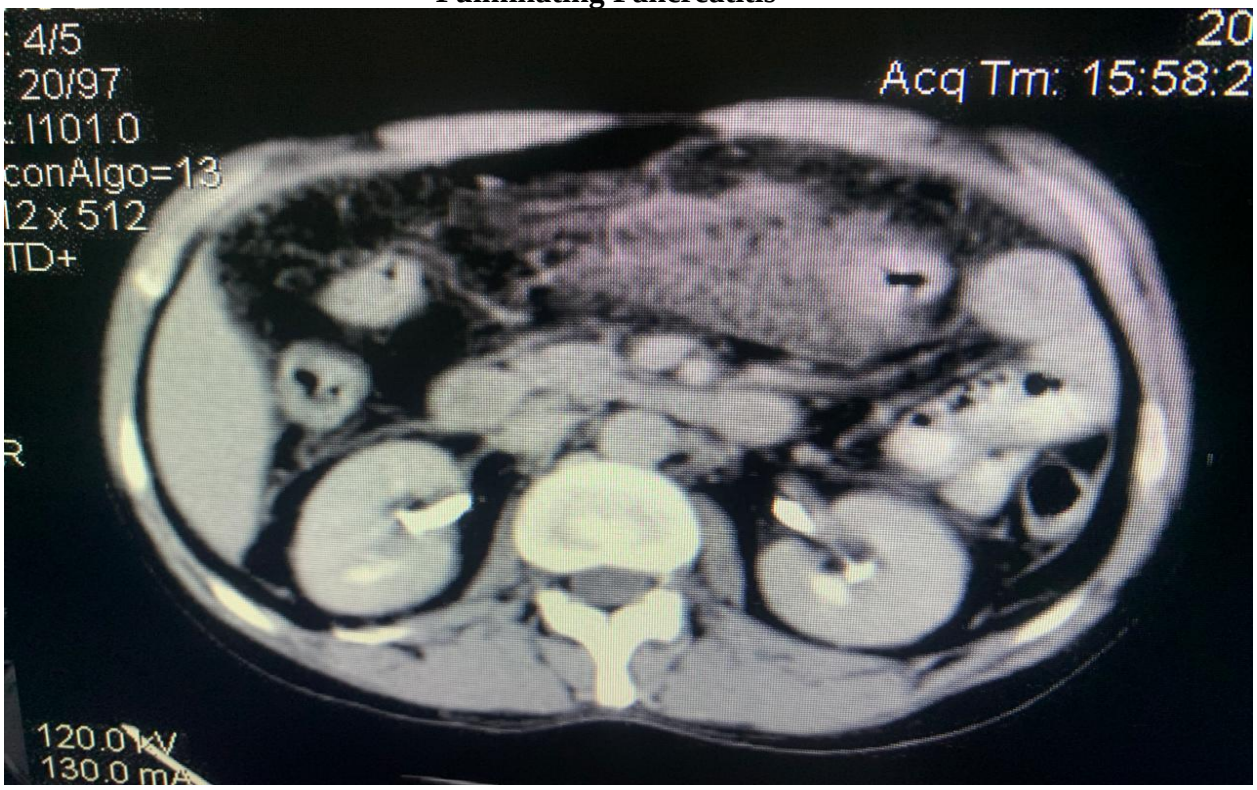

Fig No. 4: Acute Pancreatitis involving tail of pancreas

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3. Result

Table No. 1: Age Distribution

Age Range(years)	No. of patients	Percentage (%)
21yrs -30yrs	18	18
31yrs -40yrs	34	34
41yrs -50yrs	30	30
51yrs -60yrs	18	18
Total	100	100

The peak incidence of the disease was noted in the 4th & Males were most commonly affected than female with a ratio of 9:1.

Table No. 2: Length of Hospital Stay

Days in hospital	No. of patients	Percentage (%)
1 day – 7 days	20	20
8 days – 14 days	34	34
15 days – 21 days	34	34
22 days – 28 days	08	08
> 28 days	04	04
Total	100	100

The length of hospital stay ranges from 1 day to 32 days. The mean length of hospital stay was 13.98 days.

Table No. 3: Etiology

Etiology	No. of patients	Percentage (%)
Alcohol	54	54
Gall Stone Disease	24	24
Drug induced	02	02
Hypertriglyceridemia	02	02
Trauma	04	04
Idiopathic	14	14

History of consumption of alcohol and the possibility of it being the etiological factor were found in 54 patients. Gall stone disease was attributed in 24 patients. Hyperlipidemia and drugs as causative factor presented in 02 patients in each category, respectively. There was clear cut history of blunt trauma with CT scan showed isolated pancreatic laceration presented in 04 cases. No cause could be attributed in rest of the 14 patients.

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Table 4: Correlation with Mortality

		Mortality		TOTAL
		Yes	**No**	
BISAP Score	> 4	04	04	08
	< 4	00	92	92
Total		04	96	100

Out of 100 patients, 08 patients presented with > 4 score and 92 patients presented with < 4.

Table 5: BISAP Score of Patients

BISAP Score	**No**	**Percentage**
01	11	11
02	43	43
03	32	32
04	14	14

Out of 100 patients, maximum patients found in score 02 i.e. 43% followed by score 03 32%.

4. Discussion

Acute pancreatitis is a relatively common disease with varied clinical presentations. Severe acute pancreatitis has a high morbidity and mortality rate[7]. Early hospitalization and management according to disease severity maybe beneficial to identify those who require aggressive interventions to prevent the severe attack.

Acute pancreatitis was found to be 9 fold more common in males than females in this study. However this result did not exactly match with previous study results, (6:1) & (5.1:1). This could be explained by alcohol ingestion being the commonest etiology in this study[8].

The most common etiological factor in this study was alcohol (54%) & matches with Bidarkundi et al (46.67%), but didn't correlate with results in which gallstone disease found to be the most common cause, 27% & 36% respectively[9].

The mean length of hospital stay was 13.8 days in this study. In this study, increasing BISAP score was correlated well with the duration of hospital stay. The most common presentation was predominantly abdominal pain (96%), followed by vomiting (44%), vomiting & other manifestations (30%) [10-11].

5. Conclusion

We concluded from this study, Alcohol (54 %) was found to be the most common etiological factor for acute pancreatitis. Males were most commonly affected than female with a ratio of 9:1. The most common age groups of patients affected were in 4^{th} decade of life.

The overall mortality in patients with severe acute pancreatitis was 8%. The BISAP score predicted disease severity and mortality significantly in this study, hence early identification and initiation of treatment can significantly alter the outcome.

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