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Original Research

Etiologic, Clinical profile and outcome of patients with severe acute pancreatitis in a tertiary care hospital

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ABSTRACT:

Background: Acute pancreatitis is a complex condition with diverse local and systemic complications, dealt by the surgeons all over the world. The present study was conducted to study the clinical profile and outcome of patients with severe acute pancreatitis. **Materials & Methods:** The study was conducted on 80 patients of acute pancreatitis. Clinical profile including history, examination findings, etiology of pancreatitis, clinical severity (according to Modified Marshall Score , BISAP score, APACHE II, HAPS score, SOFA score) was recorded. **Results:** 80 patients 54 (67.5%) patients were in the age group of 18-40 years, 18 (22.5%) patients were in 40-60 years group while 8 (10%) were aged > 60 years. Mean age of patients was 40.6 ± 12.8 years. Majority of the patients were male 32 (80%) and female were only 8 (20%). Majority of the patients i.e. 44 (55%) had alcohol consumption as etiological factor causing SAP followed by biliary 20 (25%) & idiopathic 10 (12.5%). Hypertriglyceridemia and drug induced (herbal medication) pancreatitis was present in 2 (2.5%) patient each. Out of all 2 (2.5%) patient had history of both alcohol consumption and presence of gall stone as etiological factor. Patients who improved had mean BISAP SCORE of 2.25 ± 0.42, Modified Marshall score of 3.46 ± 1.26, APACHE II score of 8.56 ± 4.45, SOFA score 6.54 ± 2.49, RANSON's score 6.85 ± 0.60 and HAP score of 0.56 ± 0.46. **Conclusion:** Acute pancreatitis is one of the leading causes for increase morbidity and mortality to society. Most common etiology of severe acute pancreatitis is alcohol followed by biliary etiology. Clinical assessment along with lab markers correlated well with the mortality and morbidity. Multiple organ failure, ICU admission and mortality are higher in pancreatitis present with necrosis.

Key words: Acute pancreatitis, APACHE II, Severity scores.

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INTRODUCTION

Acute pancreatitis is a complex condition with diverse local and systemic complications, dealt by the surgeons all over the world. Acute pancreatitis (AP) is an acute inflammatory condition of pancreas leading to pancreatic autodigestion & is caused by activation of proteolytic enzymes in pancreatic acini itself. It is a common disease with wide clinical variation and increasing incidence. The average mortality rate in severe acute pancreatitis approaches 2-10 %.

The American College of Gastroenterology (ACG) practice guidelines provide acceptable terminology for the classification of Acute Pancreatitis and its complications.[3] Acute Pancreatitis is broadly classified (the Atlanta classification) as mild and severe: Mild acute pancreatitis is often referred to as interstitial pancreatitis, based on its radiographic appearance. Severe acute pancreatitis implies the presence of organ failure, local complications, or pancreatic necrosis. Interstitial pancreatitis implies preservation of pancreatic blood supply; necrosis suggests the disruption of pancreatic blood supply with resulting ischemia.[1-3]

The prediction of severity is the important component in management of acute pancreatitis as patients require intensive care and monitoring. The scoring systems such as Bedside Index for Severity in Acute Pancreatitis (BISAP), Acute Physiology and Chronic Health Evaluation II (APACHE II), Harmless Acute Pancreatitis Score (HAPS), Sequential organ failure assessment (SOFA) have been developed to predict severe pancreatitis.[4] These scoring systems all have a high false positive rate, are complex and cumbersome. Other parameters have also been correlated with

severity of pancreatitis such as Hematocrit >44%, Blood urea nitrogen level >20 mg/dl, Creatinine level >1.8 mg/ dl and the presence of SIRS during first 24-48 hours to identify patients who are at greatest risk for severe disease and most likely to benefit from a high-intensity nursing unit. Evidence of necrosis on CECT also is a risk factor for development of severe acute pancreatitis.[5] Therefore, the radiological scores like Computed tomography severity index (CTSI) and modified CTSI are also used to predict severe pancreatitis.

Early accurate diagnosis is very important for it's management. Symptoms of acute pancreatitis vary considerably. For this reason the clinician must carefully evaluate information derived from other sources that supplement the history and physical examination including laboratory tests, imaging studies before arriving at a correct diagnosis of acute pancreatitis. If the cause of the attack can be eliminated there will be no further attacks and the pancreas will return to normal in terms of its morphology and function.

Management of acute pancreatitis has changed significantly over the past years. Early management is nonsurgical, solely supportive and patients with infected necrosis with worsening sepsis need intervention. Early intensive care has definitely improved the outcome of patients

The present study was conducted to study the etiologic, clinical profile and outcome of patients with severe acute pancreatitis.

MATERIALS & METHODS

The first step was obtaining Institutional Review Board and Institutional Ethics Committee approval with waiver of informed consent. The study was conducted in Surgery Department to study the clinical profile including nutritional, biochemical and radiological profile and outcome of the patients admitted with severe acute pancreatitis. An informed consent was obtained from the patients. After fulfilling following inclusion and exclusion criteria, total of 80 patients were selected as a part of study.

Inclusion criteria

Patients of any age group with clinical, laboratorial and radiological findings (CECT abdomen) suggestive of acute pancreatitis were included in the study.

Exclusion criteria

Exclusion criteria were patients with chronic pancreatitis; patients with other pancreatic pathologies like pancreatic malignancies, cyst; any previous pancreatic surgery; patients contraindicated for contrast enhanced CT abdomen (renal failure, contrast allergy, pregnancy etc.).

Demographic data, clinical profile including history, examination findings, etiology of pancreatitis, clinical severity (according to Modified Marshall Score , BISAP score, APACHE II, HAPS score, SOFA score), perfusion status (including type of I/V fluids, amount, baseline CVP & Urine Output, CVP & Urine Output at 72 hrs), analgesics used (type and duration), antibiotics used (type and duration), nutritional profile of the patient including BMI, anthropometric measurements, Mini Nutritional Assessment score, type and duration of enteral feed. Biochemical profile including routine and individually ordered investigations such as hemogram, RFT, LFT, Coagulation profile, RBS, LDH, S. Amylase, S. Lipase, CRP, S. Calcium, S. Magnesium, S. Phosphorous, ABG analysis, Procalcitonin levels etc. Final Outcome of patient was recorded. Data were described in terms of range; mean ±standard deviation (± SD). A probability value (p value) less than 0.05 was considered statistically significant.

RESULTS

Table 1: Distribution of patients as per Age & Gender

Variables	Number	%
Age (in years)		
18-40	54	67.5
40-60	18	22.5
>55	8	10
Male: Female	32:8	80:20

Table 1 shows that out of 80 patients 54 (67.5%) patients were in the age group of 18-40 years, 18 (22.5%) patients were in 40-60 years group while 8 (10%) were aged > 60 years. Mean age of patients was 40.6 ± 12.8 years. Majority of the patients were male 32 (80%) and female were only 8 (20%).

Table 2: Etiology of Severe Acute Pancreatitis (SAP) among patients

Etiology of SAP	Number	%
Alcohol	44	55
Biliary	20	25
Idiopathic	10	12.5
Alcohol & Biliary	2	2.5
Drug induced	2	2.5
Hypertriglyceridemia	2	2.5

Table 2 depicts etiology of Severe Acute Pancreatitis (SAP) among patients. Majority of the patients i.e. 44 (55%) had alcohol consumption as etiological factor causing SAP followed by biliary 20 (25%) & idiopathic 10 (12.5%). Hypertriglyceridemia and drug induced (herbal medication) pancreatitis was present in 2 (2.5%) patient each. Out of all 2 (2.5%) patient had history of both alcohol consumption and presence of gall stone as etiological factor.

Table 3 Management plan among patients

Management plan used	Number	%
Conservative	44	55
Conservative + PCD*	36	45
Conservative + Endoscopic	0	0
PCD +Laparoscopic Surgical necrosectomy	6	7.5
PCD + Open Surgical Necrosectomy	4	5

Table 3 shows that in 44 patients (55%) out of 80 patients only conservative management was used while 36 (45%) patients underwent USG guided percutaneous drainage was done. Out of these 36 patients, 6 (7.5%) patients required Laparoscopic Necrosectomy & 4 (5%) patients required open necrosectomy in addition to ultrasound guided PCD.

Table 4: Final outcome of patients

Final outcome	Number	%
DAMA	18	22.5
Expired	10	12.5
Improved	52	65

Table 4 shows that out of total 18 patients admitted with severe acute pancreatitis 52 patients (65%) were improved and were discharged. Ten patients (12.5%) expired and 18 patients (22.5%) were discharged against medical advice. Both expired and DAMA were considered to be poor outcome.

Table 5 Association of various clinical severity scores (mean) with final outcome

	Improved	Poor Outcome		
	Mean ± SD	Mean ± SD	t	p-value
BISAP SCORE	2.25 ± 0.42	2.71 ± 0.91	-2.440	0.01
Modified Marshall	3.46 ± 1.26	4.29 ± 1.49	-1.308	0.14
APACHE II	8.56 ± 4.45	14.60 ± 8.71	-2.770	0.001
SOFA score	6.54 ± 2.49	6.86 ± 2.2	-0.407	0.46
RANSON's score	6.85 ± 0.60	4.64± 2.42	-1.610	0.16
HAP score	0.56 ± 0.46	1.04 ± 04.	-1.894	0.08

Table 5 shows that patients who improved had mean BISAP SCORE of 2.25 ± 0.42, Modified Marshall score of 3.46 ± 1.26, APACHE II score of 8.56 ± 4.45, SOFA score 6.54 ± 2.49, RANSON's score 6.85 ± 0.60 and HAP score of 0.56 ± 0.46.

Table 6 Association of Mean CT severity scores at admission with outcome

CT Severity scores	Improved	Poor Outcome	t	p-value
	Mean ± SD	Mean ±SD		
	6.64 ± 2.56	5.40 ± 3.45	0.66	0.46

Table 6 shows association of mean CT severity scores at admission with outcome. Mean CT severity score in patients who improved was 6.64 ± 2.56 and in patients with poor outcome CT severity score was 5.40 ± 3.45. There was no statistically significant association between CT severity index and outcome (p= 0.46).

DISCUSSION

Out of 80 patients 54 (67.5%) patients were in the age group of 18-40 years, 18 (22.5%) patients were in 40-60 years group while 8 (10%) were aged > 60 years. Mean age of patients was 40.6 ± 12.8 years. Majority of the patients were male 32 (80%) and female were only 8 (20%).

Similar results were given by Santvoort et al[6] who stated maximum number of patients were aged below 45 years with mean age of 40.3 years.

The present study reported majority of the patients i.e. Majority of the patients i.e. 44 (55%) had alcohol consumption as etiological factor causing SAP followed by biliary 20 (25%) & idiopathic 10 (12.5%). Hypertriglyceridemia and drug induced (herbal medication) pancreatitis was present in 2 (2.5%) patient each.

In the present study all patients had mean BISAP SCORE of 2.25 ± 0.42, Modified Marshall score of 3.46 ± 1.26, APACHE II score of 8.56 ± 4.45, SOFA score 6.54 ± 2.49, RANSON's score 6.85 ± 0.60 and HAP score of 0.56 ± 0.46

Howard et al[8] reported that out of 31 patients with SAP 74.19% had BISAP score ≥ 2 and 25.81% had BISAP score <2. APACHE II score of ≥ 8 and < 8 was present in 80.65% and 19.35% patients with SAP respectively. 83.9% had RANSON score ≥ 3 and 16.13% had RANSON score < 3. Patel et al[9] reported that out of 40 patients with SAP, 37.5% patients had BISAP score ≥ 3, 80% had RANSON score >3, 65% had APACHE II score ≥ 8.

The present study reported that out of total 80 patients admitted with severe acute pancreatitis 52 patients (65%) were improved and were discharged. Ten patients (12.5%) expired and 18 patients (22.5%) were discharged against medical advice. The results of the study are supported by Rao et al.[10]

Baig et al[11] reported out of 159 patients with BISAP score ≤ 2 mortality was present in 3 (1.9%) patients. Since present study shows BISAP score at admission ≥3 and maximum PCT during hospitalization were significantly correlating with outcome therefore association between these parameters was studied in present study and found a significant association between these two (p=0.03). Patients with BISAP score ≥ 3 had significantly higher PCT levels during hospitalization. As PCT is a marker of presence of infection, patients with BISAP score ≥ 3 had higher probability of developing infection during hospital stay. The present study shows that mean CT severity score in patients who improved was 7.64± 2.59 and in patients with poor outcome was 6.50 ± 3.51. There was no statistically significant association between CT severity index and mortality (p= 0.39). Similar results were reported by Singla et al.[13]

In study done by Patel S at el[9] 15% patients were in shock and required ionotropic support, 25% had respiratory failure, 35% had renal failure and 6% had multi organ failure at admission, 25% morality in necrotizing pancreatitis.

Among the dead patients the most common etiological factor was alcohol and majority of them died due to MODS. This requires further studies to establish proper hospital policies for the management of alcoholic pancreatitis and for the treatment of MODS.

CONCLUSIONS

Acute pancreatitis is one of the leading causes for increase morbidity and mortality to society. Clinical assessment along with lab markers correlated well with the mortality and morbidity. Multiple organ failure, ICU admission and mortality are higher in pancreatitis present with necrosis. Out of severity scores (BISAP, APACHE II, SOFA, HAPS) only BISAP score ≥3 is predictive of poor outcome in patients with severe acute pancreatitis. Early NJFT feeding in severe acute pancreatitis leads to improved outcome.

REFERENCES

1. Boon NA, College NR, Walker BR, Hunter AA (Editors) Davidson's Principles and Practice of Medicine. London Churchill Livingstone, 20th edition. 2006; 904-09
2. Singh VK, Bollen TL, Wu BU, et al. An assessment of the severity of interstitial pancreatitis. Clin Gastroenterol Hepatol 2011; 9:1098.
3. Lankish PG, Apte M, Banks PA. Acute Pancreatitis. LANCET. 2015;386(9988):85-96.
4. Meier R, Beglinger C. Nutrition in pancreatic diseases. Best Prac Res Clin Gastroenterol. 2006;20(3):507-29.
5. Makhija R., Kingsnorth NA. Cytokine Storm in acute pancreatitis. J Hepatobiliary. Pancreat Surg. 2002;9:401-10.
6. Santvoort V, Besselink M, Bakker O, Hofker HS, Boermeester M, Dejong C, et al. Step-up Approach or Open Necrosectomy for Necrotizing Pancreatitis. N Engl J Med. 2010;362:1491-502.
7. Pandol SJ, Saluja AK, Imrie CW, Banks PA. Acute

pancreatitis: bench to the bedside. Gastroenterology. 2007;132:1127-51.
8. Howard JM, Hess W, Traverso W. The pancreatic duct: the prosector of Padua, Italy. J Am Coll Surg. 1998;187:201-11.
9. Patel S, Patel T, Hada D, Suvera M, Parmar H. Clinical profile and outcome of acute pancreatitis and necrotizing pancreatitis. IAIM. 2015;2(7):116-20.
10. Rao BS, Vani MS. Chandra VS. Etiology, clinical profile, severity and outcome of acute pancreatitis in relation to bedside index for severity of acute pancreatitis BISAP and CTSI scores. Int J Med Res Health Sci. 2014;3(4):922
11. Maharaul HH, Dhorajia D. A single institute study of clinical profile of acute pancreatitis. Indian journal of applied research. 2015;5(10):700- 2.
12. Baig SJ, Rahed A, Sen S. A prospective study of the aetiology, severity and outcome of acute pancreatitis in Eastern India. Trop Gastroenterol. 2008;29(1):20-2.
13. Singla SK, Jain NP, Gupta S, Virk SS. Clinical profile and outcome of severe acute pancreatitis. NJIRM. 2013;4(6):71-4.
14. K Suthar, D Solanki, A Rathod. A Study of Clinical Profile of Acute Pancreatitis in AMCMET Medical College: A Retrospective Study. Natl J Integr Res Med 2018; 9(2):8-11.