



Clinical Profile of Patients of Acute Pancreatitis in A Rural Tertiary Care Hospital in North India

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Abstract

Background: Retrospective and hospital-based observation study which aims at assessing etiology, clinical profile, severity, outcome of acute pancreatitis (AP).

Materials and Methods: This is a hospital-based study by retrospective record analysis of 100 acute pancreatitis cases in this tertiary care center which have clinical/ laboratory/ radiological findings suggestive of acute pancreatitis.

Results: This study on 100 patients includes 89% male and 11% female patients. Mean age was 41.01 ± 13.84 years. Alcohol was the most common cause of acute pancreatitis in 83% of patients, followed by gallstone in 5% of patients, followed by 4% idiopathic cause. 8% of the patients had combined etiology of alcohol and gallstones. Out of 100 patients, 84% were mild, 14% were moderate, and 2% were severe according to Modified Marshall Scoring system and CT severity score. The majority of patients with acute pancreatitis had raised levels of amylase. Pain abdomen was present in all the patients, vomiting was present in 70% of the patients. Mean hematocrit value is 37.72 ± 7.99 . It was found to be less than 44 in 76 (90% of mild AP) patients, 13 (92.8% of moderate AP) patients and in both the severe AP patients.

Conclusion: Pain abdomen followed by vomiting and fever were the most common presenting symptoms and were mostly seen in adult males. Alcohol was the most common etiology followed by gallstones. Hematocrit is a useful predictor of severity of pancreatitis.

Keywords: Acute Pancreatitis, Clinical Profile, Outcome, Severity.

Introduction

Acute pancreatitis is a complex condition with diverse local and systemic complications. It is an acute inflammatory condition of the pancreas leading to pancreatic auto-digestion with varying involvement of regional tissues or remote organ systems and with potentially devastating consequences. Acute pancreatitis runs a benign course; Gallstones and alcohol are the main etiology.

^[1] In 80% of patients, acute pancreatitis is mild and

resolves without serious morbidity, but in up to 20%, acute pancreatitis is complicated by substantial morbidity and mortality.^[2] The average mortality rate in severe acute pancreatitis approaches 2–10%.^[3] According to the severity, acute pancreatitis is divided into mild acute pancreatitis (absence of organ failure and local or systemic complications, moderately severe acute pancreatitis (no organ failure or transient organ failure less than 48 hours with or without local complications) and severe acute

pancreatitis (persistent organ failure more than 48 hours that may involve one or multiple organs).^[4] Gallstone migration and alcohol abuse are the most common underlying etiology, with gallstones being more frequently seen in women.^[5]

Serum amylase and serum lipase are used to establish the diagnosis of pancreatitis, irrespective of etiology. In patients presenting with acute abdominal pain to the emergency department or the acute surgical cases, these tests are routinely used to confirm the diagnosis of pancreatitis. Nevertheless, few studies have suggested that serum lipase is a more sensitive biomarker of acute pancreatitis compared to serum amylase.^[6] While these tests have high diagnostic value, it is found that they are not useful in determining the severity of the disease. Ranson's criteria, the Acute Physiology and Chronic Health Evaluation (APACHE II) scale, and the Computed Tomography Severity Index are some commonly used methods for determining the severity of this disease. Imaging modalities like endoscopic ultrasonography and magnetic resonance cholangiopancreatography are among the newer options available to physicians for determining the cause of pancreatitis and assessing the complications. Our study was conducted to assess etiology, clinical profile, severity and outcome of acute pancreatitis.

Materials And Methods

This is a Retrospective Observational study investigating the etiology, clinical profile, severity and outcome of acute pancreatitis. Inpatient records of 100 patients diagnosed with acute pancreatitis from September 2019 to January 2020 (5 months) were reviewed. Patients were selected for study according to documented symptoms and signs compatible with Acute Pancreatitis. Patients with chronic abdominal pain, maldigestion with weight loss, radiological evidence of chronic pancreatitis were excluded.

Data collected included demography, symptoms and signs such as Pain abdomen, vomiting, fever, abdominal tenderness, constipation, rigidity/guarding, ascites, icterus and Hypoxia. Laboratory studies and radiological investigations such as Ultrasound, CT were reviewed, underlying etiology and Biochemical analyses recorded at presentation included serum amylase, liver function tests (alanine aminotransferase, alkaline, and total bilirubin, hematocrit, serum creatinine. Severity was assessed according to CT findings, Organ failure scoring (using Modified Marshall Scoring {**Figure No.1**}) and Revised Atlanta Classification.

Figure No.1

Modified Marshall Scoring System for Organ Dysfunction					
Organ System	Score				
	0	1	2	3	4
Respiratory (PaO ₂ /FIO ₂)	>400	301-400	201-300	101-200	<101
Renal*					
Serum creatinine (µmol/l)	≤134	134-169	170-310	311-439	>439
Serum creatinine (mg/dl)	<1.4	1.4-1.8	1.9-3.6	3.6-4.9	>4.9
Cardiovascular (systolic blood pressure, mm Hg)†	>90	<90, fluid responsive	<90, not fluid responsive	<90, pH<7.3	<90, pH<7.2

A score of 2 or more in any system defines the presence of organ failure.
 *A score for patients with pre-existing chronic renal failure depends on the extent of further deterioration of baseline renal function. No formal correction exists for a baseline serum creatinine ≥134 µmol/l or ≥1.4 mg/dl.
 †Off inotropic support

Results

A total of 100 patients with acute abdomen who were diagnosed as acute pancreatitis based on clinical presentation, serum amylase and/or lipase levels and radiological findings by ultrasound and CT abdomen were included in the study. Among which 89% were male and 11% were female. Mean age was 41.01 ±13.84 years. Maximum number of patients were seen in age group of 18 – 40 years (47.6%). Baseline parameters, clinical signs and symptoms, etiological profile, severity and outcome have been tabulated in Table no.1.

Alcohol was the most common cause of acute pancreatitis in 83% of patients, followed by gallstone in 5% of patients and 4% idiopathic cause. 8% of the patients had combined etiology of alcohol and gallstones. Overall mean length of stay was 6 ± 3.5 days. 78% of patients had hospital stay of less than 1 week and 22% patients had hospital stay of more than 1 week. Duration of hospital stay was less than 1 week in 80% of mild AP, in 69% of moderate AP cases and 50% of severe AP cases. Out of 100 patients, 84% were mild, 14% were moderate, and 2% were severe according to Modified Marshall Scoring system and CT severity score. Majority of the patients with acute pancreatitis had raised levels

of amylase. Amylase levels were available for 90 patients out of which it was raised in 77.7% cases. Raised lipase levels were present in 85.7% cases out of 14 patients for which the data was available.

Pain abdomen was present in all the patients while vomiting was present in 70% of the patients. It was present in 70% of mild AP cases and in 78% of moderate AP cases. Fever was present in 10 (11.9%) mild AP and 4 (28.5%) moderate AP cases. 7% patients with mild AP had constipation and 4 % had abdominal distension. 6 (7%) of the mild and 1 (7%) moderate AP patient had loose stools. 49 (58%) of mild, 12 (85%) of moderate and both of the severe AP cases had abdominal tenderness. Guarding/Rigidity were seen in 7 (8%) mild AP cases and in 1 (7%) case of moderate AP. Icterus was seen in 9% patients; 6 (7%) mild AP and 3 (21%) moderate AP cases and Ascites was seen in 17% patients; 11 (13%) mild AP and 6 (42%) moderate AP cases. Hypoxia was present in 1 case of mild AP (1.1%) and moderate AP (7%) each. Mean hematocrit value was 37.72±7.99. It was found to be less than 44 in 76 (90%) of mild AP patients, 13 (92.8%) of moderate AP patients and in both (100%) the severe AP patients.

Table-1 Baseline Profile of Patients with Acute Pancreatitis

		Total(n=100)	Male (n=89)	Female (n=11)
Age		41.01±13.84		
Rural		94	84	10
Urban		6	5	1
Presenting symptoms/Signs				
	Pain abdomen	100	89	11
	Vomiting	70	65	5
	Fever	13	10	3
	Constipation	7	7	
	Loose stools	7	6	1
	Abd. Distension	4	4	
	Abd. Tenderness	63	60	3

	Rigidity/Guarding	8	7	1
	Icterus	9	8	1
	Ascites	17	17	
	Hypoxia	1	1	
S.Bil Total		.95±1.87		
Hct		37.72±7.99		
SGOT		54.63±39.42		
SGPT		51.99±53.49		
S.Bil Direct		.47±1.10		
S.Bil Indirect		.48±.81		
S. Amylase		523.06±481.56		
S. Creatinine		.89±.22		
Duration of Hospital stay		6.00±3.5		
Severity	Mild	84	76	8
	Moderate	14	12	2
	Severe	2	1	1
Etiology	Alcohol	83		
	Gallstones	5		
	Idiopathic	4		
	Alcohol + Gallstones	8		

Table-2 Comparison of various parameters with Severity in patients of Acute Pancreatitis

Parameter		Moderate		
		Mild AP	AP	Severe AP
Age	18-40	40	10	1
	41-60	36	2	1
	>61	8	2	0
Sex	M	76	12	1
	F	8	2	1
Rural		78	14	2
Urban		6	0	0
Pain Abdomen		84	14	2
Vomiting		58	11	1

Fever		10	4	0
Constipation		7	0	0
Loose stools		6	1	0
Abd. Distension		4	0	0
Abd. Tenderness		49	12	2
Rigidity/Guarding		7	0	0
Icterus		6	3	0
Ascites		11	6	0
Hypoxia		1	1	0
Hct	<44	76	13	2
	>44	8	1	0
Duration of Hospital stay	<1 week	67	10	1
	>1 week	17	4	1
Etiology	Alcohol	70	11	2
	Gallstones	5	0	0
	Idiopathic	4	0	0
	Alcohol+ Gallstones	6	2	0

Discussion

Acute pancreatitis is a common disease with wide clinical presentation and its incidence is increasing. It is classified according to its severity from mild self-limiting pancreatic inflammation to pancreatic necrosis with life-threatening sequelae. Severity of acute pancreatitis is indicated by the presence of systemic organ dysfunctions and/or necrotizing pancreatitis. The factors which cause death in most patients with acute pancreatitis seem to be related specifically to multiple organ dysfunction syndrome and these deaths account for 40–60% of in-hospital deaths in all age groups. An improved outcome in the severe form of the disease is based on early identification of disease severity and subsequent focused management. Male to female ratio was 8:1 in our study. This could be due to alcohol consumption being more common in males in this state. Similar results were found in a study by K. Vengadkrishnan and A. K. Koushik ^[7] where acute pancreatitis was found five times more common in males than in

females. Alcohol-induced acute pancreatitis is more common in middle-aged men. Idiopathic acute pancreatitis has similar incidence in both men and women and accounts for 20%–34% of cases. ^[8]

Ours was a hospital based retrospective study of 100 patients. The mean age of patients was 41.01 ±13.84 years. 51% of the patients were in the age group of 18-40 years. High consumption of alcohol from early age in the rural population of Haryana could explain higher incidence in this age group. Alcohol was found to be the major etiological factor in 83% of the patients and gallstones in 5%. This is comparable to studies of Gullo, Lucio. et al. ^[9] which also concluded that alcohol and gallstones are major etiological factors in northern studies. Gallstone was found to be more common etiology in females owing to higher prevalence of gallstones in them and less alcohol consumption. Most common presentation was pain abdomen and was present in all the patients. Other symptoms like vomiting was present in 70% of the patients, fever in 13% and constipation and loose

stools in 7% of patients. This correlates with the study of Jeffrey C F Tang, MD; Chief Editor: et al.^[10] in their study pain epigastrium was found to be the most common presentation followed by vomiting.

The hematocrit value has shown to be a prognostic marker for the severity of AP, and its prognostic significance emphasizes the pathophysiologic role of fluid loss in the severity of pancreatitis and the role of vigorous fluid replacement in the course of disease. In our study hematocrit was found to be less than 44 in majority (89%) of the patients. Similar findings seen in a study by Lankisch PG1, Mahlke R, et al.^[11] Which concluded that hematocrit, as a single parameter measured on admission, had the same sensitivity and negative predictive value as the more complicated Ranson and Imrie scores obtained only after 48 h. All the 100 patients admitted in our institute had recovered and there was no mortality.

Conclusion

Acute pancreatitis presenting most commonly as pain abdomen followed by vomiting and fever is usually seen in adult males. Alcohol was the most common etiology followed by gallstones. Majority of the patients were seen to have raised amylase and lipase levels but they don't indicate severity. Most of the patients have mild form of AP diagnosed with the help of CT severity score and modified Marshall scoring. Hematocrit is a useful predictor of severity of pancreatitis.

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