

# Clinical Study of Acute Pancreatitis and its Management at a Tertiary Care Centre

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## Abstract

**Introduction:** Acute pancreatitis includes wide spectrum of disease, from one with mild self-limiting symptoms, to fulminant processes with multiorgan failure and high mortality. Most experience relatively minor episodes of disease characterized by mild parenchymal edema without distant organ dysfunction and uneventful recovery. Severe episodes, however, may involve a progression to extensive pancreatic necrosis, development of the systemic inflammatory response syndrome (SIRS), multiorgan failure, rapid clinical deterioration, and even death. Although the overall mortality rate for acute pancreatitis is 2–10%, this is related primarily to 10–30% of patients with severe disease characterized by pancreatic and peripancreatic necrosis. **Aims and Objectives:** To study the etiology and clinical profile of acute pancreatitis. **Material and Methods:** Data collection by meticulous history taking and clinical examination, appropriate laboratory and radiological investigations and follow-up of cases. **Results:** Study was conducted with 50 patients. The peak incidence of acute Pancreatitis was observed in 2<sup>nd</sup> to 4<sup>th</sup> decade. Mean age of the study subjects was 39.78 years with 55% of the cases between 21-40 years of age. The findings shows that pancreatitis occurs in relatively younger adults. Strong male predominance was seen among study subjects as there were 72% males and 28% females with male to female ratio as 2.57:1. **Conclusion:** Acute Pancreatitis is more common in 2<sup>nd</sup> to 4<sup>th</sup> decades. Acute Pancreatitis is more common in males. Pancreatitis was observed to be more common among young adults especially male with alcoholism induced pancreatitis being the commonest etiology followed by biliary etiology. Most of the patients were presented with pain in abdomen with ascites being the commonest complication. Majority of the cases can be managed successfully with conservative approach and the overall mortality is low, however cases with severe pancreatitis and associated organ failure tends to have higher mortality.

**Keywords:** Alcoholism, Acute Pancreatitis, Young Adults

## 1. Introduction

Acute pancreatitis is a common condition involving the pancreas. The estimated incidence is about 3% of cases presenting with pain abdomen in the UK. The hospital admission rate for acute pancreatitis is 9.8/100000 per year in UK and annual incidence may range from 5-50/100000 worldwide<sup>1</sup>.

In 1889 Reginald Fitz provided the first complete description of acute pancreatitis<sup>2</sup>.

Gall stone disease and alcohol account for greater than 80% of all patients with acute pancreatitis, with biliary disease accounting for 45% and alcohol found in 35% of patients<sup>3</sup>.

In 1974, in a landmark paper, Acosta and Ledesma showed that acute pancreatitis associated with gallstone disease is caused by transient blockage of the ampulla of Vater by a migrating gallstone<sup>4</sup>.

Acute pancreatitis includes wide spectrum of disease, from one with mild self-limiting symptoms, to fulminant processes with multiorgan failure and high mortality. Most experience relatively minor episodes of disease characterized by mild parenchymal edema without distant organ dysfunction and uneventful recovery. Severe episodes, however, may involve a progression to extensive pancreatic necrosis, development of the systemic inflammatory response syndrome (SIRS), multiorgan failure, rapid clinical deterioration, and

even death. Although the overall mortality rate for acute pancreatitis is 2–10%, this is related primarily to 10–30% of patients with severe disease characterized by pancreatic and peripancreatic necrosis<sup>5</sup>.

Given the wide spectrum of disease seen, the care of patients with pancreatitis must be highly individualized. Patients with mild acute pancreatitis generally can be managed with resuscitation and supportive care.

Etiological factors are sought and treated, if possible, but operative therapy essentially has no role in the care of these patients. Those with severe and necrotizing pancreatitis require intensive therapy, which may include wide operative debridement of the infected pancreas or surgical management of local complications of the disease. Whereas early aggressive debridement was used commonly for all patients with pancreatic necrosis in the past, now most pancreatic surgeons have adopted a more conservative algorithm of Selective and delayed pancreatic debridement.

The present study evaluates the etiology, clinical manifestations, diagnostic methods, and management of Acute Pancreatitis in Tertiary Care Centre.

## 2. Aims and Objectives

1. To study the various etiological factors of acute pancreatitis.
2. To study the clinical presentation.
3. To study management of acute pancreatitis.

## 3. Material and Methods

### Type of Study:

Prospective Study

### Study Period:

From 2016 August to 2018 December.

### Study Setting:

The study group will be obtained from patients visiting the OPD and cases admitted in the IPD for acute pancreatitis in the department of General Surgery at Dr. Vasantrao Pawar Medical College Hospital and Research Centre, Nashik – 422003, Maharashtra, India.

### Eligibility Criteria

#### Inclusion Criteria

All patients admitted in Medical College and Hospital and diagnosed as acute pancreatitis base on clinical presentation, lab reports, USG and CT scan finding.

#### Exclusion Criteria

- Patients with chronic pancreatitis and acute on chronic pancreatitis.
- Patients with Carcinoma pancreas and pseudocyst of pancreas.
- Patients not willing to be a part of this study.

After admission to the hospital, a detailed clinical history and examination of the patient will be done. Relevant investigations will be undertaken to make the diagnosis.

Routine investigations like complete hemogram, blood urea, serum calcium and serum amylase will be performed. CT Abdomen will be done routinely to confirm the diagnosis, for evaluation of the biliary tract and for detecting any complications. Contrast enhanced CT Abdomen will be undertaken when the diagnosis is doubtful, when USG is not confirmative and when patient fails to improve beyond 72 hours.

The treatment plan will be focused on adequate initial resuscitation and supportive care, early detection of complications and definitive treatment of associated biliary disease.

Data like clinical symptoms and signs, results of investigations, complications, surgical procedures if any, duration of hospital stay, recurrence if any will be carefully recorded.

#### Follow-up

At the time of discharge, all the patients were advised to attend the surgical OPD regularly for follow up. Any recurrences or complications were noted.

## 4. Results

**Table 1.** Distribution of cases as per age group.

Age Group (years)	N	%
< 20	5	10.0%
21-30	13	26.0%
31-40	17	34.0%
41-50	8	16.0%
51-60	5	10.0%
61-70	2	4.0%
<b>Total</b>	<b>50</b>	<b>100.0%</b>

Mean age of the study subjects was 39.78 years with 60% of the cases between 21–40 years of age. The findings

shows that pancreatitis occurs in relatively younger adults. Strong male predominance was seen among study subjects as there were 72% males and 28% females with male to female ratio as 2.57:1 (Table 1).

**Table 2.** Distribution of cases as per presenting symptoms

Symptoms	N	%
Pain in Abdomen	36	72.0%
Fever	17	34.0%
Vomiting	31	62.0%
Jaundice	12	24.0%

Most common symptom observed among cases of pancreatitis was pain in abdomen, observed in all cases. Other common symptoms among acute pancreatitis cases were vomiting (62%), fever (34%) and icterus (24%) (Table 2).

**Table 3.** Distribution of cases as per etiology

Etiology	N	%
Alcohol	30	60.0%
Biliary/Gall Stones	16	32.0%
Trauma	1	2.0%
Idiopathic	3	6.0%
Total	50	100.0%

Most common etiology observed among cases of acute pancreatitis was alcoholism (60%). Other common etiologies were biliary/ gall stones (32%) and trauma (2%). Prevalence of idiopathic cases was 6% among acute pancreatitis (Table 3).

Prevalence of mild, moderate and severe cases among acute pancreatitis subjects was 28%, 48% and 24% respectively.

**Table 4.** Distribution of cases as per associated complications

Complications	N	%
Ascites	7	14.0%
Pleural effusion	4	8.0%
Necrosis	3	6.0%
Fluid collection	2	4.0%
Pseudocyst	2	4.0%
GI bleeding	1	2.0%

Organ failure	1	2.0%
Shock	1	2.0%
Malignancy	0	0.0%

Common complications associated with acute pancreatitis cases were ascites (14%), pleural effusion (8%), necrosis (6%) and localized fluid collection (4%). Pseudocyst (4%), organ failure, GI bleeding, and shock was observed in 1 case each (2%) (Table 4).

**Table 5.** Distribution of cases as per Management strategy

Management	N	%
Conservative	42	84.0%
Surgical	8	16.0%
Total	50	100.0%

A total of 84% cases of acute pancreatitis were managed conservatively while 16% cases required surgical intervention (Table 5).

Overall mortality rate among pancreatitis cases was 4%.

## 5. Discussion

A hospital based prospective study was conducted on patients admitted in ward and intensive care unit in tertiary care hospital. The aim was to study the clinical profile, management and outcome of patients with acute pancreatitis. A total of 50 consecutive patients who have been diagnosed to have acute pancreatitis were included in the study.

### 5.1 Demography

Mean age of the study subjects was 39.78 years with 55% of the cases between 21-40 years of age. The findings shows that pancreatitis occurs in relatively younger adults. Strong male predominance was seen among study subjects as there were 72% males and 28% females with male to female ratio as 2.57:1.

In a similar study by Shakeel *et al.*<sup>6</sup> mean age of study subjects was 37.4 years with highest patients in the age group of 20-39 years (51%) followed by 40-59 years (36%). Males constituted 80% and females 20%.

In another study on acute pancreatitis by Prasad *et al.*<sup>7</sup> out of 40 patients, 22 were males and 18 were females.

Majority of patients were in the age group of 21–40 (57.5%).

The study by Negi *et al.*<sup>8</sup> included 72.35% male and 27.65% female patients with male to female ratio was 2.6:1, study by Kashid A *et al.*<sup>9</sup> included 70.91% male and 29.09% females, study by Choudhuri *et al.*<sup>10</sup> included 66.6% males and 33.4% females, the study by Pupelis *et al.*<sup>11</sup> included 73.7% males and 26.3% females, the study by Buchler *et al.*<sup>12</sup> included 61% males and 39% females. The age of patients ranged between 18 to 81 years. The mean age was 42.89 ±12.53 years.

The result observed in present study and that by other authors showed that pancreatitis mainly affects younger adults with male being affected more than females. The gender bias can be attributed to the etiology of pancreas i.e. alcohol which is consumed predominantly by males in Indian community.

## 5.2 Clinical Presentation

The clinical presentation varies from case to case, depending on severity of acute pancreatitis and any underlying co-morbidities. A patient may present with minor complaints of pain epigastrium on one extreme and multi-organ system failure on the other end<sup>13</sup>.

Mild acute pancreatitis presents with minimal organ dysfunction and an uneventful recovery while severe acute pancreatitis is associated with local and systemic complications and higher mortality, thus it is important to identify patients having severe disease<sup>14</sup>.

In present study, most common symptom observed among cases of pancreatitis was pain in abdomen, observed in all cases. Other common symptoms among acute pancreatitis cases were vomiting (62%), fever (34%) and icterus (24%).

Although pain in abdomen is the most common symptom of pancreatitis, no specific features easily distinguishes pain caused by pancreatitis, from that caused by other abdominal conditions. In a study by Shakeel *et al.*<sup>6</sup> abdominal pain was the presenting symptom in all the patients with acute and acute on chronic pancreatitis.

Our results also correlate with a study conducted by Lee *et al.* in which 30 (86%) patients out of 35 cases had abdominal pain<sup>15</sup>.

In another study by Prasad *et al.*<sup>7</sup> all the patients of acute pancreatitis presented with pain abdomen, 80% of them presented with nausea/ vomiting, 42.5% of them presented with fever and 30 % of them with jaundice.

In present study, prevalence of mild, moderate and severe cases among acute pancreatitis subjects was 28%, 48% and 24% respectively. The comparison of prevalence of cases of acute severe pancreatitis is tabulated below.

## 5.3 Etiology

Most common etiology observed among cases of acute pancreatitis was alcoholism (60%). Other common etiologies were biliary/ gall stones (32%) and trauma (2%). Prevalence of idiopathic cases was 6% among acute pancreatitis.

In a study by Prasad *et al.*<sup>7</sup> most common etiology observed among male cases of acute pancreatitis was alcoholism (50%) while in female cases was biliary pathology (72%). In Negi *et al.*<sup>8</sup> the major etiological groups for cases of acute pancreatitis were: alcohol 73 cases (59.3%) and gallstones 40, (35.6%).

Our study results also correlate well with the observations made by Shakeel *et al.* and Lee *et al.*<sup>15</sup> These findings shows that alcoholism is the most common etiology for acute pancreatitis.

## 5.4 Complications

Common complications associated with acute pancreatitis cases were ascites (14%), pleural effusion (8%), necrosis (6%) and localized fluid collection (4%). Pseudocyst (4%), organ failure, GI bleeding and shock was observed in 1 case each (2%).

Negi *et al.*<sup>8</sup> in their study observed common complications as: ascites (22.76%) and pleural effusion (21.14%). Similar results were also observed by Shakeel *et al.*<sup>6</sup> where ascites and pleural effusion were the commonest complications.

## 5.5 Management and Outcome

A total of 84% cases of acute pancreatitis were managed conservatively while 16% cases with biliary/ gall stones required surgical intervention. Overall mortality rate among pancreatitis cases was 4%.

In a study by Negi *et al.*<sup>8</sup> most of the cases were managed conservatively (5%). Out of total 123 patients, 116 patients recovered and 7 patients died. So overall mortality in this study was 5.7 %. Out of 7 patients who died, 5 had severe pancreatitis and 2 had moderate pancreatitis.

Our results also correlate with study by Bota *et al.*<sup>16</sup> where overall mortality rate was 4.6%.

## 6. Conclusion

From the results of present study, it was concluded that, pancreatitis was observed to be more common among young adults especially male with alcoholism induced pancreatitis being the commonest etiology followed by biliary etiology. Most of the patients were presented with pain in abdomen with ascites being the commonest complication.

Majority of the cases can be managed successfully with conservative approach and the overall mortality is low, however cases with severe pancreatitis and associated organ failure tends to have higher mortality. As pancreatitis mimics many other acute abdominal conditions, the diagnosis of acute pancreatitis must include a careful consideration of differential diagnosis, which should include perforated viscus, acute cholecystitis, appendicitis, and similar conditions.

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