

## A Study on Clinical Profile and Complications of Acute Pancreatitis at a Tertiary Care Centre, Ahmedabad: A Case-Series

Darshan Parmar\*, Rakesh A. Makwana\*\*

### Abstract:

**Introduction:** Acute pancreatitis accounts for 3% of all cases of abdominal pain among patients admitted to hospital in the UK. The prevalence of pancreatitis in India is 2.6-3.2 cases per 100,000. Major causes of acute pancreatitis are biliary calculi and alcohol abuse. Acute pancreatitis may be categorized as mild (interstitial oedematous pancreatitis), moderately severe acute pancreatitis or severe (necrotising pancreatitis). The majority of patients will have a mild attack of pancreatitis. Severe acute pancreatitis is seen in 5–10% of patients, and is characterized by pancreatic necrosis, a severe systemic inflammatory response and often multi-organ failure. **Objective:** To study Age, Sex distribution, Etiology, Clinical presentation & complications of Acute Pancreatitis. **Methods:** Retrospective Observational Study of 10 patients presenting to civil hospital, Ahmedabad OPD/Emergency department with complains of abdominal pain and showing acute pancreatitis on ultrasound or CT scan were included. **Results:** Out of 10 patients, 40% were from 50-59 year age group, 70% were males, 60% were Chronic Alcoholic, 50% had Pleural effusion, 80% had Ascites and 30% had Pancreatic necrosis. **Conclusion:** Acute Pancreatitis is common in adult males with Alcohol abuse and second common etiology being Gall stones. Common sequelae include Ascites and Pancreatic Necrosis.

**Keywords:** Acute pancreatitis, Alcohol, Gall stone, Walled off necrosis

### Introduction:

Acute pancreatitis accounts for 3% of all cases of abdominal pain among patients admitted to hospital in the UK. The hospital admission rate for acute pancreatitis is 9.8 per year per 100,000 population in the UK, although worldwide, the annual incidence may range from 5 to 50 per 100,000. The disease may occur at any age, with a peak in young men and older women.<sup>(1)</sup> The prevalence of pancreatitis in India is 2.6-3.2 cases per 100,000 population.<sup>(2)</sup>

The underlying mechanism of injury in pancreatitis is thought to be premature activation of pancreatic enzymes within the pancreas, leading to a process of autodigestion. Anything that injures the acinar cell and impairs the secretion of zymogen granules, or damages the duct epithelium and thus delays enzymatic secretion, can trigger acute pancreatitis. Once cellular

injury has been initiated, the inflammatory process can lead to pancreatic oedema, haemorrhage and, eventually, necrosis. As inflammatory mediators are released into the circulation, systemic complications can arise, such as haemodynamic instability, bacteraemia (due to translocation of gut flora), acute respiratory distress syndrome and pleural effusions, gastrointestinal haemorrhage, renal failure and disseminated intravascular coagulation (DIC).

The two major causes of acute pancreatitis are biliary calculi, which occur in 50–70% of patients, and alcohol abuse, which accounts for 25% of cases. Abdominal pain felt mainly in epigastrium but may be localised to either upper quadrant or felt diffusely throughout the abdomen. Nausea, repeated vomiting and retching are usually marked accompaniments. The retching may persist despite the stomach being kept empty by nasogastric aspiration. Acute pancreatitis may be categorised as mild (interstitial oedematous pancreatitis), moderately severe acute pancreatitis or severe (necrotising pancreatitis). The former is characterised by interstitial oedema of the gland and minimal organ dysfunction. The majority of patients

\* Senior Resident,

\*\* Associate Professor,

Department of General Surgery,

B. J. Medical College & Civil Hospital, Ahmedabad,

Gujarat, India

**Correspondence :** Dr. Darshan Parmar

**E-mail :** darshanparmar007@gmail.com

will have a mild attack of pancreatitis, the mortality from which is around 1%. Severe acute pancreatitis is seen in 5–10% of patients, and is characterised by pancreatic necrosis, a severe systemic inflammatory response and often multi-organ failure.<sup>(1)</sup>

**Mild acute pancreatitis:**

- o no organ failure;
- o no local or systemic complications.

**Moderately severe acute pancreatitis:**

- o organ failure that resolves within 48 hours (transient organ failure); and/or
- o local or systemic complications without persistent organ failure.

**Severe acute pancreatitis:**

- o persistent organ failure (>48 hours);

**Methods:**

The study was conducted with objective of Age, Sex distribution, Etiology, clinical presentation & complications of Acute Pancreatitis

It was a retrospective observational type study with study sample size of 10 cases for case-series reporting. All patients presenting to civil hospital, Ahmedabad in OPD/Emergency department from March 2021 to May 2021 meeting inclusion criteria for acute pancreatitis defined below were included in the case series.

**Inclusion Criteria:**

(Presence of at least two of the following)

1. Acute abdominal pain and tenderness suggestive of pancreatitis
2. Serum amylase/lipase  $\geq 3$  times the normal
3. Imaging findings (USG and/or CT) suggestive of Acute Pancreatitis
4. Age between 10-60 yrs

**Exclusion Criteria:**

1. Age <10 yrs and >60 yrs

**Results:**

In present study, most common age group is 50-59 years as 40% patients belonging to this group. In

present study regarding gender distribution, 70% were male patients and 30% were female patients showing male preponderance. Male: Female ratio was 2.33: 1. In our study, abdominal pain was the most common presenting complaint as clinical presentation in all patients (100%) & vomiting was seen in 40%.

Of total, 60% patients were chronic alcoholic in present study. Among all these patients, half patients (50%) had pleural effusion.

**Table 1: Age distribution of Acute Pancreatitis**

Age (Years)	No of patients	Percentage (%)
10-19	1	10
20-29	3	30
30-39	2	20
40-49	0	0
50-59	4	40

**Table 2: Etiology of Acute Pancreatitis Cases**

Etiology	No. of patients	Percentage (%)
Alcohol	6	60
Gall stones	2	20
Idiopathic	2	20

**Table 3: Distribution of Acute Pancreatitis Complications**

Complications	No. of patients	Percentage (%)
Pancreatic necrosis	3	30
Pancreatic pseudocyst	1	10
Ascites	8	80
Walled off necrosis	1	10
No collection	3	30

Most common complication was ascites (80%) followed by pancreatic necrosis in 30% patients. (Table 3)

Among these patients, 20% patients had normal value

**Table 4 : Laboratory investigation - Comparison of Acute Pancreatitis Cases**

	Laboratory investigations	No. of patients	Percentage (%)
Total count (4000-10000/cmm)	<10000	5	50
	>10000	5	50
Serum billirubin (0.2-1.2 mg/dl)	<2	9	90
	>2	1	10
Serum alkaline phosphatase (40-125iu/l)	<100	9	90
	>100	1	10
Serum amylase (25-125 u/l)	<100	2	20
	>100	8	80
Serum lipase (8-78 u/l)	<300	2	20
	>300	8	80

and were further diagnosed with ultrasound abdomen. 1 patient (10%) had altered liver profile. (Table 4)

#### Discussion:

In present study, most common age group is 50-59 years as 40% patients belonging to this group. In study by Chauhan Y et al.,<sup>(3)</sup> it was conducted in 50 patients and was hospital-based prospective study. In this study, majority of the patients were in the age group of 41-60 years (44%) followed by patients 21-40 years of age (40%) and 7 (14%) patients were above 60 years of age. The studies done by Negi et al.<sup>(4)</sup> where 47.15% were in the age group of 41-60 years and 43.91% were in the age group of 18-40 years.

In our study, 70% patients were male patients and 30% were female patients showing male preponderance, Male: Female ratio was 2.33: 1. In study by Chauhan Y et al.,<sup>(3)</sup> males outnumbered females and the male to female ratio was 1.38:1. The studies of Negi et al.<sup>(4)</sup> showed male to female ratio of 2.6:1. In our study, most common etiological factor in present study was alcohol in 60% patients, gall stones in 20% patients and idiopathic in 20% patients. In study by Chauhan et al., alcohol was the commonest cause of pancreatitis (50%) followed by gall stone pancreatitis (32%)<sup>(3)</sup>

Alcohol was the commonest cause of pancreatitis (59.34%) followed by gall stone pancreatitis (32.52%) in a study done by Negi et al.<sup>(4)</sup>

In our study, abdominal pain was the most common presenting complaint in all patients (100%). This correlates with the studies by Negi et al.<sup>(4)</sup> & Chauhan Y et al.<sup>(3)</sup> In our study, vomiting was seen in 40%. This is comparable to the study done by Negi et al.<sup>(4)</sup> & Chauhan Y et al.<sup>(3)</sup> where vomiting was seen in 42%. In our study, most common complication was ascites (80%) followed by pancreatic necrosis in 30% patients. In study by Chauhan et al.<sup>(3)</sup>, the most common pancreatic complication was pancreatic necrosis seen in 23 (46%) of the patients. However, study done by Maharaul et al.<sup>(5)</sup> showed pancreatic necrosis in only 2% of the patients. This may be due to differences of severity of pancreatitis.

Pancreatic pseudocyst was seen in none of the patients in our study as sample size is small while it was observed in 4% and 12% patients in studies done by Maharaul<sup>(5)</sup> and Chauhan Y et al.<sup>(3)</sup> respectively. In present study, pleural effusion was seen in 50% of patients. However, pleural effusion was observed in 11 (22%) of the patients in study done by Chauhan Y et al.<sup>(3)</sup> which is similar to study done by Maharaul<sup>(5)</sup> where it was seen

in 18% of the patients.

The mean length of stay in present study was 7.4 days. The mean length of stay in study by Ahlawat V et al.<sup>(7)</sup> was found to be 6.82 days. In mild and severe AP, it was 5.73 and 11.78 days respectively. Overall, it was lower as compared to mean hospitalisation time of 9.51 days of the Jamaican study by Reid et al.<sup>(6)</sup>

**Conclusion:**

Acute pancreatitis is common in old age (50-59 years) with male preponderance (more than twice likely). Most common presenting symptom is Abdominal pain (100%) followed by vomiting (40%). Alcohol (50%) is most common etiological factor followed by Gall stones (32%). Pleural effusion was seen in 50% patients. Most common sequela is ascites (80%) followed by pancreatic necrosis (30%).

Larger studies are required to draw final conclusion.

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