

## Original Research

### Assessment of clinical profile in acute pancreatitis patients

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#### ABSTRACT

**INTRODUCTION:** Acute pancreatitis is inflammation of pancreas that can be associated with peri-pancreatic collection and sepsis. Aim of Study: 1) To study the clinical profile in acute pancreatitis patients, 2) To study the peri-pancreatic collection/necrosis and the outcome in terms of any intervention: **MATERIALS & METHODS:** A prospective study was conducted in 100 patients with acute pancreatitis admitted at DMCH, Ludhiana. **RESULTS:** Maximum cases were in age group of 31-40 (27%) with male predominance (67%) with biliary etiology (44%). Radiological evidence was seen in 90% cases with peripancreatic collection in 53%. NJFT was put in 66% cases. 58 patients were admitted in ICU with ventilator support (25%) and inotropes (31%) cases. PCD insertion was done in 34 patients and necrosectomy in 11, ERCP in 5 patients and cholecystectomy in 3 cases. In 44 Peripancreatic Collection Samples, 40 showed growth (positivity rate 90.9%) with Klebsiella – most common isolate. Mean length of stay in the hospital was 19 days. Final outcome of patients included 65% discharged, 24% took DAMA and 5% expired. **CONCLUSION:** This study helped us to find out that how severity of acute pancreatitis and the interventions are related and its impact on the final outcome of the patients. Patients with positive cultures were in need of NJFT, ICU care, ventilator support and inotropes and were not only managed medically but also with interventions including ERCP, PCD insertion and surgeries with length of hospital stay increased.

**KEYWORDS:** Prospective Study, Acute Pancreatitis, Clinical Profile, Outcomes

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#### INTRODUCTION

Acute pancreatitis is defined as acute inflammatory condition of the pancreas. Clinical spectrum and manifestations of acute pancreatitis range from a mild, self-limiting disease to severe and sometimes fatal disease with local and systemic involvement. Early identification of those who are at a high risk of mortality and morbidity can help us with use more aggressive treatment rationally helping to decrease mortality rate. This study will help to understand how the clinical manifestations and severity of pancreatitis

are related and help in better management with early and appropriate intervention.

#### AIMS AND OBJECTIVES

- 1) To study the clinical profile in acute pancreatitis patients
- 2) To study the peri-pancreatic collection/necrosis and the outcome in terms of any intervention

#### MATERIALS AND METHODS

SOURCE OF DATA

A prospective study was conducted in 100 patients diagnosed with acute pancreatitis admitted in Medicine, Surgery and Allied specialties wards at Dayanand Medical College and Hospital, Ludhiana.

**Inclusion Criteria –**

- 1) Patient diagnosed with acute pancreatitis as per clinical and lab feature
- 2) Patient age > 18 years
- 3) Patient of either gender

**Exclusion Criteria**

- 1) Patients not satisfying inclusion criteria
- 2) Patients not willing to take part in the study
- 3) Patients with pancreatic cancer
- 4) Age < 18 years

**OBSERVATIONS AND RESULTS**

Maximum cases of acute pancreatitis were seen in age group of 31-40 with 27% cases.

There was male predominance (67%).

Most cases were gall stone induced i.e. biliary etiology (44% cases).

Pain abdomen was found in 100% cases and tenderness in 94% cases.

Amylase and lipase levels were raised with mean levels of 622 and 941 respectively.

Evidence of pancreatitis was found in 90% cases on radio-imaging with necrotizing type in 56% cases with peripancreatic collection in 53% patients.

NJFT was put in 66% cases. 58 patients were admitted in ICU with ventilator support with inotropes given to 25% and 31% cases respectively.

PCD insertion for peripancreatic collection was required in 34 patients and necrosectomy in 11 patients. ERCP was performed in 5 patients and cholecystectomy in 3 cases.

In case of 44 Peripancreatic Collection Samples, there were 40 samples showing growth thus positivity rate of 90.9%. 25 samples showed monomicrobial growth and 15 polymicrobial (14 samples showing 2 organisms and 1 sample showing triple organisms) thus a total of 56 isolates obtained. Gram negative isolates were predominant. K. pneumoniae and E. coli were the most common isolates.

Mean length of stay in the hospital was 19 days.

Final outcome of patients included 65% discharged, 24% took DAMA and 5% expired.

**Table-1 Distribution according to age group**

AGE GROUP	No. of cases	Percentage
< 30	20	20.0%
31-40	27	27.0%
41-50	23	23.0%
51-60	16	16.0%
> 60	14	14.0%
Total	100	100.0%

**Table- 2 Distribution according to sex**

SEX	No. of cases	Percentage
Female	33	33.0%
Male	67	67.0%
Total	100	100.0%

**Table - 3 Distribution according to etiology**

ETIOLOGY	No. of cases	Percentage
GALL STONE INDUCED	44	44.0%
ALCOHOLIC	31	31.0%
TRAUMA	2	2.0%
HYPERTRIGLYCERIDEMIA	3	3.0%
POST ERCP	2	2.0%
HYPERCALCEMIA	8	8.0%
ANY OTHER	9	9.0%

**Table-4 Distribution according to symptoms**

SYMPTOMS	No. of cases	Percentage
ABDOMINAL PAIN	100	100.0%
ABDOMINAL DISTENSION	41	41.0%
FEVER	58	58.0%
NAUSEA	90	90.0%
VOMITING	84	84.0%
DIARRHOEA	13	13.0%
CONSTIPATION	5	5.0%
BREATHLESSNESS	35	35.0%
URINE OUTPUT	14	14.0%
ALTERED SENSORIUM	14	14.0%
YELLOWISH DISCOLORATION OF URINE	11	11.0%
CLAY COLORED STOOLS	4	4.0%

**Table-5 Distribution according to complications**

COMPLICATIONS_	No. of cases	Percentage
PANCREATIC COLLECTION	53	53.0%
ASCITES	41	41.0%
PLEURAL EFFUSION	35	35.0%

**Details of patients who expired**

Number = 5

Most common cause of pancreatitis = Alcohol

Hepatorenal involvement was seen in 3 patients.

Coagulopathy was seen in all 5 patients.

Ascites and pleural effusion was seen in 4 patients.

Average CRP = 181.5

Necrotizing pancreatitis was seen in 3 cases.

Average length of stay in the hospital = 21.2 days

All the cases required ICU care and ventilator and inotropes support

PCD insertion was done in 3 patients and of these 2 underwent necrosectomy  
 Details of patients who took DAMA  
 Number = 24

Table -6 Distribution according to need for intervention

NEED FOR INTERVENTION	No. of cases	Percentage
PCD INSERTION	34	34.0%
NECROSECTOMY	11	11.0%
CHOLECYSTECTOMY	3	3.0%
CHOLEDOCHOLITHOTOMY	1	1.0%
ERCP	5	5.0%
EMBOLIZATION	2	2.0%
DUODENAL PERFORATION REPAIR	1	1.0%
EXPLORATORY LAPAROTOMY	1	1.0%
ADHESIOLYSIS	1	1.0%

Table -7 Distributions according to final outcome

FINAL OUTCOME	No. of cases	Percentage
DAMA	24	24.0%
DISCHARGED	65	65.0%
DISCHARGED ON REQUEST	6	6.0%
EXPIRED	5	5.0%
Total	100	100.0%

Most common cause of pancreatitis = Alcohol  
 Coagulopathy was found in 22 patients  
 Ascites and pleural effusion seen in 15 and 17 patients respectively  
 Average CRP = 188.5.  
 Necrotizing pancreatitis was seen in 21 cases.  
 Average length of stay in the hospital was 28.1 days  
 Cases requiring ICU care = 22  
 Cases requiring ventilator support = 16  
 Cases requiring inotropes support = 17  
 PCD insertion was done in 14 patients and of these 6 underwent necrosectomy  
 In case of discharged patients, 12 underwent PCD insertion and of these 3 underwent necrosectomy, 4 were treated with ERCP and in 3 patients cholecystectomy was done.  
 In case of discharged at request patients, 2 underwent PCD insertion

## DISCUSSION

In a study conducted by SE Roberts et al, the incidence among women aged <35 years was 7.9% per year and among men aged 35–44 (5.7%) and 45–54 (5.3%).<sup>(1)</sup> In the same study, incidence was 3.9 times higher for alcoholic acute pancreatitis and 1.5 times for gallstone acute pancreatitis. There was also increase in number of cases of acute pancreatitis

during the Christmas and New Year weeks by 48% for alcoholic aetiology, but not for gallstone aetiology (9%). Incidence was higher in case of spirits and beer and not wine.<sup>(1)</sup> A study conducted by Maryam Nesvaderani et al showed females were two times more likely to have gallstone pancreatitis, whilst alcohol induced pancreatitis was less likely to occur in females.<sup>(2)</sup> Vengadkrishnan and Koushik et al. conducted a study in which they showed males had higher incidence of acute pancreatitis.<sup>(3)</sup> Lindkvist et al. had similar findings in their study showing males being affected with higher incidence.<sup>(4)</sup> Lauret Braña E et al in their study showed gallstones are the leading cause of pancreatitis (35-45%) and the risk increases with the age, female gender and small gallstones. They also showed that obesity is likely to contribute to pancreatitis by increasing gallstone formation.<sup>(5)</sup> In the study by Enas Ahmed Reda Alkareemy et al they showed gallstone was the most frequent etiology (56%) followed by idiopathic pancreatitis (26%).<sup>(6)</sup> Baig et al. observed alcohol was the most common cause followed by biliary stones.<sup>(7)</sup> Wang et al. confirmed that biliary stones (38%) and alcohol abuse (36%) were the most frequent causes of acute pancreatitis.<sup>(8)</sup>

In our study, gall stone and alcohol induced pancreatitis was seen predominantly in males. We also found that gall stones were the most common cause (44%) of acute pancreatitis followed by alcohol (31%). Faraz Shafiq et al also found surgical intervention was required in 12% (10 patients), while only 2.4% (2 patients) required radiological intervention.<sup>(9)</sup>

Giedrius Barauskas et al in their study found that interventional procedures were more often done in alcohol related pancreatitis than biliary pancreatitis.<sup>(10)</sup> But in our study we found 34 patients were in need of PCD insertion and 11 underwent necrosectomy. Enas Ahmed Reda Alkareemy et al found the mean hospital stay in studied patients was  $6.89 \pm 1.98$  days. The majority (92%) of patients improved while 4 patients (8%) died.<sup>(6)</sup> SE Roberts et al in their study found that mortality was 6.4% at 60 days.<sup>(1)</sup>

In our study, the mean length of hospital stay was  $19.78 \pm 17.51$  days. 65% patients were discharged, 24% took DAMA and 5% expired. Nicole B. Barilet al conducted a study in which aspirations of pancreatic collections were performed in 82 patients and samples sent for culture showing no growth in 40 patients and positive in 42. Twenty-nine patients had gram-positive organisms, 28 had gram-negative organisms, and 14 had yeast. Nineteen patients (45%) had multiple organisms, including one patient with four bacteria identified in a single aspirate. No anaerobic organisms were isolated on any aspirate. Staphylococcus was most common organism isolated. The death rates were 12% for culture-positive patients and 8% for the entire 82 patients.<sup>(11)</sup>

In a study done by Giedrius Barauskas et al it was found that number of bacterial isolates from the alcoholic pancreatitis patients was higher as compared to biliary pancreatitis (168 vs. 68).<sup>(10)</sup>

In the study conducted by Santhi Swaroop Vege, 52% of patients had an intraabdominal infection (bacterial infections) and 15% developed concomitant fungal infections, of which 7 were primary and 23 secondary fungal infections.<sup>(12)</sup> While in our study, in case of 44 Peripancreatic Collection Samples, there were 40 samples showing growth thus positivity rate of 90.9%. 25 samples showed monomicrobial growth and 15 polymicrobial (14 samples showing 2 organisms and 1 sample showing triple organisms) thus a total of 56 isolates obtained. Gram negative isolates were predominant. *K. pneumoniae* and *E. coli* were the most common isolates.

### SUMMARY AND CONCLUSION

100 patients of acute pancreatitis were studied and males (67%) of age group of 31-40 (27%) were found to be predominantly affected. Most common etiology was gall stone (44%) followed by alcohol (31%). Pain abdomen (100%) and tenderness (100%) being the most common symptom and sign. Evidence of pancreatitis was found on radio-imaging in 91% with with necrotizing type in 56% cases with peripancreatic collection in 53% patients. 58 patients were admitted in ICU with ventilator support with inotropes given to 25% and 31% cases respectively. PCD insertion for peripancreatic collection was required in 34 patients and necrosectomy in 11 patients. In case of 44 Peripancreatic Collection Samples, there were 40 samples showing growth thus positivity rate of 90.9%. 25 samples showed monomicrobial growth and 15 polymicrobial (14 samples showing 2 organisms and 1 sample showing triple organisms) thus a total of 56 isolates obtained. Gram negative isolates were predominant. *K. pneumoniae* and *E. coli* were the most common isolates. Mean length of stay in the hospital was 19 days. Final outcome of patients included 65% discharged, 24% took DAMA and 5% expired.

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