

**Original article:**

## **Acute biliary Pancreatitis: experience at a tertiary care centre in Assam**

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**Abstract:**

**Background:** Acute pancreatitis is a disease involving inflammation of the pancreas. Although there has been enormous improvement in diagnostic techniques and care acute pancreatitis continues to be health problem with considerable morbidity and mortality. There is scarcity of literature in relation to the disease from North East India. This study was undertaken to document the prevalence and clinical features of the Acute biliary pancreatitis patients treated at Gauhati Medical College over a period of one year.

**Methods:** From a group of 117 consecutive patients of Acute pancreatitis receiving treatment at Gauhati Medical College 35 were diagnosed as Acute biliary pancreatitis. 15 were male and 20 were female. Parameters like age at incidence, economic condition, addiction, diet, familial and past history, symptoms and clinical features were documented. Biochemical and radiological examination was done for each patient.

**Result:** Patients were aged between 14 to 70 years. None had any family history of disease. Co-morbid conditions were recorded in 23 patients. Jaundice and hepatomegally were common conditions. 25 had raised serum lipase, 21 had raised amylase and 5 patients had increased level of C-reactive protein.

**Conclusion:** The study shows a higher percentage of Acute biliary pancreatitis in Assam. The disease was also documented to be prevalent in middle and lower socio-economic group.

Key words: Biliary pancreatitis, pain abdomen, Gallstone Pancreatitis

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**Introduction:**

Acute pancreatitis ranges from a mild, self-limiting disease manageable through supportive measures to severe life-threatening disease. Increasing incidence of the disease has been reported worldwide [1]. The disease is believed to be of equal incidence in both the sexes [2]. The disease is classified into mild, moderate, and severe where about 80% of the cases are mild and self limiting whereas in 20% of the cases it could be severe [3, 4]. In spite of recent advancements made in treatment, the mortality rate of severe acute pancreatitis continues to be high ranging from 10%-30% as per some reports [5,6]. Biliary

pancreatitis is a major cause of acute pancreatitis in children, comprising 12 to 30% of all cases [7].

Gallstones and other biliary diseases are known to be common causes of acute pancreatitis. However, there is not much published data available relating to presentation, risk factors, and outcomes of acute biliary pancreatitis from Assam. The main objectives of this study were, to document the prevalence of acute biliary pancreatitis, the mortality rate and to understand whether the disease is associated with social deprivation and alcoholism or smoking.

**Methods:**

**Ethics statement:** Ethical clearance was obtained from ethics committee of Gauhati Medical College prior to conducting the study (MC/190/2007/PT-1/21).

**Study participants:** From 117 consecutive patients diagnosed as suffering from acute pancreatitis were included in the study. 35 patients diagnosed to have acute biliary pancreatitis were further studied as the following methodology. Patients of all age groups and sex were included in the study. Age, sex, family history, other co-morbid conditions were documented at presentation.

**Biochemical examination:** Routine examination of blood, blood sugar, urea, serum creatinine, serum amylase and lipase, serum LDH, serum calcium, liver function test was performed for each patient.

**Radiological investigation:** Radiological investigations like chest X-Ray, X-ray plain picture of the abdomen in erect posture, USG abdomen, CECT and MRCP of abdomen was carried out.

**Treatment:** The treatment plan was focused on adequate initial resuscitation and supportive

care, early detection of complication and definitive treatment of associated biliary disease. Surgery was taken as soon as the symptoms subside within the same stay in hospital either laparoscopic or open cholecystectomy.

**Assessment of severity and prognosis:**

Patients were graded according to presence or absence of Ranson’s prognostic signs. The grading was taken as a guide for the subsequent management of every case.

**Results**

Acute biliary pancreatitis was diagnosed in 35 patients (29.29%). Age of patients ranged from 14 to 70 years. The mean age was 39.4 years. 15 patients were male (42.85%) and 20 female (57.14%). 25 patients were non-vegetarian whereas 10 were vegetarian. All cases belonged to middle and low socio economic class. There was no past or family history in any of the patients. On admission, 14 (40%) found to have one or more of associated diseases namely gastritis, cholelithiasis, diabetes, hypertension (Table 1).

Table-1, Associated disease with Acute biliary pancreatitis

Associated disease	No of patients (%)
Gastritis	6 (17.14%)
Hypertension	3 (8.5%)
Diabetes	2 (5.7%)
Diabetes with hypertension	1 (2.8%)
Gastritis with hypertension	1 (2.8%)
Gastritis with diabetes & hypertension	1 (2.8%)

**Clinical Features:**

In 35 cases of acute biliary pancreatitis both male and female presented with history of pain abdomen (100%). Pain was sudden in onset with duration of few hours (1 to 12 hours). The site of presentation of pain varied amongst the patients with epigastrium in 19 (54.3%), epigastrium and right mid abdomen with radiation to back in 11 (31.4%) and generalized pain abdomen in 5 (14.3%) cases.

All patients presented with history of nausea and vomiting. Severe pain abdomen was associated with 4 to 5 episode of vomiting. Those who presented lately were unable to appreciate the exact number of episode of vomiting. 9 patient developed fever with chill and rigor within 1 week of admission. This group included patient having cholangitis with pancreatitis and patient of necrotizing pancreatitis. All patients with fever were treated with antibiotic and required prolong hospitalization.

10 patients had jaundice of which all had cholelithiasis on ultrasonography of abdomen where 5 of them had choledocholithiasis. Clinical findings revealed that tenderness was present in all patients, distension of abdomen in 30 (85.7), jaundice in 10 (28.5%), hepatomegaly in 5 (14.3%), pleural effusion in 5 (14.3%), epigastric lump in 4 (11.42%),

ascites in 2 (5.7%), confusion in 2 (5.7%), and shock in 2 (5.7%) patients respectively.

**Biochemical finding:**

From among 35 patients 25 had raised serum lipase above three times normal, 21 had raised amylase > 1000 IU/L and 5 patients had increased level of C-reactive protein. Serum bilirubin was raised in 10 cases. Serum creatinine was raised in 6 cases. Serum alkaline phosphatase was significantly raised in 11 cases. Random blood sugar was raised in 2 cases.

**Radiological finding:**

X-ray chest- showed pleural effusion in 8 cases, 6 had unilateral. Ultrasonography abdomen done showed inflammatory pancreatic condition and gall bladder calculi in 18 cases and biliary ascites in 2 case. Pseudocyst found in 4 cases. Twenty five cases were advised for CECT of abdomen of which 4 were diagnosed as Acute Necrotizing Pancreatitis.

**Assessment of severity and prognosis:**

All 35 cases were assessed and severity graded according to the Ranson’s Criteria in order to determine the prognosis of each case, which also helped to execute treatment as required by them. Table 3 shows the findings of these 35 cases. Table 4 summarizes the disease classification based upon severity.

**Table 3: Number of cases per variables of Ranson’s Criteria in Gallstone**

**Pancreatitis**

I. Gallstone Pancreatitis (n=9)					
At admission			Initial 48 hrs		
Variables	No(s) of cases	%	Variables	No(s) of cases	%
Age > 70 yrs	2	5.7%	Hct fall > 10%	3	8.5%
WBC > 18,000/mm <sup>3</sup>	6	17.1%	BUN > 2mg/100ml	4	11.4%
Glucose >	4	11.4%	Calcium > 8mg/100ml	4	11.4%
LDH > 40 IU/L	5	14.3%	Base deficit > 5	3	14.3%
AST > 250 U/100ml	4	11.4%	Fluid sequestration >	6	17.1%

**Table 4: Type of Acute Pancreatitis on the basis of severity**

<b>Grading</b>	<b>No. of patients (%)</b>
<b>I. Severe</b> <i>(Ranson's score &gt;3)</i>	<b>7 (20%)</b>
<b>II. Mild</b> <i>(Ranson's score &lt;3)</i>	<b>28 (80%)</b>

Laparoscopic cholecystectomy was done in 12 patients, open cholecystectomy with CBD exploration was done in 3 patients and cystogastrostomy was done in 2 patients.

**Complications:**

4 (11.4%) patients developed pseudocyst, One recovered on conservative treatment while the other had undergone USG guided percutaneous drain and 2 (5.7%) patients required surgical intervention for pseudocyst on follow up. 3 (8.5%) developed acute necrotizing pancreatitis of which 2 patients died before any surgical intervention could be undertaken developing secondary infection of necrotic mass with one requiring necrosectomy and the other responded to conservative treatment.

6 patients developed ARF and from among them 4 survived. Of the 6 ARF cases dialysis was carried out in 2 patients, one responded while the other one had expired. Total 7 cases had developed ARDS including 3 post-operative cases. Total mortality in this study was 2.

**Discussion:**

This study was an attempt to characterizes the presentation of 35 cases of acute biliary pancreatitis from a total 117 cases of acute pancreatitis. It was found that acute biliary pancreatitis constitute a major proportion of acute pancreatitis cases in Assam. Previous reports from other researchers suggests that

biliary tract disease accounts for one of the top three causes of acute pancreatitis [8,9].

In this study we found that associated disease like gastritis, hypertension and diabetes may be risk factors for acute biliary pancreatitis [10]. Serum amylase and lipase are commonly measured for diagnosis of acute pancreatitis [7,11,12]. In this study we also documented significantly higher Serum amylase and lipase amongst the patients.

Our data also suggests that gallstone pancreatitis account for 25.7% of the total cases. In the western world, Gallstones are the leading cause of pancreatitis that accounts for at least one half of the 4.8-24.2 cases of pancreatitis per 100,000 people [13,14,15]. The treatment of gallstone pancreatitis is usually conservative, including bowel rest and intravenous fluid replacement [16,17]. Laparoscopic cholecystectomy with preoperative endoscopic CBD clearance is recommended as a treatment of choice for biliary acute pancreatitis in mild disease<sup>18</sup>. Patients with biliary pancreatitis that resolves rapidly should undoubtedly be treated with a cholecystectomy prior to dismissal from the index hospitalization<sup>19</sup>. The risk of recurrent biliary pancreatitis should be quite low if ES is performed at the time of the ERCP<sup>20</sup>. If there is concern regarding the possibility of a retained CBD stone, ERCP can be performed

safely and almost always successfully following laparoscopic cholecystectomy<sup>21</sup>. Mortality was also significantly low in this study. Severity was also there in 20% of the cases. A larger case control study with larger number of patients will be required to understand the co-relation of different factors in a statistically significant manner.

**Conclusion:**

The study shows a higher percentage of acute biliary pancreatitis in Assam. The disease was

also documented to be prevalent in middle and lower socio-economic group. Mild pancreatitis can usually be managed conservatively. Patients with biliary pancreatitis that resolves rapidly should undoubtedly be treated with a cholecystectomy prior to discharge from the hospitalization. Cholecystectomy may follow only several weeks after the necrotizing pancreatitis has resolved.

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