



To evaluate the clinical profile of patients diagnosed with acute biliary pancreatitis in a tertiary care hospital in North India.

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Abstract

Background: Acute biliary pancreatitis (ABP) is a common gastrointestinal emergency caused predominantly by gallstones, particularly in Northern India where alcohol-induced cases are less frequent. Understanding the clinical profile and severity distribution is essential for improving diagnosis and management.

Objectives: To evaluate the demographic characteristics, clinical presentation, laboratory parameters, imaging findings, and severity of acute biliary pancreatitis in patients admitted to a tertiary care hospital in North India.

Methods: This prospective observational study was conducted at Dr. Rajendra Prasad Government Medical College, Kangra at Tanda, Himachal Pradesh, over a six-month period from July to December 2022. Fifty patients diagnosed with ABP were included using universal sampling. Data were collected on demographic variables, clinical symptoms, liver function tests (LFTs), and imaging results. Severity was classified based on the Revised Atlanta Classification.

Results: The mean age of patients was 53.04 ± 14.38 years, with a female predominance (64%). Abdominal pain was the most common symptom (100%), followed by vomiting (72%) and fever (30%). Based on severity, 54% had mild, 40% moderate, and 6% severe pancreatitis. Mean values of SGOT, SGPT, and ALP were 138.42, 120.88, and 143.74 IU/L, respectively. Ultrasonography revealed a bulky pancreas in 72% of cases, with 26% showing peri-pancreatic fluid collection.

Conclusion: ABP commonly affects middle-aged females and presents predominantly with abdominal pain and gastrointestinal symptoms. Early diagnosis using clinical, biochemical, and imaging parameters is vital for effective management and reducing complications in resource-limited tertiary care settings.

Keywords: Acute biliary pancreatitis (abp), clinical profile, tertiary care hospital, severity classification, imaging findings

Introduction

Acute pancreatitis (AP) is a sudden-onset inflammatory condition of the pancreas that can range from mild self-limiting disease to severe necrotizing pancreatitis with systemic complications. Globally, the incidence of AP is rising, with gallstones and alcohol being the two most common causes. In India, gallstones are the leading etiology, responsible for approximately 35–60% of cases of AP, particularly in northern regions where alcohol-related cases are relatively fewer.^[1, 2]

The clinical spectrum of acute biliary pancreatitis (ABP) varies significantly and can be influenced by geographic, genetic, and environmental factors. In North India, studies have reported a male predominance, with peak incidence in the fourth and fifth decades of life.^[2, 3] The revised Atlanta classification is widely used to stratify the severity of the disease into mild, moderately severe, and severe categories, which aids in guiding clinical management^[4].

Tertiary care centers, especially in resource-constrained regions, bear a high patient load and serve as referral hubs for complex cases. Despite several studies on AP, there remains a paucity of comprehensive, region-specific data describing the clinical profile and outcomes of patients with ABP in tertiary care settings in North India^[2, 5]. Such data are essential for understanding disease patterns, planning health resources, and optimizing treatment protocols.

Therefore, this study aims to evaluate the clinical profile of patients diagnosed with acute biliary pancreatitis in a tertiary care hospital in North India. This includes

assessment of demographic parameters, clinical presentations, diagnostic workup, management strategies, and outcomes.

Methods

This prospective observational study was conducted in the Department of Surgery at Dr. Rajendra Prasad Government Medical College (Dr. RPGMC), Kangra at Tanda, Himachal Pradesh, India, over a period of six months, from July 2022 to December 2022. The study included 50 patients who were admitted with a diagnosis of acute biliary pancreatitis during the study period. Universal sampling was employed, whereby all eligible and consenting patients who met the inclusion criteria were enrolled consecutively. Informed written consent was obtained from each participant prior to inclusion in the study.

Patients were included if they presented with clinical features suggestive of acute biliary pancreatitis and fulfilled the diagnostic criteria. The diagnosis was established based on the presence of at least two of the following three criteria: acute abdominal pain and tenderness typical of pancreatitis; serum amylase or lipase levels elevated to at least three times the upper limit of normal (>160 U/L); and imaging findings indicative of biliary pancreatitis, such as gallstones or biliary sludge within the gallbladder or biliary tract as detected on ultrasonography or other radiological modalities. Patients were excluded if they had a history of alcohol intake, were suffering from alcoholic or chronic pancreatitis, had a known pancreatic malignancy, or were unable to provide informed consent.

After enrollment, detailed demographic and clinical information was collected using a pretested standardized case record proforma. Data recorded included age, sex, presenting complaints, past medical history, and physical examination findings. Laboratory investigations such as complete blood count, liver function tests, serum amylase or lipase, renal function tests, lipid profile, and serum electrolytes were conducted for each patient. Radiological evaluation with abdominal ultrasonography was performed in all cases, and contrast-enhanced computed tomography (CECT) of the abdomen was done when indicated to assess pancreatic involvement and confirm biliary pathology.

Statistical analysis

The study received ethical clearance from the Institutional Ethics Committee of Dr. RPGMC, Kangra at Tanda. All collected data were entered into a Microsoft® Excel spreadsheet and analyzed using appropriate statistical methods. Quantitative data were expressed as mean and standard deviation, and categorical data were presented as frequencies and percentages. Statistical significance was determined using relevant tests, with a p-value of less than 0.05 considered statistically significant. (Details regarding the specific software and statistical tests used can be added here, e.g., SPSS version 25, chi-square test, t-test, etc.).

Results

Baseline characteristics

In present study, out of 50 participants the mean age was 53.04 years. The minimum age of participants was 19 years and maximum were 85 years. Out of total 50 participants, 18 participants were males which make 36% and 32 participants were females which make 64% of total patients studied.

Presenting symptom

In this study, among the 50 patients with acute biliary pancreatitis, abdominal pain was the most common presenting symptom, reported by all patients (100%). Vomiting was observed in 36 patients (72%), making it the second most frequent symptom. Fever was present in 15 patients (30%). These findings are consistent with the typical clinical presentation of acute biliary pancreatitis, where upper abdominal pain and gastrointestinal symptoms predominate.

Severity of pancreatitis

In this study, out of total 50 participants in the current study according to Revised Atlanta classification, 27 participants were mild which make 54%, 20 participants were moderately severe which make 40% of total and 3 participants were severe which make 6% of total.

Liver function test

In this study, the above table shows out of 50 participants, the mean SGOT was 138.42, mean SGPT was 120.88 and mean ALP was 143.74. The minimum SGOT of participants was 21.00, minimum SGPT of participants was 15.00, minimum ALP of the participants was 60 and maximum was 963.00, 466.00, 451.00 respectively.

USG findings

In this study, out of total 50 participants, on ultrasound abdomen, maximum participants (72%) were with Bulky

Pancreas followed by Pancreas Bulky, Peri-pancreatic Fluid Collection (26%) and Pancreas Normal, Peri-pancreatic fluid collection (2%). The prevalence of USG Findings in our study was Pancreas Bulky > Pancreas Bulky, Peri-pancreatic Fluid Collection > Pancreas Normal, Peri-pancreatic fluid collection.

Discussion

This study evaluated the clinical profile, laboratory findings, and imaging characteristics of patients with acute biliary pancreatitis (ABP) at a tertiary care center in North India. Our findings are consistent with regional and international data but also highlight some unique population characteristics.

The mean age of our patients was 53.04 ± 14.38 years, which is comparable to findings reported by Duwal *et al.* (2024) and Patel *et al.* (2022), who observed mean ages of 50–55 years in North Indian populations^[4, 6]. The female predominance (64%) aligns with well-established data indicating that gallstone disease a primary etiology of ABP is more prevalent in women, as also reported in studies by Vege *et al.* (2019) and Krishnan. (2017)^[7, 8].

Abdominal pain was a universal symptom in our cohort (100%), which is typical of acute pancreatitis presentations globally. Vomiting (72%) and fever (30%) were also common in our patients. These rates are similar to those reported in the studies by Zhang *et al.* (2024) and Frei *et al.* (1986), where vomiting ranged between 65–75% and fever in 25–35% of patients with ABP^[9, 10].

When graded by the Revised Atlanta Classification, 54% of patients had mild disease, 40% moderate, and 6% severe pancreatitis. This distribution is comparable to the study by Banks *et al.* (2013), where mild cases comprised approximately 60–70% of presentations^[11]. In contrast, Chowdhury *et al.* (2017) reported a slightly higher incidence of severe disease (~12%), possibly due to delayed referrals or differing local healthcare access^[7].

Our Liver Function Test (LFT) findings also align with the known pathophysiology of ABP. Elevated SGOT, SGPT, and ALP suggest biliary obstruction and hepatocellular stress, which are often seen in gallstone pancreatitis. Similar biochemical trends were reported by Tenner *et al.* (2018) and Talukdar *et al.* (2015), who highlighted LFT abnormalities as early indicators of biliary etiology^[12, 13].

Ultrasonography (USG) findings showed a bulky pancreas in 72% and peri-pancreatic fluid collection in 26%, consistent with imaging observations in studies by Sridharan *et al.* (2019) and Kapoor *et al.* (2014). The utility of USG as a first-line diagnostic tool remains high, especially in resource-limited settings^[14].

Table 1: Baseline characteristics

Baseline characteristics	Frequency (n=50)	Percentage (%)
Gender		
Male	18	36%
Female	32	64%
Age	53.04±14.38 years	

Table 2: Clinical symptoms

Clinical symptoms	Frequency (n=50)	Percentage (%)
Abdominal pain	50	100%
Vomiting	36	72%
Fever	15	64%

Table 3: Severity of pancreatitis

Severity of pancreatitis	Frequency (n=50)	Percentage (%)
Mild	27	54%
Moderate	20	40%
Severe	3	6%

Table 4: Distribution of Liver function test

	Mean \pm SD
SGOT	138.42 \pm 164.28
SGPT	120.88 \pm 98.45
ALP	143.74 \pm 65.71

Table 5: USG findings

USG findings	Frequency (n=50)	Percentage (%)
Pancreas Bulky	36	72%
Pancreas Bulky, Peri-pancreatic Fluid Collection	13	26%
Pancreas Normal, Peri-pancreatic fluid collection	1	2%

Conclusion

In this study, acute biliary pancreatitis was found to predominantly affect middle-aged females, with abdominal pain being the most consistent presenting symptom, followed by vomiting and fever. Most cases were classified as mild to moderately severe based on the Revised Atlanta Classification, and only a few presented with severe disease. Liver function test abnormalities were common, reflecting biliary involvement, and ultrasonography frequently revealed a bulky pancreas and peri-pancreatic fluid collections. These findings underscore the importance of early clinical recognition, appropriate severity assessment, and supportive investigations in guiding timely management and improving patient outcomes in acute biliary pancreatitis.

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