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## ORIGINAL ARTICLE

# CLINICAL PROFILE, ETIOLOGY AND IN-HOSPITAL OUTCOME OF ACUTE PANCREATITIS: EXPERIENCE AT A TERTIARY CARE CENTER, BANGLADESH

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**Abstract:**

***Background:*** *Acute pancreatitis (AP) is a potentially life-threatening disease with varying clinical presentations influenced by etiology, social factors, cultural habits, and patient characteristics.* ***Aim:*** *To assess the demographic profile, etiology and in-hospital outcomes of Acute pancreatitis patients.* ***Methods:*** *This prospective observational study was conducted in Department of Medicine, Sir Salimullah Medical College Mitford Hospital, Dhaka from January 2023 to December 2023 after obtaining ethical clearance from ethical review board. We enrolled 107 AP patients diagnosed according to the revised Atlanta classification (2012). Demographics, clinical presentations, risk factors, laboratory data, and imaging findings were collected using a structured questionnaire. All the data were compiled and sorted properly and analyzed by using IBM SPSS, Version 26.0. Results: The mean age was 52.09±14.94 years, with male predominance (66.4%). In this study we found common presentations are abdominal pain (100%), nausea/vomiting (91.6%), and abdominal distension (44.9%). Our study revealed, main etiologies were alcohol consumption (35.5%) and gallstones (34.6%). We observed common comorbidities included diabetes mellitus (42.1%) and hypertension (35.5%). The mean hospital stay was 6.77±1.51 days. Most patients (77.6%) achieved good recovery, while 22.4% had partial recovery. Only 3.7% required ICU care, with no mortality reported.* ***Conclusion:*** *In our study, acute pancreatitis predominantly affected middle-aged males, with alcohol and gallstones being the leading causes. Most patients had good outcomes with conservative management, suggesting effective treatment protocols was follows at our center.*

***Kew words:*** *Acute pancreatitis (AP), Clinical Profile, Etiology, In-hospital outcome*

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**Introduction:**

Acute pancreatitis (AP) is an acute inflammation of the pancreas due to auto digestion of the gland by pancreatic digestive enzymes, leading to morphologic changes and impairment of function. It is a reversible process.[1,2] Men are affected more than women. The incidence of acute pancreatitis varies from 5.4 to 79.8 per 1,00,000 population and it carries an overall mortality rate of 10 – 15%.[3,4]

AP is a potentially life-threatening disease with variable presentation. All patients presented with abdominal pain. Pain is mostly in the epigastrium, severe,

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constant and may radiate to the back. Pain starts at 12-48 hours after a large meal or after a bout of alcohol. Nausea, vomiting, jaundice, tachycardia, epigastric tenderness, hypoactive or absent bowel sounds, raised serum amylase, serum lipase, fever and abdominal distensions are the other features. Grey Turner's sign and Cullen's signs are present in about 1 to 3% patients due to hemorrhage in peripancreatic area and indicate severe episode of acute pancreatitis.[5]

Alcohol, gallstones, hypertriglyceridemia, diabetes, obesity, smoking, post ERCP, pancreatic ductal obstruction, trauma, infectious agents and drugs are the causes of acute pancreatitis in many countries. Gallstones are responsible for 50 to 60%, alcohol 8 to 32%, hypertriglyceridemia and drug induced 2–5% cases of acute pancreatitis. About 10-25% of acute pancreatitis cases appear to have no discernible cause but often turn out to be caused by autoimmunity and genetic mutations.[5-8]

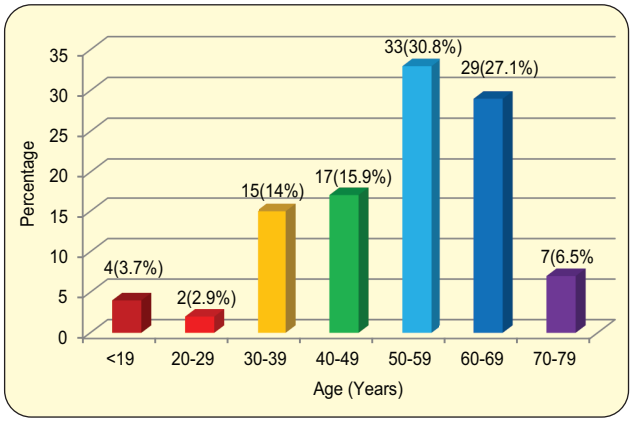
Symptoms of acute pancreatitis vary considerably according to its etiology, social, cultural habit and general physical condition of patients. Early diagnosis of acute pancreatitis has a crucial impact on treatment strategy but the early and effective detection of severe disease is very much challenging. If the cause of the occurrence can be eradicated there will be no further attack and the pancreas will come back to normal[9].In our country, limited data exists regarding the disease pattern, severity trends, and outcomes of AP. This study aims to bridge this knowledge gap by examining the demographic profile, etiology, and in-hospital outcomes of AP patients in a tertiary care setting.

**Methods:**

We conducted a prospective observational study at the Department of Medicine, Sir Salimullah Medical College Mitford Hospital, Dhaka, from January to December 2023.We enrolled 107 patients diagnosed with AP based on the revised Atlanta classification (2012). Exclusion criteria included chronic pancreatitis, relapsing pancreatitis, pancreatic malignancy, diabetic ketoacidosis, chronic kidney disease, hepatic encephalopathy, and chronic liver disease. After taking ethical clearance and informed consent, we collected data using a structured questionnaire. Information included demographic details, clinical presentations, risk factors, laboratory findings, and imaging results.All the data were compiled and sorted properly. Then data analysis was performed using IBM SPSS Statistics Version 26.0. Quantitative data were presented as mean ± SD, while qualitative data were expressed as frequencies and percentages.

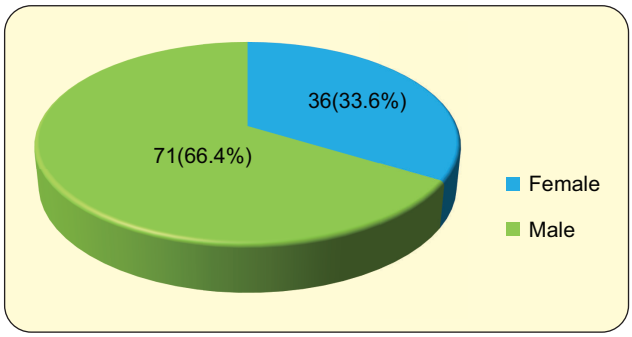
**Results:**

In this study, the mean age of participants was 52.09±14.94 years, with the majority (30.8%) in the 50-59 age group (Figure-1). About males comprised 66.4% of the study population. (Figure-2). We found Most patients (65.4%) were from urban areas and 37 (34.6%) patients came from rural area. 13 (12.1%) respondents were illiterate, 37 (34.6%) were completed primary education, 18 (16.8%) were completed secondary education, 20 (18.7%) were passed SSC, 18 (16.8%) completed their HSC and only 1 (0.9%) was graduate. They were service holder (26; 24.3%), businessmen (4; 3.7%), house wife (18; 16.8%), driver (33; 30.8%) and others (16; 15.0%) in their occupation. Maximum (54; 50.5%) study subjects belonged to lower income family (Table-I). All patients (100%) presented with abdominal pain, followed by nausea/vomiting (91.6%) and abdominal distention (44.9%) (Table-II). Our study revealed, the predominant causes were alcohol consumption (35.5%) and gallstones (34.6%), followed by dyslipidemia (11.2%) (Table-III). We observe that Common comorbidities included diabetes mellitus (42.1%), hypertension (35.5%), ischemic heart disease (8.4%), and chronic kidney disease (6.5%). (Figure-3). The mean hospital stay was 6.77±1.51 days. Complete recovery was achieved in 77.6% of patients, while 22.4% had partial recovery. Only 3.7% required ICU care, and no mortality was observed (Table-IV).




Data were expressed as frequency and percentage

**Fig.-1:** *Distribution of study subject according to age (N=107)*




Data were expressed as frequency and percentage

**Fig.-2:** *Distribution of study subject according to gender (N=107)*

**Table-I**

*Socioeconomic characteristics of study subjects (N=107)*

| Socioeconomic Characteristics | Frequency | Percentage |
|---|---|---|
| Dwelling | 37 | 34.6 |
| Rural | | |
| Urban | 70 | 65.4 |
| Educational status | | |
| Illiterate | 13 | 12.1 |
| Primary | 37 | 34.6 |
| Secondary | 18 | 16.8 |
| SSC | 20 | 18.7 |
| HSC and above | 19 | 17.8 |
| Occupational status | | |
| Unemployed | 10 | 9.4 |
| Service | 26 | 24.3 |
| Business | 4 | 3.7 |
| House wife | 18 | 16.8 |
| Driver | 33 | 30.8 |
| Others | 16 | 15 |
| Socioeconomic status | | |
| Lower income | 54 | 50.5 |
| Lower-middle | 47 | 43.9 |
| Upper-middle | 6 | 5.6 |

Data were expressed as frequency and percentage

**Table II**

*Distribution of study subject according to presenting complaints (N=107)*

| Presenting complaints | Frequency | Percentage |
|---|---|---|
| Abdominal pain | 107 | 100.0 |
| Nausea/vomiting | 98 | 91.6 |
| Abdominal distention | 48 | 44.9 |
| Others | 17 | 15.9 |

Data were expressed as frequency and percentage. Multiple response was present

**Table III**

*Distribution of study subject according to etiology (N=107)*

| Etiology | Frequency | Percentage |
|---|---|---|
| Alcohol | 38 | 35.5 |
| Gall stone | 37 | 34.6 |
| Dyslipidemia | 12 | 11.2 |
| Others | 20 | 18.7 |

Data were expressed as frequency and percentage

Data were expressed as frequency and percentage. Multiple response was present

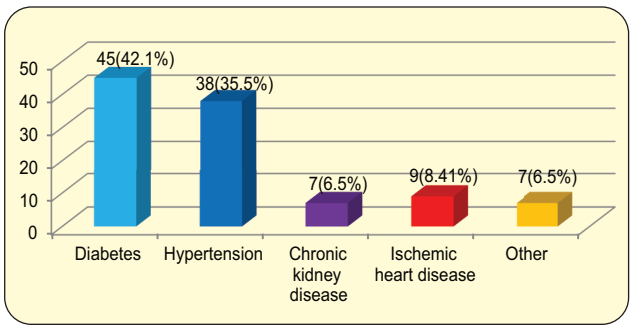



**Fig.-3:** *Distribution of study subject according to comorbidities (N=107)*

**Table IV**

*Distribution of the study subjects according to in-hospital outcome (N=107)*

| Outcome | Frequency/ Mean±SD | Percentage |
|---|---|---|
| Length of hospital stay (day) | 6.77±1.51 | |
| Complete recovery | 83 | 77.6 |
| Partial recovery with complication | 24 | 22.4 |
| Transfer to ICU | 4 | 3.7 |
| Death | 0 | 0 |

Data were expressed as frequency, percentage, Mean ± SD

**Discussion:**

Early diagnosis is important goals in the preliminary management of acute pancreatitis. Due to the risk of rapid worsening in severe acute pancreatitis, the assessment of severity becomes crucial to a clinician. Our findings demonstrate that AP predominantly affects middle-aged males in our population, consistent with previous studies by Szakács et al.[11] Baeza-Zapata et al.[12] and Carvalho et al.[13] The male predominance may be attributed to higher alcohol consumption among men, as suggested by Zhang et al.[14] Drake et al.[15] stated that rates of acute pancreatitis were similar in both sexes but chronic pancreatitis is more common in males.

Current study found that 65.4% patients hailing from urban area and 34.6% patients came from rural area. Sardana et al.[16] found similar findings. Fan et al.[17] showed hospitalization was increased annually both in urban and rural areas and the increasing rate in the rural area was much higher might be attributed to the huge floating population in the working age. Most of the floating population reside in the sub-urban area due to the rented accommodation costs and cheaper living.

Socioeconomic factors, including education and income levels, showed significant associations with AP occurrence, supporting observations by Mao et al.[18], Sardana et al.[16] and Roberts et al.[19]

In concurrent study, our respondents were presented with abdominal pain followed by, nausea/vomiting and abdominal distention. The clinical presentation pattern in our study matches previous reports by Manjunath et al.[20] and Karim et al.[21], with abdominal pain being the universal presenting symptom (100%).

In this study, alcohol (35.5%), gall stone (34.6%), dyslipidemia (11.2%) and others (18.7%) were common aetiologies. A comparable finding was observed by Vengadakrishnan and Koushik[22] and Manjunath et al.[20]. Samokhvalov et al.[23] reported that cigarette smoking and alcohol abuse are complicating factors in acute pancreatitis. Roberts et al.[19] described that acute pancreatitis was significantly found more (48%) during the Christmas and New Year weeks.

We observed in our study population, comorbidities played a significant role, with diabetes mellitus being the most prevalent (42.1%), followed by hypertension (35.5%), ischemic heart disease (8.4%), and chronic kidney disease (6.5%). This comorbidity profile aligns with findings from Vengadakrishnan and Koushik[22] and Manjunath et al.[20], though our diabetes prevalence was notably higher. Regular assessment of these comorbid conditions likely contributed to the favorable outcomes observed in our study.

In our study demonstrated generally favorable results, with a mean hospital stay of 6.77±1.51 days, which is notably shorter than previous studies such as Karim et al.[21] who reported 9-13 days for mild pancreatitis and 13.5-18 days for severe cases.

The duration of hospital stay was significantly higher in patients with severe acute pancreatitis probably due to tissue damage by inflammation.[21] Most patients (77.6%) achieved complete recovery, while 22.4% were discharged with partial recovery. Only 3.7% of cases required ICU care, and no mortality was observed. Karim et al. [21] showed that 38.71% patients developed complication and 61.29% patients were discharged with complete recovery. Another study by Manjunath et al.[20] showed 8% died and 10% were discharged against medical advice.

## Conclusion

In current study revealed, acute pancreatitis predominantly affected middle-aged males, with alcohol (35.5%) and gallstones (34.6%) as primary etiologies. Despite high comorbidity rates, outcomes were favorable with 77.6% complete recovery, short hospital stays (mean 6.77 days), and no mortality. These findings demonstrate effective management of AP in our setting. Due to demographic similarities, our findings might represent the status of whole communities of our country in general. This will help in formulating a hospital strategy which would be beneficial.

**Limitations:**

Single-center and the relatively short study duration may limit validity. Future multi-center studies with longer follow-up periods would provide more comprehensive insights.

**Data Availability:**

The datasets analysed during the current study are not publicly available due to the continuation of analyses but are available from the corresponding author on reasonable request.

**Conflict of Interest:**

The authors stated that there is no conflict of interest in this study

**Funding:**

This research received no external funding.

**Ethical consideration:**

The study was approved by the Ethical Review Committee of Sir Salimullah Medical College Mitford Hospital (SSMCMH) Dhaka, Bangladesh. Informed consent was obtained from each participant or caregivers of the patients.

**Author Contributions:**

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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