



Original Research Article

Trends in Acute Pancreatitis Management and Outcomes in Elderly Populations

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Abstract: **Background:** Acute pancreatitis is a frequent gastrointestinal crisis whose outcomes are unpredictable among the elderly. Old age is likely to be accompanied by various comorbidities, disease manifestation, and high risk of complications, and there is a lack of age-specific pathways among older people. **Objective:** To evaluate trends in etiology, management strategies, and clinical outcomes of acute pancreatitis among elderly patients, with comparison between different elderly age groups. **Methodology:** This study is observational, analytical, with a study period of August 2024 to August 2025, at SIMS Lahore. The sample size was 72 patients with acute pancreatitis aged 60 years and above. The participants were stratified into two groups; 60-74 years, and less than or equal to 75 years. Records and analysis were done on the demographic characteristics, comorbidities, etiological factors, severity of the disease, management patterns, and clinical outcomes. The Revised Atlanta Classification and BISAP score was used to determine severity. Proper statistical tests were used, and the p-value [?]0.05 was taken as important. **Results:** The most common etiology in both groups was gallstones whereas in the younger elderly, alcohol-related pancreatitis was more predominant. The comorbidity burden, disease severity, and increased length of stay, organ failure and sepsis were more common among patients ≥ 75 years. Older group had higher mortality but this was not significant. **Conclusion:** Advanced age within the elderly population is associated with increased severity and poorer outcomes in acute pancreatitis. Early risk assessment and individualized management are essential to improve clinical outcomes in older patients.

Keywords: Acute pancreatitis, elderly, disease severity, clinical outcomes, management trends

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INTRODUCTION

Acute pancreatitis is an inflammatory disease of the pancreas that is mild, self-limiting to severe life-threatening. It has gained more ground all over the world in part because of aging and its better diagnostic identification. Though most of the causes are still gallstones and alcohol, age and comorbid health conditions are two of the clinical factors that affect the course of acute pancreatitis in patients [1-3].

Elderly patients are one of the most vulnerable, and they usually experience atypical symptoms, late hospital admission and low physiological reserve. The variety of comorbidities and polypharmacy adds more complexity to the disease management process and can restrict the range of therapeutic opportunities. Past research revealed that the elderly patients with acute pancreatitis had greater rates of complications and mortality rates yet a lot of them have treated the elderly as one homogeneous group [4-6].

The evidence of differences among subgroups of elderly ages is scant and especially in younger-old versus older-old patients. Understanding how disease severity, management strategies, and outcomes vary with advancing age is essential for optimizing care and improving prognosis. This study was therefore designed to analyze trends in acute pancreatitis among elderly patients, with specific focus on age-related differences in etiology, management, and clinical outcomes.

METHODOLOGY

The present study was carried out based on an observational analytical study design within 1 year, i.e., August 2024 to August 2025, at SIMS Lahore. The aim was to compare management and clinical outcomes pattern of acute pancreatitis in elderly patients and to compare the difference between age groups in the elderly population. Before the study was initiated, ethical approval was enabled by the concerned institutional review board and the study was conducted in line with both the institutional and international ethical standards. Confidentiality of patients was ensured in the entire study process and the data were anonymized prior to the analysis. A sample of 72 elderly patients with acute pancreatitis was used based on non-probability consecutive sampling method. Patients aged 60 years and over

with a clinical presentation of acute pancreatitis, who had a biological presentation according to the biochemical markers and radiology were eligible to include. Chronic pancreatitis patients, pancreatic malignancy patients, and patients with incomplete clinical records were eliminated. Participants were stratified to be divided into two age groups to analyze them comparatively: 60-74 years and 75 years and above.

At the time of admission, baseline demographic information such as age, sex and body mass index were taken. The comorbidities considered in clinical history included hypertension, diabetes mellitus, ischemic heart disease, and chronic kidney disease. The comorbidity burden was measured with the aid of the Charlson Comorbidity Index. Acute pancreatitis etiological factors were recorded in accordance with clinical examination, laboratory and imaging report and were categorized as gallstone, alcohol, hypertriglyceridemia, or idiopathic.

The Revised Atlanta Classification was used to measure severity of diseases and then the cases were classified as mild, moderately severe and severe acute pancreatitis. Also, the BISAP score was estimated at admission to determine the early severity and risk stratification. In cases where radiological utilization was done, ultrasonography radiology and contrast-enhanced computed tomography were examined to determine local complications including pancreatic necrosis or peripancreatic fluid collections. The fluid resuscitation, nutritional support, antibiotics, intensive care unit admission, endoscopic retrograde cholangiopancreatography, and surgical interventions were management strategies that were described in detail.

The clinical outcomes were measured based on the length of hospital stay, occurrence of organ failure, local or systemic complications, sepsis, 30-day readmission, and in-hospital mortality. Appropriate statistical software was used in the analysis of data. Continuous variables were reported as mean with standard deviation or median with interquartile range whereas categorical variables were reported in terms of frequencies and percentages. The independent t-test or Mann-Whitney U test was used to make comparisons between groups of age when the variable was continuous and Chi-square or Fisher corrected

was used when the variable was categorical. The p-value of 0.05 was taken as significant.

RESULTS

It involved 72 elderly patients with acute pancreatitis (aged 60 to 74 years and aged 75 or older). The number of comorbidities and the Charlson Comorbidity Index of the older age group was more significant, especially ischemic heart disease, which was a more vulnerable baseline health. There were no significant differences in terms of sex distribution and body mass index as per groups.

Table 1. Demographic Characteristics and Comorbidities of Elderly Patients with Acute Pancreatitis (N = 72)

Variable	Total (N=72)	60–74 yrs (n=38)	≥75 yrs (n=34)	p-value
Age (years), mean ± SD	72.6 ± 7.8	68.4 ± 3.9	78.1 ± 3.2	<0.001
Male sex, n (%)	41 (56.9)	24 (63.2)	17 (50.0)	0.27
BMI (kg/m ²), mean ± SD	26.1 ± 4.3	26.8 ± 4.1	25.3 ± 4.5	0.18
Hypertension, n (%)	49 (68.1)	23 (60.5)	26 (76.5)	0.15
Diabetes mellitus, n (%)	36 (50.0)	18 (47.4)	18 (52.9)	0.64
Ischemic heart disease, n (%)	21 (29.2)	7 (18.4)	14 (41.2)	0.03
Chronic kidney disease, n (%)	15 (20.8)	5 (13.2)	10 (29.4)	0.09
Charlson Comorbidity Index, median (IQR)	4 (3–6)	3 (2–5)	5 (4–7)	0.01

The most prevalent etiology of acute pancreatitis in both groups were gallstones, whereas alcohol related pancreatitis was much higher among patients aged 60-74 years. It was found that severe pancreatitis and higher BISAP scores were relatively more frequent in patients aged 75 years and above as diseases get more severe with age.

Table 2. Etiology and Severity of Acute Pancreatitis in Elderly Patients (N = 72)

Variable	Total	60–74 yrs	≥75 yrs	p-value
Etiology, n (%)				
Gallstone-related	39 (54.2)	18 (47.4)	21 (61.8)	0.22
Alcohol-related	14 (19.4)	11 (28.9)	3 (8.8)	0.03
Hypertriglyceridemia	7 (9.7)	5 (13.2)	2 (5.9)	0.32
Idiopathic	12 (16.7)	4 (10.5)	8 (23.5)	0.14
Revised Atlanta Classification, n (%)				
Mild	29 (40.3)	20 (52.6)	9 (26.5)	0.02
Moderately severe	25 (34.7)	12 (31.6)	13 (38.2)	0.56
Severe	18 (25.0)	6 (15.8)	12 (35.3)	0.04
BISAP score ≥3, n (%)	22 (30.6)	8 (21.1)	14 (41.2)	0.05

Older patients (≥75 years old) were admitted to the ICU more often and subjected to less decisive treatment procedures like cholecystectomy in the index admission. Even though transfusion therapy and enteral rehydration were widespread in both groups, more radical treatment methods were applied in elderly patients.

Table 3. Management Strategies in Elderly Patients with Acute Pancreatitis (N = 72)

Variable	Total	60–74 yrs	≥75 yrs	p-value
ICU admission, n (%)	26 (36.1)	10 (26.3)	16 (47.1)	0.04
Early IV fluids (<24 h), n (%)	58 (80.6)	33 (86.8)	25 (73.5)	0.16
Antibiotic use, n (%)	31 (43.1)	13 (34.2)	18 (52.9)	0.11
Enteral feeding initiated, n (%)	49 (68.1)	29 (76.3)	20 (58.8)	0.10
ERCP performed, n (%)	17 (23.6)	6 (15.8)	11 (32.4)	0.09
Cholecystectomy performed, n (%)	21 (29.2)	15 (39.5)	6 (17.6)	0.04

Older patients 75 years and older had worse clinical outcomes with much extended hospital stay and rate of organ failure and sepsis. Even though the mortality in the older age group was more, the difference was not significant.

Table 4. Clinical Outcomes of Elderly Patients with Acute Pancreatitis (N = 72)

Outcome	Total	60–74 yrs	≥75 yrs	p-value
Length of hospital stay (days), median (IQR)	7 (5–11)	6 (4–9)	9 (6–14)	0.01
Organ failure, n (%)	24 (33.3)	9 (23.7)	15 (44.1)	0.05
Local complications, n (%)	19 (26.4)	7 (18.4)	12 (35.3)	0.10

Sepsis, n (%)	14 (19.4)	4 (10.5)	10 (29.4)	0.04
Readmission within 30 days, n (%)	11 (15.3)	4 (10.5)	7 (20.6)	0.23
In-hospital mortality, n (%)	8 (11.1)	2 (5.3)	6 (17.6)	0.08

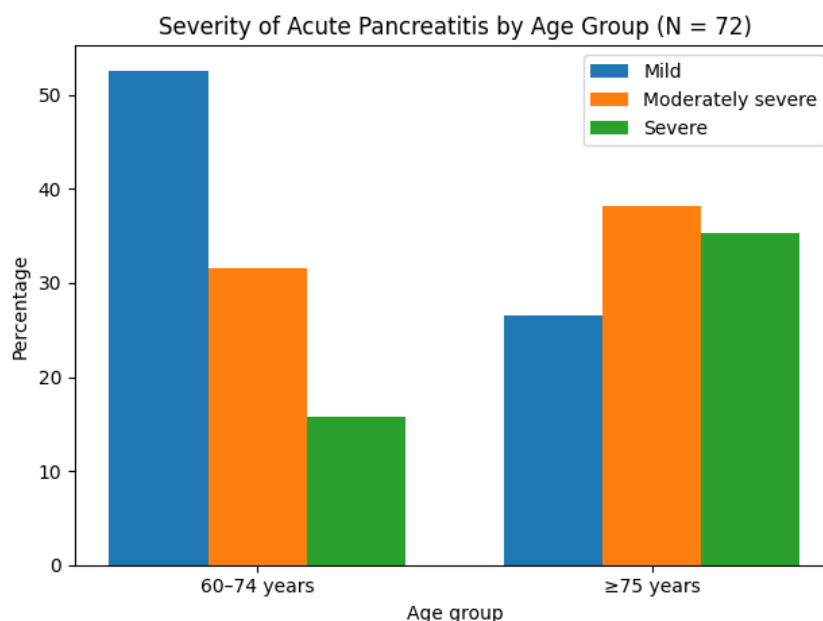


Figure 1: Bar graph showing the distribution of acute pancreatitis severity according to Revised Atlanta Classification among elderly patients aged 60–74 years and ≥75 years.

DISCUSSION

The research analyzed the changes in the management and results of acute pancreatitis in elderly patients and proved obvious age-related variations in the population. The patient group aged 75 years and older was found to have a very high burden of comorbidities, especially that of ischemic heart disease, and the score of the Charlson Comorbidity Index was also higher. These observations are in line with the generalized knowledge that multimorbidity often follows advancing age and might lower physiological reserve and predispose to acute inflammatory diseases like pancreatitis [7-10].

The age-related biliary pathology and decreased gallbladder motility in the elderly population manifested as the most frequent etiology of acute pancreatitis in both age groups, namely, gallstone disease. On the contrary, higher prevalence of alcohol-related pancreatitis was observed in patients aged 60-74 years which was probably due to the differences in lifetime alcohol exposure and lifestyle habits between young-old population and old-old population. These etiological trends support the need and significance of age-specific preventive measures such as the timely infection of biliary assessment and management in older patients [11-15].

The severity of the disease had a significant correlation with age. Patients aged 75 years and older

were significantly older and had a better proportion of severe acute pancreatitis and high BISAP scores. This finding corroborates the current literature that older patients tend to have the severe disease presentation because of late manifestation, unusual symptoms, weakened immune response and co-morbid conditions. The low percentage of mild disease in the later age group also shows aggressive clinical progression of acute pancreatitis in old age [16-18].

There was also a difference in management strategies with age. The patients who needed more intensive care unit admission were older and had less definitive procedures like cholecystectomy during the initial admission. This could be an indication of conservative clinical practice when there is frailty, cardiovascular risk, and poor tolerability to surgery. Even though early fluid resuscitation and enteral nutrition were widely used in both groups, the propensity towards conservative treatment in the older age group indicates that age-related risk stratification is a key factor in treatment planning [19, 20].

There was a significant decrease in clinical outcomes in patients aged 75 years and above. This population had a longer hospital stay, more organ failure and sepsis, which showed higher morbidity. Although, in-hospital mortality was more among the older group of age, the statistical significance was not attained, which may be because of small sample size. However, the identified trend is consistent with the literature

that indicated advanced age as a factor that is significant to predict adverse outcomes of acute pancreatitis.

CONCLUSION

Acute pancreatitis in elderly patients is associated with significant age-related differences in etiology, severity, management, and outcomes. Patients aged 75 years and above demonstrate higher disease severity, greater comorbidity burden, increased need for intensive care, and poorer clinical outcomes. These findings highlight the need for early risk stratification, individualized management strategies, and focused preventive measures in the older elderly population to improve outcomes and reduce complications.

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