

Spectrum of Acute Pancreatitis in the Kashmiri Population: Experience of 250 Cases In Tertiary Care Hospital

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ABSTRACT

Background: Acute pancreatitis (AP) is an inflammatory condition with multiple etiologies, ranging from gallstones and alcohol consumption to metabolic and idiopathic causes. In Kashmir, a region known for its distinct dietary patterns and high prevalence of gallstone disease and Ascariasis, AP presents unique epidemiological characteristics .This study aims to analyze the clinical spectrum of AP in the Kashmiri population through a prospective approach.

Methods: This hospital-based prospective study was conducted in department of Medical Gastroenterology, GMC Srinagar from December 2022 to December 2024 and included 250 patients diagnosed with Acute Pancreatitis. Data on Demographics, etiology, severity, interventions in severe pancreatitis and overall outcomes were analyzed.

Results: Demographic analysis showed that 60% (150/250) of the patients were male and 40% (100/250) were female. The mean age of presentation was 42 years .Gallstone-induced AP was the most common cause (42.8%) followed by Idiopathic (19.2%), worm induced(10.4%) and post-ERCP pancreatitis was seen in 7.2% of patients. cases. Based on severity Pancreatitis was classified into mild (55%), Moderate (30%) and Severe acute pancreatitis (SAP) (15%). Patients with SAP developed significant complications, including Pancreatic necrosis (60%), Systemic inflammatory response syndrome (SIRS): (45%), Multi-organ failure (MOF)(25%), Acute respiratory distress syndrome (ARDS)(15%) with ICU admission required in 50% and Mortality of 20% (8/38). A total of 22 patients of SAP underwent Cystogastrostomy. Endoscopic Cystogastrostomy was performed in 68% (15 patients) while Surgical Cystogastrostomy in 32%. The overall success rate of endoscopic Cystogastrostomy (CG) was 90%. Complete resolution of cysts occurred in most patients within 8 weeks. However, 10% required repeat drainage due to incomplete resolution. Complications observed Post CG included Infection (15%), Bleeding (5%), Stent migration (in endoscopic cases) in 10% Recurrence of cysts (5%).

Conclusion: Gallstones remain the predominant cause of AP in this region. Worm induced pancreatitis remains a unique cause in Kashmir due to endemicity. Alcohol consumption is an emerging concern. SAP carries a risk for developing significant morbidity and mortality. Early identification and management of risk factors are essential to reduce morbidity and mortality.

Keywords: Pancreatitis, WOPN, Cystogastrostomy, Kashmir, Gallstones, Ascariasis.

1. INTRODUCTION

Acute pancreatitis (AP) is an inflammatory disorder of the pancreas, commonly triggered by gallstones and alcohol (1). It presents with abdominal pain and elevated pancreatic enzymes. In the Kashmiri population, dietary patterns, genetic predisposition, and metabolic disorders may influence the etiology (2). This study aims to analyze the primary causes of AP in this region and compare trends with global data. The disease varies in severity from mild, self-limiting inflammation to severe, necrotizing pancreatitis with high morbidity and mortality (3,4). The etiology of AP is multifactorial, with gallstones and alcohol being the predominant causes globally. In Kashmir, a region known for its distinct dietary patterns and high prevalence of gallstone disease and Ascariasis AP presents unique epidemiological characteristics. This study aims to study demographics, etiology, severity, interventions in severe pancreatitis and overall outcomes were analyzed.



Aims and Objectives

Aim: To evaluate the Clinical spectrum of acute pancreatitis in the Kashmiri population.

Objectives:

1. To evaluate demographics of acute pancreatitis
2. To evaluate etiology of acute pancreatitis
3. To assess severity and clinical profile of SAP
4. To evaluate endoscopic management of WOPN

To compare Endoscopic and surgical Cystogastrostomy

Methodology

Study Design: This is a hospital-based prospective observational study.

Study Population: The study includes 250 patients diagnosed with acute pancreatitis in Department of Gastroenterology, GMC Srinagar Kashmir from Dec 2022 to Dec 2024

Inclusion Criteria:

- Patients with clinical and biochemical confirmation of AP (elevated serum amylase/lipase >3x normal).
- Patients with radiological evidence of pancreatitis on ultrasound or CT scan.
- Both male and female patients above 18 years.

Exclusion Criteria:

- Patients with chronic pancreatitis or pancreatic malignancy.
- Patients with recurrent pancreatitis without an identified cause.

Data Collection:

Data was collected from Gastroenterology ward, referrals to our department, General surgery ward and included clinical history, laboratory tests, imaging reports, and patient outcomes. Severity was classified using the Revised Atlanta Classification (mild, moderate, and severe).

2. RESULTS

Demographic and Clinical Characteristics

Among the 250 adults diagnosed with pancreatitis, the mean age was 42years (range: 19 to 85 years) with a male-to-female ratio of 1.5:1. In our study mean delay of 3 days was noticed before presenting to our hospital (Table 1)

Table 1: Demographic and Clinical Characteristics

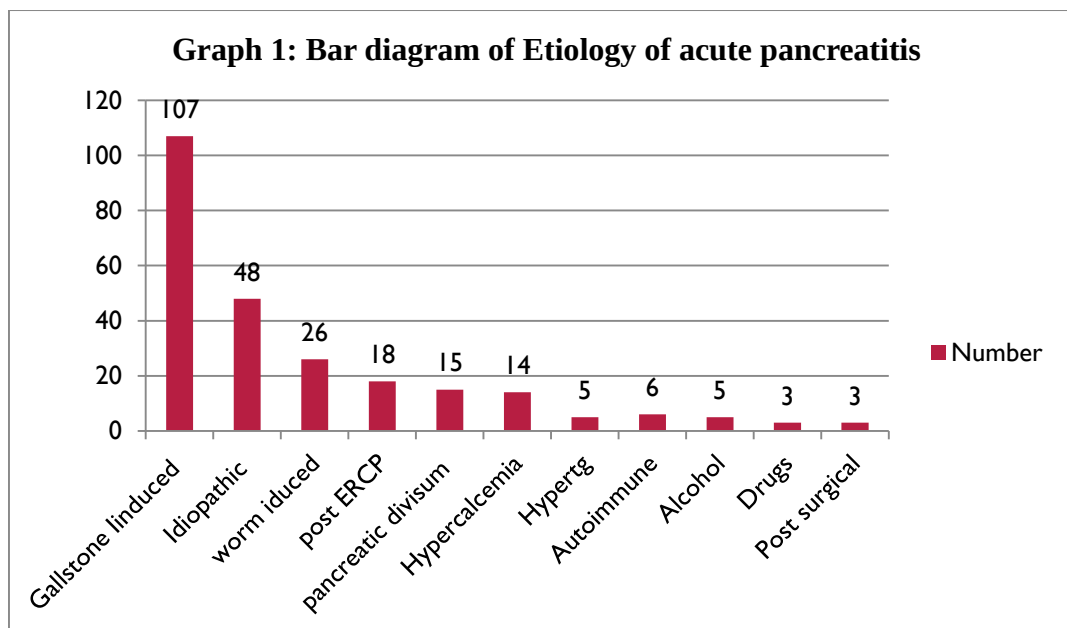
Characteristics	Frequency	Percentage
Total patients	250	100
Mean age (years)	42	-
Males	150	60
Females	100	40
Duration of symptoms before admission(days-mean)	03	

Etiology

Out of 250 patients included in the study, gallstone-induced AP was the most common etiology (42.8%), followed by idiopathic (19.2%) , worm induced AP (10.4%). Hypercalcemia accounted for 5.6% of cases; post-ERCP pancreatitis was identified in 8.8 % of patients. (Table 2) and Graph 1

Table 2: Etiological Distribution of Acute Pancreatitis

Etiology	Frequency(N)	Percentage (%)
Gallstone induced	107	42.8
Idiopathic	48	19.2
Worm induced	26	10.4
Post ERCP	18	7.2
Pancreatic Divisum	15	6
Hypercalcemia	14	5.6
Hypertriglyceridemia	5	2
Auto-immune	6	2.4
Alcohol	5	2
Drugs	3	1.2
Post-surgical	3	1.2
Total	250	100



Severity of pancreatitis

In our study, 137 patients had mild pancreatitis which was managed by supportive measures while 38 patients developed severe acute pancreatitis (SAP) with high complication rates and mortality. (Table 3)

Table 3: Severity Classification of Acute Pancreatitis

Severity	Frequency (N)	Percentage (%)
Mild	137	55
Moderate	75	30

Severe	38	15
Total	250	100

Severe Acute Pancreatitis Profile

Severe acute pancreatitis (SAP) is characterized by persistent organ failure, pancreatic necrosis, and a high risk of mortality. In this study, 15% of patients (n=38) were classified as having severe pancreatitis based on the Revised Atlanta Classification.

Etiology of Severe Pancreatitis

The major causes of SAP (n=38) in our study are summarized below (Table 3.1):

Table3.1: Etiology of Severe Acute Pancreatitis (SAP)

Etiology	Frequency	Percentage (%)
Gallstone-induced	16	40
Idiopathic	8	35
Worm induced	5	15
Post ERCP	5	5
Hypercalcemia	4	5

Complications and Outcomes

Patients with SAP developed significant complications, including (Table 3.2):

Table 3.2: Complications and outcome of SAP (N=38)

S.no	Characteristic	Frequency	Percentage (%)
1	Pancreatic necrosis	23	60%
2	Systemic inflammatory response syndrome (SIRS)	18	45%
3	Multi-organ failure (MOF)	10	25%
4	Acute respiratory distress syndrome (ARDS)	5	15%
5	ICU admission required	19	50%
6	Mortality	8	20%

Cystogastrostomy Profile and Results

Cystogastrostomy is a minimally invasive procedure used for the management of pancreatic pseudo-cysts and walled-off pancreatic necrosis (WOPN). In this study, Cystogastrostomy was performed in patients with persistent symptomatic pseudo-cysts or infected WOPN (Table 4.1)

Table 4.1: Cystogastrostomy profile

S.NO	Characteristic	Frequency	Percentage (%)
1	Total patients (n)	22	100
2	Endoscopic	15	68
3	Surgical	7	32
4	Mean age (years)	34	
5	Male : Female ratio	15/7(2:1)	
6	Overall success	20	90

A total of 22 patients underwent Cystogastrostomy. The mean age was 34years, with a male predominance (70%). Endoscopic Cystogastrostomy: 68% (15 patients) and Surgical Cystogastrostomy: 32% (7 patients). Endoscopic procedures were preferred due to lower morbidity and shorter recovery times.

The overall success rate of Cystogastrostomy was 90%. Complete resolution of cysts occurred in most patients within 8 weeks. However, 10% required repeat drainage due to incomplete resolution. (Table 4.2)

Table 4.2: Cystogastrostomy Outcomes

Outcome	Percentage (%)
Complete resolution	90
Need for repeat drainage	10
Infection	15
Bleeding	5
Stent migration	10

Surgical vs. Endoscopic Cystogastrostomy

- Endoscopic CG had a shorter hospital stay compared to Surgical CG(p=0.03)
- Success rate were slightly higher for Endoscopic CG (93) than Surgical CG (86) but the difference was not statistically significant.
- ICU admission and mortality rates were higher in the surgical group but the difference was not statistically significant(Table 4.3)

Table 4.3: comparison of surgical and endoscopic CG outcomes

Parameter	Endoscopic CG	Surgical CG	p-value
Success rate	14/15 (93%)	6/7 (86%)	0.42
Complete cyst resolution (on 8 weeks)	13/15 (87%)	6/7 (86%)	0.78
Need for repeat drainage	1/15 (7%)	1/7 (14%)	0.55
Mean hospital stay(days)	6.5±2.1	10.2±3.5	0.03
ICU admission	6/15 (40%)	4/7 (57%)	0.28
Mortality	2/15 (13%)	2/7 (29%)	0.31

Post-Cystogastrostomy complications

- Stent migration occurred in –of endoscopic cases which was statistically significant(p=0.02)
- Infection, cyst recurrence and need for drainage were comparable between two groups(p>0.05)(Table 4.4)

Table : 4.4 Distribution of Post-Cystogastrostomy complications

Complication	Endoscopic CG	Surgical CG	p-value
Infection	2/15 (13%)	1/7 (17%)	0.79
Bleeding	1/15(7%)	0	0.48
Stent migration	3/15(20%)		0.02
Cyst recurrence	1/15 (7%)	1/7 (14%)	0.55

3. DISCUSSION

The findings of this study indicate that gallstone-induced pancreatitis remains the predominant etiology in Kashmir, aligning with trends observed in other northern Indian states. However, worm-induced pancreatitis is an important cause particularly in Kashmir because of endemicity for *Ascaris lumbricoides*, suggesting a distinct cause that is unique to this part of world . Hypertriglyceridemia-related AP, though less common, is an emerging concern, especially in younger individuals with metabolic syndrome. When compared to Western populations, where alcohol is the leading cause, the etiology of AP in Kashmir remains primarily gallstone-related. However, the rising incidence of idiopathic pancreatitis warrants further genetic and autoimmune screening to identify potential underlying causes. The severity distribution in our study showed that mild AP was most common (55%), while severe necrotizing pancreatitis was seen in 15% of cases, which is comparable to global reports. This aligns with previous literature, where gallstone-induced AP is the leading cause in adults (1,2). The mean age of presentation was 42 years, similar to other regional studies (3). AP severity was classified into mild (55%), moderate (30%), and severe (15%), consistent with the Revised Atlanta Classification (4). Patients with severe acute pancreatitis (SAP) exhibited high rates of complications, including pancreatic necrosis (60%), SIRS (45%), multi-organ failure (MOF) (25%), and ARDS (15%), with ICU admission required in 50%. These findings align with reports showing increased ICU admissions and mortality in SAP patients (5,6). The 20% mortality rate (8 out of 38 patients with SAP) is comparable to prev Management of Walled-Off Pancreatic Necrosis (WOPN) A total of 22 SAP patients underwent Cystogastrostomy (CG) for walled-off necrosis, with an overall success rate of 90%. Endoscopic Cystogastrostomy (68%) was more commonly performed than surgical Cystogastrostomy (32%), reflecting a global shift towards minimally invasive management (9,10). Studies have shown endoscopic CG to be associated with lower morbidity and shorter hospital stays compared to surgical interventions (11,12). Complete resolution of cysts was achieved within 8 weeks in most cases, with 10% requiring repeat drainage, aligning with studies showing that 5-15% of patients need re-intervention (13,14). Post-procedure complications included infection (15%), bleeding (5%), stent migration (10%), and cyst recurrence (5%), similar to reported literature (15,16). While endoscopic Cystogastrostomy is preferred, complications such as stent migration and infection necessitate careful follow-up (17,18). Further studies with larger sample sizes and long-term follow-up are required to optimize management strategies for SAP.

4. CONCLUSION

This study provides valuable insights into the Clinical spectrum of acute pancreatitis in the Kashmiri population. Gallstones remain the leading cause, but worm induced being unique cause in Kashmir warranting routine deworming and metabolic syndrome associated derangements being an emerging cause. Early identification and intervention for at-risk individuals can help reduce the disease burden. Future studies should focus on genetic and autoimmune factors contributing to idiopathic pancreatitis.

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