e-ISSN: 0975-5160, p-ISSN: 2820-2651

Available online on www.ijtpr.com

International Journal of Toxicological and Pharmacological Research 2023; 13(9); 249-253

Original Research Article

A Retrospective Observational Assessment Study of Clinical Profile of Patients with Acute Pancreatitis

Kundan Kumar[1], Rahul Singh[2], Manish[3]

[1]Senior Resident, Department of General Surgery, Narayan Medical College and Hospital, Sasaram, Bihar, India

[2]Senior Resident, Department of General Surgery, Narayan Medical College and Hospital, Sasaram, Bihar, India

[3]Professor, Department of General Surgery, Narayan Medical College and Hospital, Sasaram, Bihar, India

Received: 22-05-2023 / Revised 12-06-2023 / Accepted 26-07-2023

Corresponding author: Dr. Kundan Kumar

Conflict of interest: Nil

Abstract:

Aim: The aim of the present study was to assess the clinical profile of acute pancreatitis, the etiology and complications of acute pancreatitis received treatment in the Department of Surgery,

Material & Methods: It was a retrospective observational type study with study sample size of 100 cases. The study was conducted with objective of age, sex distribution, etiology, clinical presentation& complications of Acute Pancreatitis. All patients presenting to Department of Surgery, within the duration of 10 months meeting inclusion criteria for acute pancreatitis.

Results: Regarding gender distribution, we observed that out of total 100 subjects, 85 were male and remaining 15 were females (85% vs. 15%). We noted a male predominance in our study. Regarding age incidence, we observed that median age group in our study was 37.5 years among all 100 subjects. Underlying cause of the clinical condition was noted as alcoholic in nature by majority (80%) of the study subjects. In 15 patients (15%) reason for the pancreatitis could not be ascertained despite extensive evaluation. Abdominal pain (100%) and vomiting (88%) were the most consistent symptoms in our study. Among the 100 patients studied 85 had mild pancreatitis, 4 had severe pancreatitis and 11 patients had acute on chronic pancreatitis. One patient of acute necrotizing pancreatitis required intensive Care Unit (ICU) admission and developed organ failure indicating adverse outcome. Common complications of the clinical condition were noted as pleural effusion (n=21, 21%), followed by ascites (n=16, 16%) and acute fluid collection (n=7, 7%). Morality was seen among two patients (3%).

Conclusion: Acute pancreatitis is one of the leading causes of increase in morbidity and mortality to society. Alcohol and gallstones were the most common etiological factors of acute pancreatitis. Clinical assessment along with radiological findings correlated well with the morbidity and mortality. Our study identifies alcoholism as one of the most important etiological factors.

Keywords: Acute Pancreatitis, Clinical Profile, Etiology, Outcome.

Introduction

The name “pancreas” is derived from Greek word “pan” (all) and “Kreas” (flesh). It was originally thought to act as cushion for stomach. [1] Acute Pancreatitis is an acute inflammatory process of the pancreas with variable involvement of regional tissues and remote organ system characterized by parenchymal edema and necrosis caused by auto-digestion by its own glandular enzymes leading to multi-organ failure or death. [2,3] The disease may occur at any age, with a peak in young men and [4] older women. The prevalence of pancreatitis in India [5] is 2.6-3.2 cases per 100,000 population.

The average mortality rate in severe acute pancreatitis approached 2 to 10%. The two major causes of acute pancreatitis are biliary calculi, which occur in 50–70% of patients, and alcohol abuse, which accounts for 25% of cases. Abdominal pain felt mainly in epigastrium but may be localised to either upper quadrant or felt diffusely throughout the abdomen. Nausea, repeated vomiting and retching are usually marked accompaniments. Acute and chronic pancreatitis both have a high mortality rate in these patients due to their fulminant courses, which if not treated

promptly, can result in complications. Long-term pancreatitis can also lead to pancreatic cancer. [6]

The diagnosis of acute pancreatitis requires two of the following three features: abdominal pain consistent with acute pancreatitis (acute onset of persistent, severe, epigastric pain often radiating to the back), serum lipase activity (or amylase activity) at least three times greater than the upper limit of the normal and characteristic finding of acute pancreatitis on Contrast Enhanced Computed Tomography (CECT) and less commonly Magnetic Resonance Imaging (MRI) or Transabdominal Ultrasonogram. The American College of Gastroenterology (ACG) practice guidelines provide acceptable terminology for the classification of acute pancreatitis and its complications. [7] Acute pancreatitis is classified into three severity levels: mild acute pancreatitis (absence of organ failure and systemic or local complications), moderately severe acute pancreatitis (no organ failure or transient organ failure lasting <48 h with or without local complications), and severe acute pancreatitis (persistent organ failure more than 48 h that may involve one or multiple organs). [8,9] Acute pancreatitis is a common disease with wide clinical variation.

As there is no detailed study about the clinical profile of acute pancreatitis from the north eastern region of India, this study was conducted to observe the clinical presentations of acute pancreatitis treated in the Department of General Surgery, Narayan Medical College and Hospital, Sasaram, Bihar, India

Material & Methods

It was a retrospective observational type study with study sample size of 100 cases. The study was conducted with objective of Age, Sex distribution, Etiology, clinical presentation& complications of Acute Pancreatitis. All patients presenting to Department of General Surgery, Narayan Medical College and Hospital, Sasaram, Bihar, India, within the duration of 10 months meeting inclusion criteria for acute pancreatitis defined below were included in the case series.

Inclusion Criteria:

(Presence of at least two of the following)

1. Acute abdominal pain and tenderness suggestive of pancreatitis.
2. Serum amylase/lipase >3 times the normal.
3. Imaging findings (USG and/or CT) suggestive of Acute Pancreatitis.
4. Age between 10-60 yrs.

Exclusion Criteria:

1. Cases with incomplete documentation
2. Chronic Pancreatitis and pancreatic malignancy.
3. Age <10 yrs and >60 yrs

The diagnosis of acute pancreatitis was based on presence of appropriate clinical evidence associated with an elevation of serum amylase and/or urinary amylase. Patients were classified into mild, moderate, and severe acute pancreatitis based on Ranson's score, Glasgow scoring system.[10] Age, sex, address, symptom and sign were noted carefully. Relevant past history, family history and personal history especially alcohol consumption were recorded. A detailed history was obtained and thorough physical examination was carried out for every subject included in the study, as per the predesigned proformas. Relevant past history, family history and personal history, especially history of alcohol consumption were recorded. Associated medical disease, like hypertension, diabetes mellitus, chronic renal failure, bronchial asthma, chronic obstructive pulmonary disease (COPD) and ischemic heart disease were noted.

Results of haematological, biochemical and imaging tests were noted. The most likely etiological factor was identified by analyzing history, physical examination and relevant investigations. Investigations like routine blood test, DC, WBC count, blood sugar estimation, routine urine examination were done. Specific investigation like serum lipase estimation was also done. Ultrasonography of whole abdomen and pelvis were done in all patients to evaluate for the presence of gall stones and common bile duct pathology. CT scan was done after 72 hours of admission. MRCP was done in selected and confusing cases. All patients were initially subjected to conservative measures.

Statistical Analysis: Collected data were entered in the Microsoft Excel spreadsheet, coded appropriately, and later cleaned for any possible errors. The statistical analysis was carried out using IBM SPSS Statistics for Windows, Version 22.0 (IBM Corp. Armonk, NY, USA). All data collected and analyzed by appropriate statistical methods and tests.

Results

Table 1: Comparative analysis of different variables related to acute pancreatitis

Variables	Frequency	Percentage
Gender distribution		
Male	85	85
Female	15	15

Age distribution (Median)	37.5 years	
Etiology		
Idiopathic	15	15
Biliary	5	5
Alcoholic	80	80

Regarding gender distribution, we observed that out of total 100 subjects, 85 were male and remaining 15 were females (85% vs. 15%). We noted a male predominance in our study. Regarding age incidence, we observed that median age group in our study was 37.5 years among all 100 subjects.

Underlying cause of the clinical condition was noted as alcoholic in nature by majority (80%) of the study subjects. In 15 patients (15%) reason for the pancreatitis could not be ascertained despite extensive evaluation.

Table 2: Patient distribution based on symptoms and signs

Symptom	N= no. of patients	Percent-age (%)	Signs	Frequency	Percentage (%)
Abdominal pain	100	100	Epigastric tenderness	92	92
Vomiting	88	88	Guarding	52	52
Abdominal distention	10	10	Jaundice	15	15
Fever	3	3	Shock	2	2
			Paralytic ileus	3	3

Abdominal pain (100%) and vomiting (88%) were the most consistent symptoms in our study.

Table 3: Patient distribution according to clinical grades

Clinical Grade	N=no of patients	Hospital stay in days (average)	ICU admission	Organ failure	Mortality
Acute oedematous(mild)	85	11±3	0	0	0
Acute Necrotizing (severe)	4	16±2	1	1	0
Acute on chronic pancreatitis	11	8±2	0	0	0
Total	100				

Among the 100 patients studied 85 had mild pancreatitis, 4 had severe pancreatitis and 11 patients had acute on chronic pancreatitis.

Table 5: Patient distribution according to CT Grade

CT grade	N=no of patients	Hospital stay in days (Avg)	ICU admission	Organ failure	Mortality
Normal	12	7	0	0	0
Grade 1-2	72	10±2	0	0	0
Grade 3-5	16	15±2	1	1	0
Total	100				

One patient of acute necrotizing pancreatitis required intensive Care Unit (ICU) admission and developed organ failure indicating adverse outcome.

Table 6: Comparative analysis of complications and mortality related to acute pancreatitis as noted in this study

Variables	Frequency	Percentage
Complications		
Pleural effusion	21	21
Ascitis	16	16
Acute fluid collection	7	7
Acute renal failure	5	5
Pancreatic abscess	2	2
Pseudo cyst	2	2
Acute pancreatic necrosis	2	2
Other (venous thrombosis)	2	2
Mortality	3	3

Common complications of the clinical condition were noted as pleural effusion (n=21, 21%), followed by ascites (n=16, 16%) and acute fluid collection (n=7, 7%). Morality was seen among two patients (3%).

Discussion

Acute Pancreatitis is an acute inflammatory process of the pancreas with variable involvement of regional tissues and remote organ system. [11] The average mortality rate in severe acute pancreatitis approached 2 to 10%. The diagnosis of acute pancreatitis requires two of the following three features: abdominal pain consistent with acute pancreatitis (acute onset of persistent, severe, epigastric pain often radiating to the back), serum lipase activity (or amylase activity) at least three times greater than the upper limit of the normal and characteristic finding of acute pancreatitis on Contrast Enhanced Computed Tomography (CECT) and less commonly Magnetic Resonance Imaging (MRI) or Transabdominal Ultrasonogram. The American College of Gastroenterology (ACG) practice guidelines provide acceptable terminology for the classification of acute pancreatitis and its complications. [12] Acute pancreatitis is broadly classified (The Atlanta Classification) as mild and severe. The mild acute pancreatitis is often referred to as Interstitial Pancreatitis, based on its radiographic appearance. Severe acute pancreatitis implies presence of organ failure, local complications, or pancreatic necrosis. Interstitial pancreatitis implies preservation of pancreatic blood supply. The attack is mild in almost 80% of patients who will show marked improvement within 48 hours. In some 20% of patients however it is severe with high morbidity and mortality. [13,14]

Regarding gender distribution, we observed that out of total 100 subjects, 85 were male and remaining 15 were females (85% vs. 15%). We noted a male predominance in our study. This was in coherence with another study from eastern part of our country. [15] The reason for male preponderance is probably higher incidence of alcoholic pancreatitis and also because biliary pancreatitis is seen equally in males and females, despite a higher prevalence of gallstones in females. Regarding age incidence, we observed that median age group in our study was 37.5 years among all 100 subjects. Underlying cause of the clinical condition was noted as alcoholic in nature by majority (80%) of the study subjects. In 15 patients (15%) reason for the pancreatitis could not be ascertained despite extensive evaluation. Abdominal pain (100%) and vomiting (88%) were the most consistent symptoms in our study. Among the 100 patients studied 85 had mild pancreatitis, 4 had severe pancreatitis and 11 patients had acute on chronic pancreatitis. One patient of acute necrotizing pancreatitis required intensive Care Unit (ICU) admission and developed organ failure indicating adverse outcome. Common complications of the clinical condition were noted as pleural effusion (n=21, 21%), followed by ascites (n=16, 16%) and acute fluid collection (n=7, 7%). Morality was seen among two patients (3%). On the other hand, a lower mortality was seen by Beger et al. [16] It could be explained on the basis of better nursing care received by the patients.

The severity of acute pancreatitis has been categorized using a number of different ways. The presence of systemic inflammatory response syndrome, scores such as the Glasgow, Ranson, and acute physiology and chronic health evaluation, and other indicators of illness severity are useful but insufficiently established to predict mortality. [17] Early organ malfunction indicates the severity of the disease, and patients need to start receiving urgent care very once. Most of the time, antibiotic prophylaxis is ineffective, and early enteral feeding reduces both local and systemic infection. [18] Over the past few years, there have been substantial changes in how acute pancreatitis is treated. Patients with infected necrosis and increasing sepsis require intervention in the early stages of therapy, which is non-surgical and only supportive. Early intensive care has unquestionably improved patients' outcomes. [19] Early identification of patients who are at high risk of developing complications and repeated clinical evaluation may have significant therapeutic implications. In the patient population studied it is evident that alcoholism is the main etiological factor as compared to history of gall stones and infections.

Conclusion

Acute pancreatitis is one of the leading causes of increase in morbidity and mortality to society. Alcohol and gallstones were the most common etiological factors of acute pancreatitis. Clinical assessment along with radiological findings correlated well with the morbidity and mortality. Our study identifies alcoholism as one of the most important etiological factors.

References

1. Williams Norman, S. Bailey & Love's short practice surgery, 27th ed. 2018; 1212-39.
2. Sakorafas GH, Tsiotou AG. Etiology and pathogenesis of acute pancreatitis: current concepts. Journal of Clinical Gastroenterology. 2000 Jun 1;30(4):343-56.
3. Boon NA, Colledge NR, Walker BR, Hunter JA, Davidson LS. Davidson's principles and practice of medicine. (No Title). 2006 Jun 1.
4. Bailey & Love's Short Practice of Surgery 27 Edition; Page 1221-1224.
5. Shah D, Makharia GK, Ghoshal UC, Varma S, Ahuja V, Hutfless S. Burden of gastrointestinal and liver diseases in India, 1990–2016. Indian Journal of Gastroenterology. 2018 Sep; 37:439-45.

6. Working Group IAP/APA Acute Pancreatitis Guidelines. IAP/APA evidence-based guidelines for the management of acute pancreatitis. Pancreatology 2013;13(4 Suppl 2):e1
7. Banks PA. Practice guidelines in acute pancreatitis. Am J Gastroenteology. 1997;92:377-386
8. Güngör B, Cağlayan K, Polat C, Seren D, Erzurumlu K, Malazgirt Z. The predictivity of serum biochemical markers in acute biliary pancreatitis. ISRN Gastroenterol 2011;2011:27 9607
9. Gomez D, Addison A, De Rosa A, Brooks A, Cameron IC. Retrospective study of patients with acute pancreatitis: is serum amylase still required? BMJ open. 2012 Jan 1;2(5): e001471.
10. Mofidi R, Patil PV, Suttie SA, Parks RW. Risk assessment in acute pancreatitis. Journal of British Surgery. 2009 Feb;96(2):137-50.
11. Singh VK, Bollen TL, Wu BU, Repas K, Maurer R, Yu S, Mortele KJ, Conwell DL, Banks PA. An assessment of the severity of interstitial pancreatitis. Clinical Gastroenterology and Hepatology. 2011 Dec 1;9(12):1098-103.
12. Banks PA, Freeman ML, Practice Parameters Committee of the American College of Gastroenterology. Practice guidelines in acute pancreatitis. Official journal of the American College of Gastroenterology| ACG. 2006 Oct 1;101(10):2379-400.
13. El B. A clinically based classification system for acute pancreatitis. Summary of the international symposium of acute pancreatitis. Arch Surg. 1993; 128:586-90.
14. Skife P and Kingsworth AN. Acute pancreatitis assessment and management: Post Grad Med J. 1996; 72: 277-283.
15. Baig SJ, Rahed A, Sen S. A prospective study of the aetiology, severity and outcome of acute pancreatitis in Eastern India. Tropical Gastroenterology. 2008 Jan 21;29(1):20.
16. Beger HG, Buchler MW, Kozarek R, Lerch MM, Neoptolemos JP, Warshaw AL, et al., editors. The Pancreas: An Integrated Textbook of Basic Science, Medicine, and Surgery. United States: John Wiley and Sons; 2009.
17. Chauhan S, Forsmark CE. The difficulty in predicting outcome in acute pancreatitis. Official journal of the American College of Gastroenterology. ACG. 2010 Feb 1;105(2):443-5.
18. Yadav D, Agarwal N, Pitchumoni CS. A critical evaluation of laboratory tests in acute pancreatitis. The American journal of gastroenterology. 2002 Jun 1;97(6):1309-18.
19. Howard TJ, Patel JB, Zyromski N, Sandrasegaran K, Yu J, Nakeeb A, Pitt HA, Lillemoe KD. Declining morbidity and mortality rates in the surgical management of pancreatic necrosis. Journal of Gastrointestinal Surgery. 2007 Jan; 11:43-9.