



Clinical Profile of Acute Pancreatitis in Magadh Region of Bihar, India

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Abstract

Background: Acute pancreatitis remains a disorder with devastating consequences. Although most episodes are mild and self-limiting, up to one fifth of patient develop a severe attack that can be fatal. In spite of technical advances in medical and surgical field's acute pancreatitis remains a major cause of morbidity and mortality. So this challenging subject is taken up for the present study in which we will be studying age, sex prevalence and etiology and clinical presentation of acute pancreatitis. This study was a prospective observational hospital based study performed after the hospital's ethical clearance. This study was undertaken during mid 2016 and mid 2018 at of Anugrah Narayan Magadh Medical College and Hospital, Gaya, Magadh Division of Bihar, India. 40 consecutive acute pancreatitis cases were analysed.

Objectives: To study the age, sex prevalence and etiological factors of acute pancreatitis.

Material & Methods: The study population consisted of 40 cases of acute pancreatitis that fulfilled the diagnostic criteria. Data collection on admission included age, sex, address and clinical presentation with respect to pain vomiting, gallstones trauma and drugs was noted. History of previous episodes and comorbidities were noted. Chi-square tests were employed to find out the difference between groups of frequencies obtained for the specific statements.

Conclusion: Out of 40 patients, Males were (55%) and (45%) were females. Majority of patients were belonging to the age group of 41-60 (42.5%) with a median age of 37 yrs. Most common etiology for acute pancreatitis was biliary (55%) followed by alcoholism (32.5%), hyperlipidemia (2.5%) and traumatic (2.5%) pancreatitis was found in one patient each and where no cause was found was labelled as idiopathic (7.5%). Biliary pancreatitis was the cause of acute pancreatitis in Females 88.3%. In males, alcoholism induced pancreatitis (50%) was most common, second commonest was biliary etiology.

Keywords: Acute pancreatitis, Alcohol, Traumatic pancreatitis, Biliary pancreatitis, Gall stones.

Introduction

Acute pancreatitis is an acute condition presenting with moderate to severe abdominal pain. It is usually associated with raised pancreatic enzymes level in the blood due to pancreatic inflammation^[1]. Acute pancreatitis is categorized as mild or severe. In mild acute pancreatitis there is

interstitial edema of the gland and minimal organ dysfunction. About 80% of patients will have mild attack of pancreatitis, with mortality around 1%. In severe acute pancreatitis there is pancreatic necrosis, a severe systemic inflammatory response and often multi organ failure with mortality 20-50%. Most deaths occur in the early phase of the attack, from multiple organ failure, while deaths

occurring after one week of onset are due to infection^[2].

The diagnosis of mild disease may be missed and death may occur before diagnosis in 10% patients with severe disease. AP runs a benign course in Asian countries and the etiology is different from that of the western population. Gall stones and alcohol abuse account for 70% of cases of AP in India.

The incidence of AP increases with age. More recently, biochemical markers, such as C-reactive protein³, interleukin-6 and trypsinogen activation peptide, have been used as predictors of severity in AP^[3]. C-reactive protein is a useful marker only 48 h after the onset of acute episode^[4]

Severe pancreatitis is defined by pancreatitis associated with organ failure and/or local complication such as necrosis, abscess or pseudocyst. The natural course of severe acute pancreatitis runs in two phases. The first two weeks are characterized by the systemic inflammatory response syndrome (SIRS) resulting from the release of inflammatory mediators.^[5]

In patients with necrotizing pancreatitis, organ failure is common and often occurs in the absence of infection. In addition to organ dysfunction, general derangements include hypovolemia, a hyper dynamic circulatory regulation, fluid loss from the intravascular space and increased capillary permeability.

The second phase begins approximately two weeks after the onset of the disease. It is characterised by infection of pancreatic necrosis leading to multiple systemic complications such as pulmonary, renal and cardiovascular failure^[6].

The severity of acute pancreatitis can be predicted based upon clinical, laboratory, and radiologic risk factors, various severity grading systems, and serum markers. Some of these can be performed on admission to assist in triage of patients while others can only be obtained during the first 48 to 72 hours or later^[7] Scoring system like Ranson score, Glasgow score and APACHE 2 (Acute physiology and chronic health evaluation) predict the severity of acute pancreatitis. Scoring system

for pancreatitis utilizes multiple clinical variables to predict outcomes in groups of patients with acute pancreatitis. Ranson score, and APACHE 2 score which includes 12 physiological variables.

On CECT, necrotizing pancreatitis is defined by focal or diffuse well marginated zone of unenhanced parenchyma (>3 cm in diameter or >30% of pancreatic area) after intravenous contrast administration^[8]. Balthazar EJ, et al.^[9] constructed a Computed tomography severity index (CTSI) for acute pancreatitis that combines the grade of pancreatitis with the extent of pancreatic necrosis.

Early accurate diagnosis is very important for management. Symptoms of acute pancreatitis vary considerably. Some patients have mild epigastric discomfort that may mimic peptic ulcer. Others suffer from an acute severe abdomen pain that cannot be readily distinguished from such severe intra abdominal condition as perforated duodenal ulcer or mesenteric infarction or obstruction.

Aims & Objectives

1. To study the age, sex prevalence of acute pancreatitis.
2. To study the various etiological factors of acute pancreatitis.
3. To study the clinical features of acute pancreatitis.

Materials and Methods

This study was a prospective observational hospital based study performed after the hospital's ethical clearance. This study was undertaken during mid 2016-mid 2018 at of Anugrah Narayan Magadh Medical College and Hospital, Gaya, Magadh Division of Bihar, India. In this study a total 40 cases of acute pancreatitis were studied. All ages of both sexes of patients were included, the diagnosis of acute pancreatitis was based on appropriate clinical features together with an elevation of serum amylase and/or urinary amylase. Normal value of serum amylase is up to 220 U/L and that of urinary amylase is up to 400 U/L.

Inclusion criteria: All the patients admitted in the surgical ward of the department of General surgery who were diagnosed for acute pancreatitis and above the age of 15 years were included after their written consent.

Exclusion criteria: Acute episodes in patients with chronic pancreatitis, conditions like renal failure, cardiac failure, generalized debility and other factors, which adversely affect recovery from pancreatitis and patients who were treated in another centre were excluded from study. Also Patient with a serum amylase level greater than upper limit of normal value with a diagnosis of pancreatic or periampullary cancer, chronic pancreatitis, perforation of the gut and diabetic ketoacidosis were excluded from this study.

Table 1: Age and sex distribution of patients (N=40).

| Age (Yr) | Male | Female | % of male | % of females |
|----------|------|--------|-----------|--------------|
| 15-20 | 1 | 1 | 04.5% | 05.5% |
| 21-30 | 7 | 4 | 31.8% | 22.2% |
| 31-40 | 7 | 5 | 31.8% | 27.7% |
| 41-50 | 3 | 2 | 13.6% | 11.1% |
| 51-60 | 2 | 2 | 09.0% | 11.1% |
| 61-70 | 1 | 3 | 04.5% | 16.6% |
| 71-80 | 1 | 1 | 04.5% | 05.5% |
| Total | 22 | 18 | M:F=1.22 | |

Patient evaluation

- Detailed history of patients was entered in proforma.
- Serum amylase and lipase were estimated immediately on presentation.
- Preliminary USG of Abdomen and Pelvis was done on the same day of presentation.
- CECT was done after 48 hrs. in all patients except in persistent ARF.
- In the absence of gallstones and / or history of significant history of alcohol use, a serum triglyceride levels done (>1000mg/dl taken as diagnostic).
- After doing all available investigation if no cause was found, considered as idiopathic pancreatitis
- Severity of assessment done with Atlanta and Glasgow classification.

- All patients were put on conservative line of management.
- Patients were followed up daily clinically (BP, HR, Urine Output, P/A Examination) and serum amylase was repeated on the 3rd day.
- Repeat USG/CT abdomen & pelvis was done if patient's condition remained same or deteriorated.
- If the patient developed any of the complications, such patients were evaluated for medical/surgical management of the same complications.

A case record format was used and detailed clinical history was recorded from the patient's history or written history sheet. Age, sex, address, symptoms and signs were noted.

Relevant past history, family history and personal history, specially alcohol consumption were recorded. Associated medical diseases like diabetes mellitus, hypertension, chronic renal failure, bronchial asthma, chronic obstructive pulmonary disease (COPD) and Ischemic heart disease were also noted.

Results of haematological, biochemical and imaging tests were recorded. The most likely aetiological factor was identified by analyzing history, physical examination and relevant investigations. Gall stone related acute pancreatitis, was based upon the identification of stone in the common bile duct (CBD) by sonography. Alcohol, mumps or trauma was considered to be aetiological factor from the history. When no known cause was found it was termed idiopathic.

Criteria of severity was based on the Glasgow score.

Data analysis

Normally distributed continuous variables were expressed as mean (range) and non-normally distributed variables were expressed as median. Chi-square tests were employed to find out the difference between groups of frequencies obtained for the specific statements. A P value of less than 0.05 was considered statistically significant.

Results

Out of 40 patients included in study, 22 were males and 18 were females. In our study, majority of patients at the age group of 41-60 (42.5%). The youngest patient was 19 yrs and the oldest Patient was 77 years (Table 1). All the patients (100%) presented with pain abdomen, 85% of them presented with nausea/vomiting, 45% of them presented with fever and 40 % of them with jaundice (Table 2).

Table 2: Symptoms (N=40).

| Symptoms | No of patients | % |
|----------------------|----------------|-----|
| Pain abdomen | 40 | 100 |
| Fever | 18 | 45 |
| Nausea/Vomiting | 34 | 80 |
| Jaundice | 16 | 40 |
| Abdominal distention | 18 | 45 |

In this study, biliary pancreatitis was found to be the most common cause for acute pancreatitis. Alcoholism was the second most common cause (32.5%). Hyperlipidemia (2.5%) and traumatic (1/2.5%) pancreatitis was found in one patient each. Patients where no cause was found were labelled as idiopathic (7.5%). In males alcoholic pancreatitis was most common and second commonest was biliary pancreatitis. Diabetes mellitus was present in 58%. Obesity was present in 32.5%.

Discussion

Acute pancreatitis is an acute inflammation of the pancreas with variable involvement of organ systems. The present study proved biliary pancreatitis (58%) as the most common cause for acute pancreatitis. The second most common cause was found to be alcoholism (32.5%). The other causes being hyperlipidaemia (2.5%), trauma (2.5%) and 7.5% of the cases were idiopathic.

In biliary pancreatitis usually occurs in older adults, often have a history of cholelithiasis or intermittent, postprandial right upper-quadrant pain and nausea. Patients with acute pancreatitis presented with mild to severe epigastric pain, with radiation to the back. The pain was constant, dull and boring, and was worse when the patient was

supine. A heavy fatty meal or drinking triggered the pain. Nausea and vomiting were present in 75 to 80 % of patients.

The abdominal distension in 18(45%) patients was due to paralytic ileus arising from retroperitoneal irritation or due to ascites, or due to a retroperitoneal phlegmon.

Jaundice in 16(40%) patients was there in biliary pancreatitis, due to distal CBD obstruction by gall stones.^[10]

On examination, Turner's sign (Bluish discoloration in the left flank) and Cullen's sign (Bluish discoloration of the periumbilical region) were also seen in 4(10%) due to haemorrhage into the retro peritoneum .The diffusion of blood occurs from the retroperitoneum to the umbilicus through the round ligament for Cullen's sign and from the retroperitoneum to the subcutaneous tissues of the flanks for Grey Turner's sign. These signs, although not specific, are associated with severe acute pancreatitis and high mortality.^[11]

A rare feature called, fox sign (Bluish discoloration below the inguinal ligament or at the base of the penis) and Bryant's sign-bluish discoloration of scrotum, were observed in 2 and 3 patients respectively. Epigastric and right hypochondriac tenderness were present. Bowel sounds were decreased or absent. Temperature was mildly elevated (100-101 Degree F) in uncomplicated cases. In severe cases, orthostatic hypotension and tachycardia were present, along with tachypnea or dyspnoea in 5(12.5%) patients. Pleural effusion, especially on the left side as present in 4 (10%) cases. The age and sex recruitment of the subjects in the present study was in accordance with the earlier studies.^[12]

The combined etiology of alcohol and biliary pancreatitis is 87.5% which is fairly consistent with the other studies. In males alcoholism induced pancreatitis 50% was most common, second was biliary etiology (40.9%).

Conclusion

Most common etiology for Acute pancreatitis was biliary followed by alcoholism and traumatic

pancreatitis. In Males, alcohol induced pancreatitis was most common, second commonest was biliary pathology. Diabetes mellitus was most common comorbidity in our study and obesity was found in 38% patients. Because pancreatitis mimics many other acute abdominal conditions, the diagnosis of acute pancreatitis must include a careful consideration of differential diagnosis, which should include perforated viscus, acute cholecystitis, appendicitis, and similar conditions.

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Declarations

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