ORIGINAL RESEARCH

A Study of Clinical Profile of Acute Pancreatitis Patients at Tertiary Care Centre, Karwar

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ABSTRACT

Background: Acute pancreatitis remains a disorder with devasting 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. Severity of acute pancreatitis is linked to the presence of systemic organ dysfunction and/or necrotizing pancreatitis.**Materials and Methods**: This was a hospital based retrospective study which was conducted from July 2022 to December 2022 at tertiary care hospital, KRIMS, Karwar. All patients with a diagnosis of acute pancreatitis were included in this study in order to find out the clinical presentations from the available clinical, laboratory and radiological data. **Results**: Of the 50 patients in this study, 49 were male and 1 were female. Minimum age in our study was 18 years and maximum were 70 years. Maximum numbers of patients were below 45 years of age. Alcohol was identified as the most important etiological factor associated with acute pancreatitis. Among the known etiological factors 90% of the cases were related to alcoholism and 4% were due to gall stone disease. Abdominal pain and vomiting were the most common symptoms in our study. Epigastric tenderness was present in 96% of the cases and guarding/rigidity in 56% of cases. 16% patients showed jaundice as a sign of acute pancreatitis. There was no major difference between the CT grading system and clinical grading system. Most of the patients recovered with conservative treatment. **Conclusion:** Acute pancreatitis is one of the leading causes of increase in morbidity and mortality to society. 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.

Key words: Acute pancreatitis, Alcohol, Gall stones, Necrosis.

INTRODUCTION

Acute pancreatitis (AP) 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. Acute pancreatitis 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.

MATERIALS AND METHODS

This was a Retrospective hospital record-based study, performed in the Department Of General Medicine in KRIMS Teaching Hospital, Karwar, from July 2022 To December 2022 to find out the clinical presentation of acute pancreatitis patients. Institutional Ethics and Research Committee approval & MRD was obtained to conduct the study. All age groups and patients of both sexes were included in this study. The diagnosis of acute pancreatitis was based on presence of appropriate clinical evidence associated with an elevation of serum amylase . Patients were classified into mild, moderate, and severe acute pancreatitis based on Ranson's score, Glasgow scoring system.14 Patients with chronic pancreatitis and malignancy were excluded from the study. On admission detail history were taken. 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 pre-designed proformas. Age, sex, address, symptoms and signs were noted. 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. All patients were initially subjected to conservative measures.

Inclusion criteria

- All patients of > 18 years of age who have been diagnosed to have acute pancreatitis by clinical examination, supported by USG, CT abdomen.
- Patient of all age group and both sexes.

Exclusion criteria

- Cases with incomplete documentation &<18 years of age.
- Chronic Pancreatitis and pancreatic malignancy

Statistical 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

In the present study most of the patients were in the age group of 20 – 39 years (64%) followed by 40 – 59 years (30%), 2 % in less than 20 years and 4 % in the age group of 60 – 80 years.(Table 1) Study subjects composed of both males and females. Males contributed 98% of the patient population and females were 2% only (Table 1). In our study alcohol (92%)was identified as the most important etiological factor associated with pancreatitis (Table 2). History of gall stones was found in 2% of cases and history of infections was also found in 2 % of the cases. Both the features were present in the male patients.

Table 1: Age & Gender distribution of Acute Pancreatitis (AP).

Age	Male (%)	Female (%)
<20	1 (2%)	0
21-39	32 (64%)	0
40-59	14 (28%)	1 (2%)
60-80	2 (4%)	0

Table 2: Patients distribution based on Alcohol consumption.

Alcohol	N	%
Yes	46	92
No	4	8

Abdominal pain (100%) and vomiting (88%) were the most consistent symptoms in our study (Table 3). Epigastric tenderness was seen in 96% patients followed by guarding & rigidity in 56% patients (Table 4).

Table 3. Patient distribution based on Symptoms.

Symptoms	N	%
Abdominal pain	50	100
Vomiting	44	88
Fever	5	10
Abdominal pain	8	16

Table 4. Patient distribution based on Signs.

Signs	N	%
Epigastric tenderness	48	96
Guarding/Rigidity	28	56
Jaundice	8	16
Shock	4	8
Paralytic ileus	2	4

Table 5. Clinical Grading of Acute Pancreatitis.

Grading	N	%
Acute edematous Pancreatitis (Mild)	42	84
Acute Necrotising Pancreatitis (Severe)	2	4
Acute on Chronic Pncreatitis	6	12

Table 6. CT scan Grading of Acute Pancreatitis.

Grading	N	%
Normal	4	8
Grade 1-2	38	76
Grade 3-5	8	16

Among the 50 patients studied 42(84%) had mild pancreatitis, 2 (4%) had severe pancreatitis and 6(12%) patients had acute on chronic pancreatitis (Table 5). Two patient of acute necrotizing pancreatitis required intensive Care Unit (ICU) admission and developed organ failure indicating adverse outcome. As demonstrated in table no 5 and 6 the clinical and CT grading findings corroborate with each other (Table 5 & 6).

DISCUSSION

This was a hospital record based retrospective study on 50 cases of acute pancreatitis. Acute pancreatitis is a major surgical challenging disease.[9,12,13] It is a complex condition which varies from mild self-limiting inflammation to rapidly deteriorating condition which poses a serious threat to life.[14,15] An early and accurate diagnosis of the diseased and rapid institution of therapy might reduce the morbidity and mortality.[16] If the etiological factor/factors are known and can be eliminated, further attacks can be prevented. Clinical criteria i.e. Ranson's criteria, Glasgow scoring system and radiological scoring system can be used for diagnosis and appropriate management.[17]

In this study the age range of the patient was 18 to 70 years with a peak incidence was in the third and fourth decade (64%). Besselink MG *et al.*[18] found median age of presentation as 53 years. However in our study the median age of presentation was 37 years. This can be explained by more alcohol consumption in middle aged males as compared to other age groups. This is comparable to the studies done by Negi *et al.*[19] where 47.15% were in the age group of 41 – 60 years and 43.91% were in the age group 18-40 years. However, the peak incidence at the

age of 30 years was reported in a study done by Baig *et al.*[20] indicating younger age group being affected. In USA, Western Europe and Asia gall stones are the most common cause of acute pancreatitis and alcohol is the second most common cause. However the variation of etiology of pancreatitis depends on country of origin. In our study most cases (92%) were due to consumption of alcohol. In our study 2% of the patients had documented gall stone induced pancreatitis. Sivsankar A *et al.*[21] found alcohol consumption in 45.8% of cases and biliary microlithiasis in 8.3% of cases. In a study by Ramu R *et al.* in Kerala,[22] alcohol induced pancreatitis was higher (42.431%) followed by idiopathic pancreatitis (36.926%). In another study by Vengadakrishnan*et al.* in Chennai alcohol induced pancreatitis was found to be higher (51%).[23] In our study, the most common symptom observed was abdominal pain (100%) followed by vomiting (88%) and fever (16%). This correlates with the studies by Negi *et al.*,19 where vomiting 42.27% and fever 22.4% were seen respectively. In the study done by Ahmed K *et al.*,[16] the most common symptoms were upper abdominal pain (96%), nausea and vomiting (88%), abdominal distension (40%) and fever (12%) which correlates with our study. Similar findings were observed in the study done by Raghuwanshi S *et al.*, in which the triad of epigastric pain, nausea and vomiting was seen in 75% patients.[24] The clinical presentation varies from case to case, depending on severity of acute pancreatitis and any under lying co-morbidities. Mild acute pancreatitis present with minimal organ dysfunction and uneventful recovery, while severe acute pancreatitis is associated with local and systemic complications and high mortality. In our study 84% patients were diagnosed as mild (acute oedematous pancreatitis) type with less hospital stay than severe (acute necrotizing pancreatitis) type. There was no mortality. Similar results were obtained in a study done by Ramu R *et al.*[22] in Kerela where 82.1% cases were mild and Ahlawat *et al.*[25] study in North India where 82% cases were classified as mild. 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. Our study was conducted in a resource limited setting with no external funding. One of the limitations of our study was a small sample size. A larger sample size study is required to strengthen the present study findings.

CONCLUSION

Acute pancreatitis is one of the leading cause of increased morbidity and mortality to society. Out of the 50 patients studied, maximum numbers of patients were in the third and fourth decade (63%) of life. A higher number of male patients presented with the disease (98%) as compared to females (2%). In our study population pain abdomen, nausea and vomiting were the most common symptoms. Clinical assessment along with laboratory markers correlated well with morbidity and mortality. Patients with necrotizing pancreatitis had adverse outcome. Our study identifies alcoholism as one of the most important etiological factors. 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. Early identification of patients who are at high risk of developing complications and repeated clinical evaluation may have significant therapeutic implications.

Conflict of interest: NIL
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