

Study of clinical presentation and management of acute pancreatitis at a tertiary hospital

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Abstract

Background: Acute pancreatitis includes a wide spectrum of disease, from one with mild self-limiting symptoms, to fulminant processes with multi-organ failure and high morbidity and significantly high mortality. The present study evaluates the etiology, clinical manifestations and management of acute pancreatitis at a tertiary hospital. **Material and Methods:** Present study was single-center, prospective, observational study, conducted in patients 11-70 years, of either gender, diagnosed as a case of acute pancreatitis, admitted under surgery department. **Results:** Present study was a prospective, clinical study consisting of 53 cases of acute pancreatitis. There were a total of 53 episodes of acute pancreatitis in 49 patients with 4 recurrences (n=53). 1 patient underwent open cholecystectomy for biliary pancreatitis. In present study majority of cases were from 31-40 years (43.4%), male (47 patients). Pain in abdomen (100%), nausea/vomiting (83%) and abdominal distention (33.96%) were common symptoms noted in present study. Alcoholism was the main etiological factor (81.1%). USG Abdomen was diagnostic in 86.8% of the patients. In present study 12(22.6%) patients had severe acute pancreatitis and developed complications, 3(5.66%) had acute fluid collections, 2(3.77%) had pseudocyst, 8(15.1%) had ascites, 9(16.98%) had pleural effusion, 2 (3.77%) had pancreatic necrosis, 1 (1.89%) had superior mesenteric vein thrombosis, 1 (1.89%) had GI bleed and 5 (9.43%) had organ failure. **Conclusion:** For acute pancreatitis, alcohol being the most common etiology, has a male preponderance and most commonly presents in the 4th decade of life. The management is mainly conservative, with surgery reserved for patients with biliary pancreatitis and those developing complications secondary to acute disease

Keywords: Acute pancreatitis, acute abdomen, alcohol, conservative treatment

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INTRODUCTION

Acute pancreatitis is a common condition, estimated overall prevalence is about 8/100,000 cases presenting with pain abdomen in India. The annual incidence may range from 5-50/100,000 worldwide.¹ Gall stone disease and alcohol account for greater than 80% of all patients with acute pancreatitis, with biliary disease accounting for 45%

and alcohol found in 35% of patients.² Acute pancreatitis includes a wide spectrum of disease, from one with mild self-limiting symptoms, to fulminant processes with multi-organ failure and high morbidity and significantly high mortality. Although the overall mortality rate for acute pancreatitis is 2–10%, this is related primarily to the 10–30% of patients with severe disease characterized by pancreatic and peripancreatic necrosis.⁴ Patients with severe and necrotizing pancreatitis require intensive therapy, which may include wide operative debridement of the infected pancreas or surgical management of local complications of the disease. Whereas early aggressive debridement was used commonly for all patients with pancreatic necrosis in the past, now most pancreatic surgeons have adopted a more conservative algorithm of selective and delayed pancreatic debridement. The present study evaluates the etiology, clinical manifestations and management of acute pancreatitis at a tertiary hospital.

MATERIAL AND METHODS

Present study was single-center, prospective, observational study, conducted in department of general surgery at a tertiary care hospital. Study duration was of 1 year (July 2018 to June 2019). Study was approved by institutional ethical committee.

Inclusion criteria: Patients 11-70 years, of either gender, diagnosed as a case of acute pancreatitis, admitted under surgery department.

Exclusion criteria: Patients with chronic pancreatitis and acute on chronic pancreatitis; Patients with questionable diagnosis of other possible abdominal conditions.

Study was explained to patients and a written informed consent was taken for participation and follow-up. After admission to the hospital, a detailed clinical history and examination of the patient was done. Routine investigations like Complete hemogram, Blood urea, Serum calcium and Serum amylase were performed. USG Abdomen was done routinely to confirm the diagnosis, for evaluation of the biliary tract and for detecting any complications. Contrast enhanced CT Abdomen was undertaken when the diagnosis was doubtful, when USG was not confirmative and when patient failed to improve beyond 72 hours.

Diagnosis of pancreatitis was confirmed, conditions that have similar clinical features were excluded. Presence of biliary tract disease, excluding other possible etiologies of acute pancreatitis was done along with severity of the disease and any complications.

The patients were classified as having, Mild acute pancreatitis if, it is associated with transient organ failure (<48 hours), no local complications and an uneventful recovery and Severe acute pancreatitis if, it is associated with organ failure (>48 hours) and/or local complications, such as necrosis, abscess, or pseudocyst.

The treatment plan was focussed on adequate initial resuscitation and supportive care, early detection of complications and definitive treatment of the associated biliary disease. Data like clinical symptoms and signs, results of investigations, complications, surgical procedures if any, duration of hospital stay, recurrence if any were carefully recorded. Data was collected and compiled using Microsoft Excel and statistical analysis was done using descriptive statistics.

RESULTS

Present study was a prospective, clinical study consisting of 53 cases of acute pancreatitis. There were a total of 53 episodes of acute pancreatitis in 49 patients with 4 recurrences (n=53). 1 patient underwent open cholecystectomy for biliary pancreatitis. In present study majority of cases were from 31-40 years (43.4 %), male (47 patients).

Table 1: Age and Gender distribution

Age (in years)	Male (n=47)	Female (n=06)	Total (n=53)
11-20	04 (8.51)	0	04 (7.55 %)
21-30	08 (17.02 %)	02 (33.33 %)	10 (18.85 %)
31-40	21 (44.7 %)	02 (33.33 %)	23 (43.4 %)
41-50	07 (14.9 %)	01 (16.67 %)	08 (15.1 %)
51-60	07 (14.9 %)	01 (16.67 %)	08 (15.1 %)
61-70	0	0	0

Pain in abdomen (100 %), nausea/vomiting (83 %) and abdominal distention (33.96 %) were common symptoms noted in present study. In our study 100% of the patients had tenderness, 3.77% had pseudocyst presenting as mass abdomen, 15.1% had ascites, and 9.43% of the patients presented in shock.

Table 2: Signs and symptoms

Signs and symptoms	No. of patients	Percentage (%)
Symptoms		
Pain in abdomen	53	100
Nausea/Vomiting	44	83
Abdominal distention	18	33.96
Fever	09	16.98
Jaundice	03	5.66
Signs		
Tenderness	53	100
Mass abdomen	2	3.77
Ascites	8	15.1
Shock	5	9.43

In present study alcoholism was the main etiological factor (81.1 %), 3.77% of patients had biliary pancreatitis and the cause was unknown in 15.1% of patients.

Table 3: Etiological factors

Etiology	No. of patients	Percentage (%)
Alcoholism	43	81.1
Biliary	2	3.77
Idiopathic	8	15.1

In present study 22.6% of patients presented with hyperglycemia, 15.1% had raised blood urea nitrogen (BUN), 22.6% had hypocalcemia, 7.55% had a WBC count of more than 15,000cells/mm³, and none of the patients had elevated AST levels. 54.7% of the patients had S. Amylase levels more than three times normal i.e. >240 IU/L. USG Abdomen was diagnostic in 86.8% of the patients, 7 (13.2%) patients had fatty liver on USG.

Table 4: Laboratory investigations

Investigations	Elevated	Percentage (%)
RBS (>180 mg/dl)	12	22.6
BUN (>45 mg/dl)	8	15.1
Serum Amylase (>240 IU/L)	29	54.7
Serum Calcium (< 8 mg/dl)	12	22.6
WBC Count (>15,000 cells/mm ³)	4	7.55
AST (>200 IU/L)	0	0
USG		
Diagnostic	46	86.8
Non-Diagnostic	7	13.2

In present study 12(22.6%) patients developed complications, 3(5.66%) had acute fluid collections, 2(3.77%) had pseudocyst, 8(15.1%) had ascites, 9(16.98%) had pleural effusion, 2 (3.77%) had pancreatic necrosis, 1 (1.89%) had superior mesenteric vein thrombosis, 1 (1.89%) had GI bleed and 5 (9.43%) had organ failure. All the complications were conservatively managed except for one patient with bilateral pleural effusion for whom bilateral intercostal drainage was done.

Table 5: Complications in acute pancreatitis

Complications	No. of patients	Percentage (%)
Acute fluid collection	3	5.66
Pseudocyst	2	3.77
Ascites	8	15.1
Pleural effusion	9	16.98
Pancreatic necrosis	2	3.77
Venous thrombosis	1	1.89
GI bleeding	1	1.89
Organ failure	5	9.43

In our study 12 (22.6%) patients developed various complications and were classified as severe acute pancreatitis.

Table 6: Severity of acute pancreatitis

Severity	No. of patients	Percentage (%)
Mild acute pancreatitis	41	77.4
Severe acute pancreatitis	12	22.6

4 (7.55%) of the total patients had a recurrence during the study period. Overall the mean hospital stay was 5.5 days and the mean hospital stay for mild and severe pancreatitis was 5.2 and 6.7 days respectively. In our study 1 (1.89%) patient died. The patient died due to gastro intestinal bleeding secondary to acute pancreatitis.

DISCUSSION

Acute pancreatitis is a common disease entity. Frequent occurrence and serious complications have brought into fore the issues regarding management. While diagnosing a case of acute pancreatitis, a thorough history, a complete physical examination and biochemical tests are necessary. Radiological confirmation may be required. The mean age of presentation in our study was 38.1 years and is comparable to the study by Kashid A *et al.*⁷. Other studies had late presentation in the 5th-6th decade. This is probably because alcohol was the main etiological factor in our study which presents usually in the younger age group. Other study findings were as Choudhuri⁸ (44.89 years), Pupelis G⁹ (47 years) and Buchler⁵ (55.1 years). There was a male predominance in our study with males accounting for 88.7% of patients with a M:F::7.8:1. The other studies although had a higher percentage of males the ratio of M:F

was low. This again could be attributed to alcohol which was the main etiologic agent. Incidence of male patients in other studies was, Pupelis G *et al.*⁹ (73.7 %), Kashid A *et al.*⁷ (70.91 %), Choudhuri G *et al.*⁸ (66.6 %) and Buchler MW *et al.*⁵ (61 %). Alcohol was the main etiological factor in our study and present in about 81.1% of patients. This was comparable to the study by Sand J³ (70 %). In the other studies gall stone was the main etiological factor as in Choudhuri G *et al.*⁸ (26.04 %) and Buchler MW *et al.*⁵ (45 %). The clinical features noted in by Kashid A *et al.*⁵⁴ were pain abdomen (92.73 %), nausea/vomiting (60 %), abdominal distention (16.36 %), fever (20 %) and jaundice (7.27 %). Similar findings were noted in the present study. The sensitivity of serum amylase was 54.7% in the present study and was comparable to the study by Kashid A *et al.*⁵⁴ (50.9 % sensitivity). But in the study by Thomson⁵⁷ it was 95.6% sensitive and this can be attributed to the late presentation of patients to our institution, and also because alcohol is the main etiological agent, where the rise of S. Amylase is less compared to biliary pancreatitis. USG was diagnostic in 86.8% of patients in our study and this was comparable to the study by Ammori *et al.*¹⁵ (86 % sensitivity). It was diagnostic in 66.67% of patients in the study by Kashid A and this may be because USG is operator dependent and also because the view can be obscured by overlying bowel gas. 77.4% of the patients had a mild disease in our study whereas the other studies had a higher proportion of severe disease as Kashid A *et al.*⁷ (52.73 %), Choudhuri G *et al.*⁸ (47.7 %) and Buchler MW *et al.*⁵ (58 %). Ours is a government funded institute, and most of the patients belonging to low socio-economic status with acute pain abdomen are referred, and this may be the reason for less percentage of severe cases. Although 15.1% of patients in the present study had ascites which was higher compared to other studies, the rate of pancreatic necrosis was more in other studies as against 3.77% in our study. Organ failure was seen in 9.43% of our patients whereas it was much higher in other studies and this is because most patients in our study had mild disease.^{5,7,8} Only 1 (1.89%) patient with biliary pancreatitis underwent open cholecystectomy, and the others were managed conservatively. This low rate of intervention in our study was because, majority of our patients had mild disease, and also because alcohol was the most common etiology. Patients in the other studies underwent various procedures like ERCP with sphincterotomy, open and laparoscopic cholecystectomy, pancreatojejunostomy for pancreatic fistula, cystojejunostomy for pseudocyst and open drainage for pancreatic abscess.

Table 7: Comparison of procedures

Procedure	Kashid A <i>et al.</i> ⁷	Buchler MW <i>et al.</i> ⁵	Present study
ERCP+ES (%)	20	28.4	0
Laparoscopic cholecystectomy (%)	14.5	17.2	0
Necrosectomy (%)	9.1	13.7	0
Abscess drainage (%)	5.45	0.5	0
Pancreatojejunostomy(%)	3.64	0.5	0
Open cholecystectomy (%)	1.8	9.3	1.89

The duration of stay in mild cases being 5.2 days is comparable to the other studies. The duration of stay in severe cases being 6.7 days was less compared to other studies. The mortality rate in our study standing at 1.89% is less compared to other studies, Kashid A *et al.*⁷ (5.45 %), Choudhuri G *et al.*⁸ (6.5 %) and Buchler MW *et al.*⁵ (4,4 %), as the percentage of severe cases was more in the other studies.

CONCLUSION

Acute pancreatitis is a common cause of acute abdomen in patients presenting to the surgical emergency department. Alcohol being the most common cause of acute pancreatitis in this part of the country, it has a male preponderance and most commonly presents in the 4th decade of life. It is mainly a clinical diagnosis supplanted with biochemical and radiological findings. The management is mainly conservative, with surgery reserved for patients with biliary pancreatitis and those developing complications secondary to acute disease

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