

Original Research Article

Clinical study and outcome of alcoholic and nonalcoholic acute pancreatitis presenting to a tertiary care center

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ABSTRACT

Background: Acute pancreatitis is a common condition involving the pancreas. The estimated incidence is about 3% of cases presenting with pain abdomen. The study is undertaken to study the various etiological factors and clinical factors of alcoholic and nonalcoholic acute pancreatitis and to assess the prognosis, outcome, management of an alcoholic and nonalcoholic acute pancreatitis.

Methods: A total of 60 cases from BMCRI hospital attached selected during the study period from November 2015 to June 2017.

Results: In the present study total 60 patients with acute pancreatitis were enrolled, 55% were alcoholic and remaining 45% were nonalcoholic. The mean age of presentation in our study was 39.2 years and in alcoholic it was 39.42 years, and nonalcoholic it was 39.07 years. There was a male predominance with males accounting for 90 percent in which 61.1% are alcoholic and 38.9 percent are nonalcoholic with 9:1 male to female ratio. In our study 100 % of patients had tenderness, 3% of alcoholic and 7.4 % of nonalcoholic presented as mass abdomen, and 21.2% alcoholic and 7.4% of nonalcoholic presented as ascites. USG abdomen was diagnostic in 93.3 % of the patients in our study. All of them managed conservatively, of the 8 patients of biliary pancreatitis 7 underwent interval cholecystectomy, and 1 underwent ERCP + ES.

Conclusions: Acute pancreatitis is a common cause of acute abdomen. Alcohol being the most common cause of acute pancreatitis in the present study. Nonalcoholic pancreatitis contribute to a significant proportion of etiology of pancreatitis. Prompt identification and diagnostic work up to identify the etiology of pancreatitis followed by appropriate treatment results in cure and prevention of untoward complications.

Keywords: Alcoholic pancreatitis, Nonalcoholic pancreatitis

INTRODUCTION

Acute pancreatitis is a common condition involving the pancreas. The estimated incidence is about 3% of cases presenting with pain abdomen.¹ Although most episodes are mild and self-limiting, up to a 20% of patients develop severe attacks that can be fatal. Gall stones and sustained alcohol abuse together account for 80% of acute pancreatitis. The relative frequency of these two factors depends on prevalence of alcoholism in the

population studied.² Of the mechanical causes of acute pancreatitis, choledocholithiasis is the most common and between 36% and 63% will develop recurrent acute pancreatitis if stone persists. In about 10-30%, cause of acute pancreatitis is idiopathic, other rare causes include ischemia, drug induced, hyperparathyroidism, ERCP, hypercalcemia, trauma, pancreas divisum, autoimmune, hereditary, infectious, malnutrition, scorpion bite, hyperlipoproteinemia, pregnancy. The severity of acute pancreatitis can be predicted based upon clinical,

laboratory, and radiologic risk factors, various severity grading systems and serum markers. Most episodes of acute pancreatitis (80%) are mild and self-limiting, respond well to medical treatment, in contrast, severe pancreatitis is defined as pancreatitis associated with organ failure and/or local complications such as necrosis, abscess formation, or pseudocysts. Severe pancreatitis can be observed in 15-20% of all cases.²

The management of acute pancreatitis has been controversial over the past decades, varying between a conservative medical approach on the one hand and an aggressive surgical approach on the other.³

The IAP/APA 2012 guidelines provide recommendations concerning key aspects of medical and surgical management of acute pancreatitis.⁴ There is increasing evidence towards conservative line of management. In spite of technical advances in medical and surgical fields, acute pancreatitis remains as a major cause of morbidity and mortality. So, the study is undertaken to study the various etiological factors and clinical factors of alcoholic and nonalcoholic acute pancreatitis and to assess the prognosis, outcome, management of an alcoholic and nonalcoholic acute pancreatitis.

METHODS

Source of data

Patients from Bowring and Lady Curzon and Victoria Hospital attached to Bangalore Medical College and Research Institute selected during the study period from November 2015 to June 2017 to a minimum of 60 cases.

Present study was a cross sectional study conducted during the study period from November 2015 to June 2017 carried out at Bowring and Lady Curzon Hospital and Victoria Hospital attached to Bangalore Medical College and Research Institute.

60 patients admitted in the different surgical units will be selected using simple randomization technique.

Inclusion criteria

In-patients with diagnosis of acute pancreatitis admitted to Victoria and Bowring and Lady Curzon Hospital attached to Bangalore Medical College as defined by IAP criteria (The definition of acute pancreatitis is based on the fulfilment of ‘2 out of 3’ of the following criteria: clinical (upper abdominal pain), laboratory (serum amylase or lipase >3 times upper limit of normal) and/or imaging (CT, ultrasonography). Aged 18 years and above

Exclusion criteria

Patients aged less than 18 years. Patients with chronic pancreatitis and acute on chronic pancreatitis

Methodology

After obtaining clearance and approval from the institutional ethical committee and written informed consent (Annexure I), in-patients with acute pancreatitis fulfilling the inclusion criteria will be enrolled in the study (Annexure II). All patients included in the study are informed about the nature of disease and the treatment to be undertaken if any. Demographic data, the nature of the complaints, a detailed history and clinical examination, appropriate investigations to identify etiological factors and management is recorded in a predesigned Performa including the surgical intervention undertaken. The data is then tabulated and subjected to statistical analysis. Follow up investigations and management if any are also recorded in the data.

RESULTS

In our study total 60 patients with acute pancreatitis were enrolled, in which 33 patients were alcoholic (9 recurrence) and remaining 27 were nonalcoholic (4 recurrence).

1 patient underwent necrosectomy (alcoholic pancreatitis) and 7 went cholecystectomy for biliary pancreatitis and one patient underwent ERCP sphincterotomy.

Table 1: Sex and distribution of alcoholic and non-alcoholic pancreatitis.

Age group	Male (n=54)		Female (n=6)		Total (60)	
	No. of patient	%	No. of patients	%	No. of patients	%
18-30	8	13.3	0	0	8	13.33
31-40	28	46.6	1	1.6	29	48.33
41-50	10	16.6	4	6.6	14	23.33
51-60	7	11.6	1	1.6	8	13.33
61-70	1	1.6	0	0	1	1.6

Table 2: Mean age in alcoholic and non-alcoholic pancreatitis.

Mean	Present study: years	
	39.2	
Age in years	Alcoholic	Non-alcoholic
	39.42	39.07

Table 3: Sex comparison in alcoholic and non-alcoholic pancreatitis.

Sex	Present study	Comparison	
		Alcoholic	Nonalcoholic
Male%	90	61.1%	38.9%
Female%	10	0	100%

Table 1 shows analysis of age and sex distribution. In our study, the youngest was 20 years old and eldest was 62

years old. The highest incidence was noted in the age group of 31-40 years, accounting for 48.33 % of the patients. The mean age of presentation in our study was 39.2 years and in alcoholic it was 39.42 (33 /60), and non-alcoholic it was 39.07 years.

In present study there was a male predominance with males accounting for 90 percent in which 61.1 % are alcoholic and 38.9 percent is non-alcoholic with 9:1 male to female ratio.

Symptomatology

In the present study 100% of the patients presented with pain abdomen in alcoholic and non-alcoholic pancreatitis, 96.9 % of alcoholic and 100% of non-alcoholic present with nausea/vomiting. 18.1 % of alcoholic and 22.2 % of non-alcoholic present with abdominal distension. 6 % of alcoholic and 11.1 % of non-alcoholic present with fever and 5 % of alcoholic and 7.4 % of non-alcoholic present with jaundice.

Table 4: Symptomatology in alcoholic and nonalcoholic pancreatitis.

Clinical features	No of patients (n=33)	Alcoholic %	No. of patients (n=27)	Non-alcoholic %
Pain abdomen	33	100	27	100
Nausea/vomitting	32	96.9	27	100
Abdominal distension	6	18.1	6	22.2
Fever	2	6	7	11.1
Jaundice	5	15.1	2	7.4

Signs

In the present study 100% of patients had tenderness, 3% of alcoholic and 7.4% of non-alcoholic presented as mass abdomen, and 21.2% alcoholic and 7.4% of non-alcoholic presented as ascites.

Table 5: Signs in alcoholic and non-alcoholic pancreatitis.

Signs	No of patients (n=33)	Alcoholic	No of patients (n=27)	Non-alcoholic
Tenderness	33	100	27	100
Mass abdomen	1	3	2	7.4
Ascitis	7	21.2	2	7.4

Etiological factors

In present study alcoholism was the main etiological factor accounting for 55 % and non-alcoholic include 45% in which 23.3% is biliary pancreatitis and 12% is idiopathic and 3% is hypertrycholestremia.

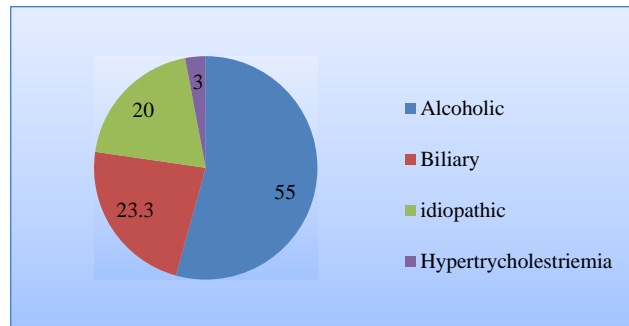


Figure 1: Etiological factors.

In present study 31.6% present with hyperglycemia in which hyperglycemia is more in alcoholic (36.6%) than non-alcoholic (25.9%), 56% of patient presented with hypocalcaemia in more in non-alcoholic (59.5%) than alcoholic (54.54%), and 35% had serum amylase level more than 600 IU/L which is more raised in non-alcoholic (37%) than alcoholic (33.3%), 11.6% has WBC count >15000 cells/mm³ which is more in alcoholic (15.1%) than non-alcoholic (7.04%) and 10% has AST level >200 mg/dl which is more in non-alcoholic (11.1%) than alcoholic (9%).

Table 6: Lab investigations in alcoholic and non-alcoholic pancreatitis.

Investigations	No. of patients (n=33)	Alcoholic %	No. of patients (n = 27)	Non-alcoholic %	Total %
RBS>180 mg/dl	12	36.36	7	25.9	31.6
S. Amylase >600IU/L	11	33.3	10	37	35
S. Calcium <8 mg/dl	18	54.54	16	59.25	56.6
WBC count >15000 cells/mm ³	5	15.1	2	7.04	11.6
AST >200mg/dl	3	9	3	11.1	10

USG examination

USG abdomen was diagnostic in 93.3 % of the patients in our study.

Severity of acute pancreatitis

In the present study 68.3% of patients had mild disease in which alcoholic cause is 40 percent and non-alcoholic cause is 28.3% .31.6 % contribute severe cases which according to Atlanta 2012 is divided into moderately severe pancreatitis and severe pancreatitis. In which moderate pancreatitis constitute 26.6 % with equal contribution from alcoholic and non-alcoholic pancreatitis and severe constitute 5 % in which alcoholic contribution is 1/3rd of non-alcoholic.

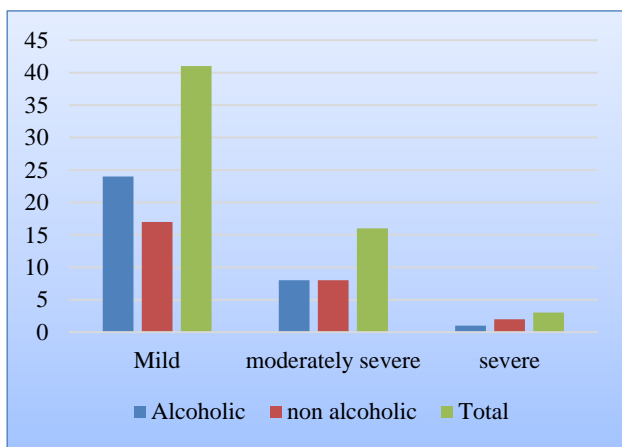


Figure 2: Patients graded according to severity of acute pancreatitis.

Complications

Although 15% of patients in the present study have ascitis which was higher compared to other studies which is more in alcoholic than non-alcoholic, the rate of pancreatic necrosis was more in other studies as against 6.6% in present study, more in non-alcoholic, pseudocyst is 13.3 in which 10% in non-alcoholic and 3.3 percent in alcoholic. Organ failure was seen 15% whereas its much higher in other studies. 1.6% (one non-alcoholic patient) has Superior mesenteric vein thrombosis, 1.6 (one alcoholic patient) has GI bleed and died. All other complications were managed conservatively.

Procedure

Seven (11.6%) patient with biliary pancreatitis underdone cholecystectomy, another patient (1.6%) with biliary pancreatitis underwent ERCP with sphincterotomy. One patient with alcoholic pancreatitis undergone necrosectomy. The other patients 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.

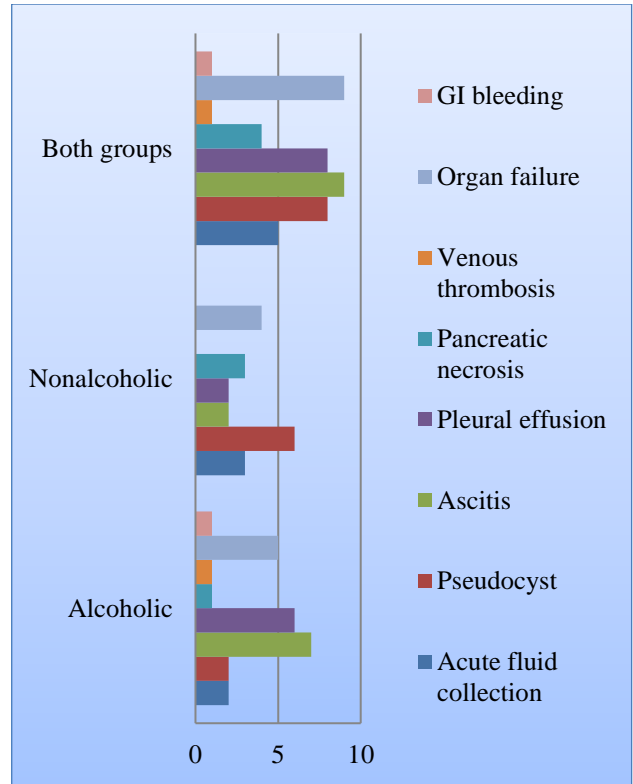


Figure 3: Complications classified.

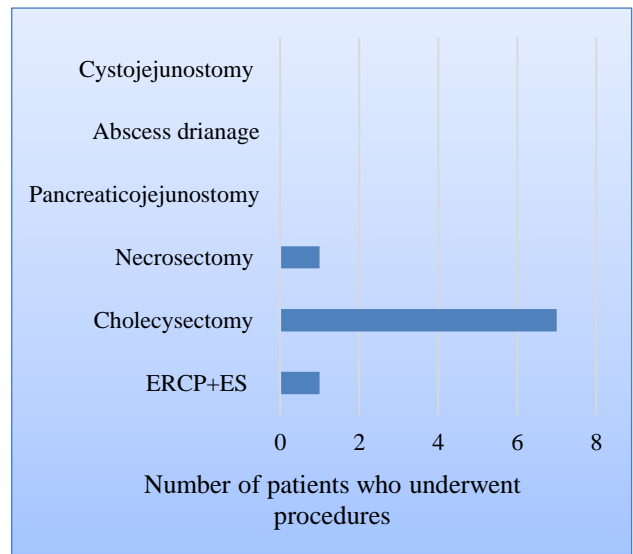


Figure 4: Procedures conducted in patients.

Patients in other studies underwent various procedures like ERCP with sphincterotomy, cholecystectomy, pancreaticojejunostomy for pancreatic fistula, cystojejunostomy for pseudocyst and open drainage of abscess.

Hospital stay

Overall hospital stay is 7.59 days. The duration of stay in mild cases being 5.78. The duration of stay in severe

cases being 9.4 days. Duration is almost comparable in alcoholic and non-alcoholic cases.

Table 7: Mean hospital stay.

Mean hospital stay	Present study	Alcoholic	Non-alcoholic
Mild disease	5.78 days	5.61 days	5.97 days
Severe disease	9.4 days	9.49 days	9.31 days

Mortality

The mortality rate in the present study at 3.3%. One patient died of GI bleeding (alcoholic) and other died of sepsis with MODS (non-alcoholic).

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. In this study, analysis of clinical presentation of acute pancreatitis was done. Relevant investigations were carried out and patients appropriately managed depending upon the etiology and severity of acute pancreatitis.

Age

The mean age of presentation in the present study was 39.2 years and in alcoholic it was 39.42 (33/60), and non-alcoholic it was 39.07 years and is comparable with study of, Buchler et al, kashid et al and choudhuri et al other studies has a late presentation.⁵⁻⁷

Sex

There was a male predominance in the present study with males accounting for 90 percent in which 61.1% are alcoholic and 38.9 percent is non-alcoholic. The other studies Kashid et al, Buchler et al, Pupelis et al although had a higher percentage of males the ratio of male to female ratio is low then the present study 9:1 male to female ratio.⁸

Etiology

Alcohol was the main etiological factor in our study and present in about 55% of patients. This was Pupelis G et al study. In the other studies gallstone was the main etiological factor. The percentage of idiopathic cases was comparable.

Clinical features

The clinical features in the present study were comparable to the study by Kashid A et al.

Serum amylase sensitivity

The sensitivity of serum amylase was 96.6% in the present study and was comparable to the study by Thomson, but in the study by Kashid A et al it was 50.9% sensitive and this can be attributed to the early presentation of patients to our institution.⁸

Accuracy of USG abdomen

USG was diagnostic in 93.3% of patients in the present study and this was comparable to the study by Ammori et al.⁹ It was diagnostic in 66.67% of patients in the study by Kashid A et al and this may be because USG is operator dependent and also because the view can be obscured by overlying bowel gas.

Severity of acute pancreatitis

68.3% of patients had mild disease in our study in which alcoholic cause is 40 percent and non-alcoholic cause is 28.3% whereas studies have higher proportion of severe diseases. 31.6% contribute severe cases which according to Atlanta 2012 is divided into moderately severe pancreatitis and severe pancreatitis.

In which moderate pancreatitis constitute 26.6% with equal contributions from alcoholic and non-alcoholic pancreatitis. And severe constitute 5% in which alcoholic contribution is 1/3rd of nonalcoholic. Ours is a government funded institute and most of the patients belonging to low socioeconomic status with acute pain refereed, and this may be the reason for less percentage of severe cases.

Complications

Although 15% of patients in the present study have ascites which was higher compared to other studies which is more in alcoholic than non-alcoholic, the rate of pancreatic necrosis was more in other studies as against 6.6% in present study, in non-alcoholic, pseudocyst is 13.3 in which 10% in non-alcoholic and 3.3 percent in alcoholic. Organ failure was seen 15% whereas its much higher in other studies and this is because most of our patients had mild disease.

Procedure

7 (11.6%) patient with biliary pancreatitis undergone cholecystectomy, another patient (1.6%) with biliary pancreatitis underwent ERCP with sphincterotomy. The other patients were managed conservatively. This low rate of intervention in the present study was because, majority of our patients had mild disease, and also because alcohol was the most common etiology. Patients in other studies underwent various procedures like ERCP with sphincterotomy, cholecystectomy, pancerticojejunostomy for pancreatic fistula,

cystojejunostomy for pseudocyst and open drainage of abscess.

Duration of hospital stay

The duration of stay in mild cases being 5.78 is comparable to the other studies. The duration of stay in severe cases being 9.4 days was less compared to other studies Kashid et al.

Mortality

The mortality rate in the present study at 3.3% is less compared to studies as the percentage of severe cases was more in 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 our study. Non-alcoholic pancreatitis contributes to a significant proportion of etiology of pancreatitis. Unless dealt with judiciously, they lead to recurrent episodes of pancreatitis and accompanying comorbidities. Prompt identification and diagnostic work up to identify the etiology of pancreatitis followed by appropriate treatment results in cure and prevention of untoward complications.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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