www.jmscr.igmpublication.org
Impact Factor 5.84
Index Copernicus Value: 71.58
ISSN (e)-2347-176x ISSN (p) 2455-0450
crossref DOI: https://dx.doi.org/10.18535/jmscr/v5i10.09

IGM Publication
Journal Of Medical Science And Clinical Research
An Official Publication Of IGM Publication

Clinical Study of Acute Pancreatitis

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Abstract
Acute pancreatitis is a common condition involving the pancreas. 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.
Aims and Objectives: *1. To study the age and sex prevalence of acute pancreatits.2.To study the various etiological factors of pancreatitis.3. To study the clinical presentation and outcome of pancreatitis.*
Methodology: *Patients admitted to the department of general medicine at KMC/MGM Hospital, Warangal were taken up for the study. Totally 100 patients of acute Pancreatitis were studied from august 2015 to august 2017.*
Observations & Results: *This is a prospective clinical study consisting of 100 cases of acute pancreatitis out of which 93 are male and 7 female patients. In our study 100% of the patients presented with pain abdomen, 92% with nausea/vomiting, 36% with abdominal distension, 24% with fever and 8% with jaundice. In our study 100% of the patients had tenderness, 4% had pseudocyst presenting as mass abdomen, 22% had ascites, and 12% of the patients presented in shock, 8% had haemetemesis. In our study alcoholism is the commonest aetiological factor which accounts for 76% followed by biliary cause in 16%.*
Conclusion: *There was a male preponderance with 93% of the total patients being males Patients in the 3rd decade were commonly affected. Alcohol is the most common cause of acute pancreatitis, found in 76% of the patients.*
Keywords: *acute pancreatitis, alcohol, gall stones.*

Introduction

Acute pancreatitis is a common condition involving the pancreas. The estimated incidence is about 3% of cases presenting with pain abdomen in the UK. 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.

Alcohol is the most common etiology in a study from Finland. The two most common causative factors associated with acute pancreatitis are biliary disease and alcohol abuse. These two factors together account for greater than 80% of all patients with acute pancreatitis, with biliary disease accounting for 45% and alcohol found in 35% of patients. Idiopathic cases, which may

constitute 20% to 25% of all cases in some prospective studies, can largely be ascribed to a biliary cause.Anatomy of pancreas.

The name 'pancreas' is derived from the Greek, 'pan' means all and 'kreas' means flesh. The pancreas is a soft, lobulated greyish pink, gland measuring 12-15 cm in length and weighs about 80gm and lies posterior to the stomach.

The pancreas is divided into following portions

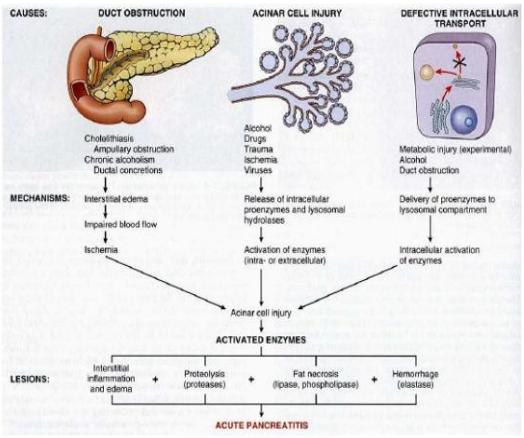
- The head is the largest part of the pancreas and it is nestled in the C-loop of the duodenum.
- The uncinate process of the pancreas is an extension of the head.
- Neck is the smallest named part of the pancreas.
- Body - The neck continues to the left as the body of the pancreas.
- Tail - The tail of the pancreas is the continuation of the body.
- The pancreas is organized into exocrine and endocrine units represented by acini and islets of Langerhans, respectively.

Etiopathogenesis

The two most common causative factors associated with acute pancreatitis are biliary disease and alcohol abuse. These two factors together account for greater than 80% of all patients with acute pancreatitis, with biliary disease accounting for 45% and alcohol found in 35% of patients

- Gallstones
- Alcoholism
- Hypertriglyceridemia
- Post–endoscopic retrograde cholangiopancreatography
- Idiopatic (Microlitiasis 57%)
- Drug induced: Azathioprine, 6-Mercaptopurine, Trimethroprimsulfam-ethoxazole, Pentamidine, 2,3 Dideoxyinosine, Asparginase, Methyldopa
- Autoimmune
- Genetic
- Abdominal trauma
- Postoperative Ischemia Infections
- Hypercalcemia and hyperparathyroidism
- Posterior penetrating ulcer
- Scorpion venom
- Pancreas divisum

Figure 1 Three proposed pathways in the pathogenesis of acute pancreatitis



Aims and Objectives

1. To study the age and sex prevalence of acute pancreatits.
2. To study the various etiological factors of pancreatitis.
3. To study the clinical presentation and outcome of pancreatitis.

Method of Collection of Data

After admission to the hospital, a detailed clinical history and examination of the patient was done. Relevant investigations were undertaken to make the diagnosis.

Four sequential steps have been followed.

1) Establishing the diagnosis of pancreatitis, excluding other abdominal conditions that have similar clinical features,
2) Identify the presence of biliary tract disease, excluding other possible etiologies of the acute pancreatitis,
3) Assess the severity of the disease,
4) Detect any complications.

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.

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.
- 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

Observations & Results

This is a prospective clinical study consisting of 100 cases of acute pancreatitis out of which 93 are male and 7 female patients.

Table 1: Age and sex distribution

Age group	Male n= 93	percentage	Female n = 7	percentage	Total n = 100	percentage
13-20	1	1.07%	0	o	1	1%
21-30	16	17.2%	2	28.5%	18	18%
31-40	58	62.3%	4	57.1%	62	62%
41-50	10	10.7%	1	14.2%	11	11%
51-60	8	8.6%	0	0	8	8%
61-70	0	0	0	0	0	0

Table 2: Symptomatology

symptoms	No. of pts	percentage
Pain abdomen	100	100%
Nausea/vomiting	92	92%
Abdominal distension	36	36%
Fever	24	24%
jaundice	8	8%

In our study 100% of the patients presented with pain abdomen, 92% with nausea/vomiting, 36% with abdominal distension, 24% with fever and 8% with jaundice.

Table 3 : SIGNS

signs	No of patients	percentage
Epigastric tenderness	100	100%
Mass abdomen	4	4%
ascites	22	22%
shock	12	12%
Haematemesis	8	8%

In our study 100% of the patients had tenderness, 4% had pseudocyst presenting as mass abdomen, 22% had ascites, and 12% of the patients presented in shock, 8% had haemetemesis

Table 4 : Etiological Factors

Etiology	No. of patients	percentage
Alcoholism	76	76%
Biliary	16	16%
Drug induced	2	2%
Autoimmune	4	4%
Idiopathic	2	2%

In our study alcoholism is the commonest aetiological factor which accounts for 76% followed by biliary cause in 16%.

Table 5 : Investigations

Investigations	Elevated	percentage
RBS> 180	24	24%
BUN> 45	16	16%
Amylase > 240	82	82%
Lipase > 150 u/l	94	94%
WBC > 15,000	8	8%
AST > 200	8	8%
Hct> 44%	22	22%
Calcium < 8	24	24%

In our present study 24% of patients presented with hyperglycemia, 16% had raised blood urea nitrogen (BUN), 24% had hypocalcemia, 8% had a WBC count of more than 15,000cells/mm3, and 8% of the patients had elevated AST levels. 82% of the patients had S.Amylase levels more than three times normal i.e.>240 IU/L.

Table 6 : USG examination

USG	No. of patients	percentage
Diagnostic	64	64%
Non diagnostic	36	36%

USG Abdomen was diagnostic in 64% of the patients in our study.

Table 7: severity of pancreatitis

Severity	No of patients	percentage
Mild	78	78%
Severe	22	22%

In our study 22 (22%) patients developed various complications enumerated above and were classified as severe acute pancreatitis and rest 78 (78%) patients had no complications and/or suffered from transient organ dysfunction and were classified as mild acute pancreatitis.

Table 8 : Complications

Complications	No. of patients	percentage
pseudocyst	12	12%
Ascites	16	16%
Pleural effusion	20	20%
Pancreatic necrosis	12	12%
Venous thrombosis	4	4%
GI bleeding	8	8%
Organ failure	8	8%

In our study of the total patients developing complications, 12 (12%) had pseudocyst, 16 (16%) had ascites, 20 (20%) had pleural effusion, 12 (12%) had pancreatic necrosis, 4 (4%) had superior mesenteric vein thrombosis, 8 (8%) had GI bleed and 8 (8%) had organ failure. All the complications were conservatively managed except for one patient with bilateral pleural effusion for whom bilateral intercostal drainage was done. The patient with superior mesenteric vein thrombosis was discharged against medical advice and 2 patients with GI bleed died.

Discussion

Acute pancreatitis is a common disease entity. While diagnosing a case of acute pancreatitis, a through 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 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 and 6th decade. This is probably because alcohol was the main etiological factor in our study which presents usually in the younger age group.

Table 9 : comparision of age

Mean age	Kashid A et al[7]	Choudhuri G et al[6]	Pupelis G et al[11]	Buchler MW et al[12]	Present Study
Age in years	35	44.89	47	55.1	38.1

Sex

There was a male predominance in our study with males accounting for 93% of Patients. The other studies although had a higher percentage of males. This again could be attributed to alcohol which was the main etiologic agent.

Table 10 : Comparision of sex

Mean age	Kashid A et al[7]	Choudhuri G et al[6]	Pupelis G et al[11]	Buchler MW et al[12]	Present Study
Males	70.91%	66.6%	73.7%	61%	93%
Females	20.09%	33.4%	26.3%	39%	7%

Etiology

Alcohol was the main etiological factor in our study and present in about 76% of patients. This was comparable to the study by Sand J et al[14] at Finland. In the other studies gall stone was the main etiological factor. The percentage of idiopathic cases was comparable.

Table 11 : Comparision of etiology

ETIOLOGY	Kashid A et al[7]	Choudhuri G et al[6]	Pupelis G et al[11]	Buchler MW et al[12]	Sand j et al[14]	Present study
Alcoholism	29.1%	45.83%	54%	33%	70%	76%
Billiary	36.4%	26.04%	19%	45%	20%	16%
Idiopathic	14.5%	19.37%	37%	10%	27%	2%

Clinical Features

The clinical features in the present study were comparable to the study by Kashid A et al[7].

Table 12 : comparision of clinical features

Clinical features	Kashid et al[7]	Present study
Pain abdomen	92.73%%	100%
Nausea/vomiting	60%	92%
Abd. distension	16.36%	36%
Fever	20%	24%
jaundice	7.27%	8%

Serum Amylase Sensitivity

The sensitivity of serum amylase was 62% in the present study and was comparable to the study by Kashid A et al[7]. But in the study by Thomson et al[15] 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.

Table 13: Comparision of serum amylase sensititvity

Serum amylase	Kashid et al[7]	Thompson et al[15]	Present study
sensitivity	54.7%	95.6%	62%

Accuracy of USG Abdomen

USG was diagnostic in 64% of patients in our study and this was comparable to the study by kashid et al[7]. It was diagnostic in 66.67% of patients in the study by Kashid A[7] and this may be because USG is operator dependent and also because the view can be obscured by overlying bowel gas.

Table 14: Comparision of accuracy of USG abdomen

USG abdomen	Ammori et al[13]	Kashid et al[7]	Present study
Diagnostic	86%	66.67%	64%
Non diagnostic	14%	33.33%	36%

Severity of Acute Pancreatitis

78% of the patients had a mild disease in our study where as the other studies had a higher proportion of severe disease. Ours is a tertiary care centre where most of the patients are referred after initial management, hence this may be the reason for less severity of cases

Table 15 : Comparision of severity of pancreatitis

Severity	Kashid et al[7]	Choudary G et al[6]	Buchler MW et al[12]	Present study
Mild disease	52.73%	47.7%	58%	78%
Severe disease	47.27%	52.3%	42%	22%

Complications

Although 16% 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 12% in our study. Organ failure was seen in 16% of our patients whereas it was much higher in other studies and this is because most patients in our study had mild disease.

Table 16 : Comparision of complications

complications	Kashid et al[7]	Choudary G et al[6]	Buchler MW et al[12]	Present study
GI bleeding	1.8%	3.1%	0	4%
pseudocyst	0	24.9%	2.45%	12%
Ascites	0	-	-	16%
Pleural effusion	34.54%	-	-	20%
Pancreatic necrosis	18.18%	40.5%	42.15%	12%
Venous thrombosis	0	0	0.5%	4%
Organ failure	29%	40.5%	36.28%	16%

Summary& Conclusion

Summary

A total of 100 patients of acute pancreatitis were admitted in the department of medicine at KMC/MGM Hospital Warangal from august 2015 to 2017. The purpose of the present study was to evaluate the age and sex prevalence, the varied presentation, various diagnostic modalities and outcome of acute pancreatitis. The findings of this study were compared with those available in literature. The observations of our study are summarized below.

There was a male preponderance with 93% of the total patients being males Patients in the 3rd decade were commonly affected.

The most common presentation was pain abdomen mainly situated in the epigastric region, radiating to back and associated with nausea and vomiting.

Alcohol is the most common cause of acute pancreatitis, found in 76% of the patients.

Most common modality of investigation was serum amylase and USG Abdomen with serum amylase diagnostic in 62% and USG diagnostic in 64% of the patients.

CT Abdomen was reserved for patients with diagnostic dilemma, severe pancreatitis and in patients with no clinical improvement even after 72 hours.

78% of the patients had a mild attack of acute pancreatitis and 22% of them had a severe attack.

Initial management included adequate fluid resuscitation, adequate analgesia and nutritional support.

Nasogastric decompression was advocated if there was significant nausea/vomiting or if patient had ileus.

Total of 20 (20%) patients developed complic-ations 12 (12%) had pseudocyst, 16 (16%) had ascites, 20 (20%) had pleural effusion, 12 (12%) had pancreatic necrosis, 4 (4%) had superior mesenteric vein thrombosis, 4 (4%) had GI bleed and 16 (16%) had organ failure. All of them were managed conservatively.

There were 4 recurrences during the study period.

The mean hospital stay was 5.2 days for mild and 16.7 days for severe pancreatitis.

2 patients died due to upper gastro intestinal bleed.

Conclusion

Acute pancreatitis is a common cause of acute abdomen in patients presenting to the medical 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 3rd 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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