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Original Research Article

A Study of Clinical Profile in Acute Pancreatitis and its Management

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Abstract: Acute pancreatitis remains a common disorder with devasting consequences. Although most episodes are mild and self-limiting, upto one fifth of patient develop a severe attack that can be fatal. Inspite 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 and management of acute pancreatitis. It is a cross sectional study conducted in our hospital Basaveshwara teaching and general hospital-Kalaburagi attached to Mahadevappa Rampure medical college during the study period from Dec 2014-june 2016. 65 consecutive acute pancreatitis cases were analysed. The study includes a total of 65 patients of acute pancreatitis, 60 males and 5 females. The peak incidence in male and in female was 3rd decade in life. Alcohol accounts 84.6% total cases where as gall stone and idiopathic contributes 6.1 % each. Serum lipase is more sensitive than serum amylase. Systemic complications were diagnosed by routine blood investigation, RFT, LFT, serum calcium and chest x ray. Local complications were diagnosed by USG abdomen and CT scan. Total 36 patients had complications and 29 do not have any complications. Among complicated patients 14 had both local and systemic complication, whereas 22 had only local complications. Systemic complications were managed with supportive and conservative measures. Local complications were managed with conservative and operative measures. Multi-organ failure was the most common cause of death. Acute pancreatitis is one of the common differential diagnosis of acute abdomen specially alcoholics and biliary disease. Patients with acute pancreatitis should be evaluated clinically, biochemically and radiologically as this condition associated with severe systemic and local complications . Scoring systems are helpful in assessing the severity of pancreatitis and planning of treatment. Most of the acute Pancreatitis including severe pancreatitis was successfully managed with conservative measures.
Keywords: Acute pancreatitis, serum amylase & lipase, Multi organ failure.

INTRODUCTION

Acute pancreatitis is a common disorder. It has been noticed in most of the studies that there is in an increase in the incidence of disease by a factor of 10 in the past 3 decades. The reason for the increase is speculated to be due to increase in alcohol abuse and an improved ability to diagnose the disease. But the disease has been a cause of significant morbidity and mortality.

Diagnosis remains clinical and can be supported by 1.5 —2 fold increase above the upper limit of normal of serum amylase [1]. But an estimation of serum lipase, trypsinogen or iso-amylase assay is confirmatory and will increase the diagnostic yield. Supportive radiological procedures are ultrasonography, computed tomography and MRI. Currently CECT is the imaging modality of choice where areas of hypo perfusion correlate with necrosis [2].

The treatment of acute pancreatitis is largely supportive. Patient with mild disease are treated by eliminating oral intakes, instituting intravenous hydration and providing frequent parenteral analgesia. Uses of antibiotics and drugs, which reduce the pancreatic secretion, have been studied extensively [3]. For practical purpose no specific non-operative measure has yet been shown to improve the outcome in acute pancreatitis. In the surgical management there are various diagnostic, prophylactic and therapeutic options available for both the disease process and its complication but none of them have shown to improve the outcome in acute pancreatitis.

AIMS & OBJECTIVES OF THE STUDY

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 and management of acute pancreatitis.

MATERIALS AND METHODS

Source of data

The study group has evaluated 65 consecutive patients with clinical, biochemical and radiological diagnosis of acute pancreatitis admitted to hospital attached to MR MEDICAL COLLEGE - KALABURAGI between Dec. 2014 to June 2016.It is a cross sectional study

Inclusion Criteria

- All patients with acute pancreatitis aged above l2 years

Exclusion Criteria

- Age below 12 years
- Patients with chronic pancreatitis, acute on chronic pancreatitis

Method of Collection of Data

All the patients were evaluated thoroughly at the time of admission and frequently in those who showed deterioration in their clinical status to find out associated local/ systemic complication.

The patients are evaluated as follows

- 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 (>l000mg/dl taken as diagnostic).
- After doing all available investigation if no cause was found, considered as idiopathic pancreatitis
- Severity of assessment done with Atlanta 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/MRI 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.
- Patients were informed about any surgical procedure and consent was taken for the same.

Patient data collected regarding

Age, gender, complaints, aetiology, history of alcoholism, calculus cholecystitis, trauma to abdomen etc. were evaluated. Patients were examined in detail. Blood investigations x-ray and other radiological modalities performed were added. Complications if developed during the course of treatment and later on were assessed in detail. Management of these complications was assessed in detail.

Follow-up of patients

All the patients were followed up regular interval and follow up period for all the patients were uneventful.

STATISTICS

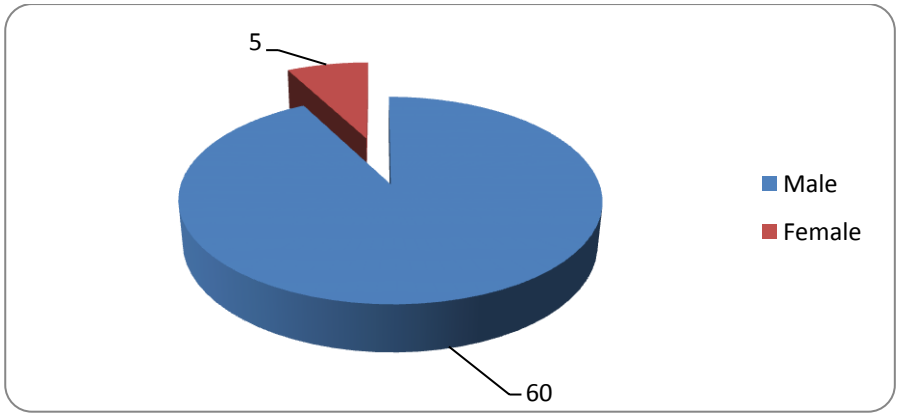
Data was processed using excel software programme observation are represented as Bar diagram and Pie chart.

RESULTS

A total of 65 consecutive patient of acute pancreatitis were entered in the study group. All had an admission diagnosis of acute pancreatitis and satisfied the inclusion criteria.

SEX DISTRIBUTION

Out of 65 patients 60 (92.3%) were male and 5 (7.69%) were female. Sex ratio is 12:1. In our present study, we had a male predominance.



Graph-1: Sex distribution

AGE DISTRIBUTION

The peak incidence was in the 3th decade in male (58.3%) and 3rd decade in female (60%). The mean age group in our study is 36.58years.

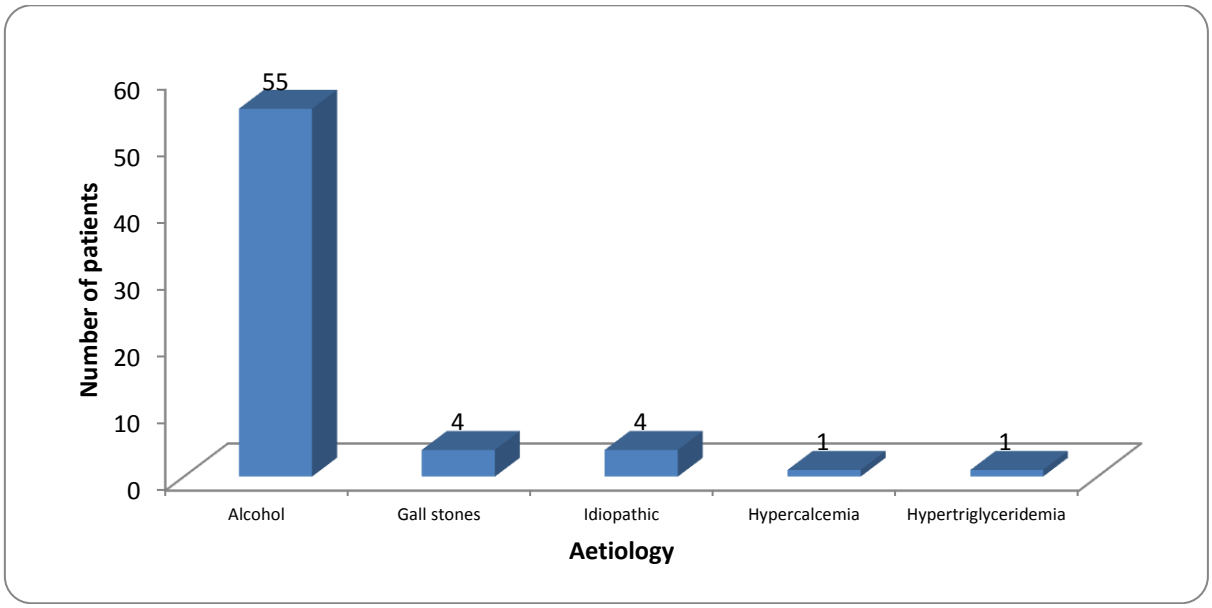
The table-1 shows analysis of age and sex distribution, in our study, the youngest was 2lyears old and eldest was 70 years old.The highest incidence was noted in the age group of 31-40 years, accounting for 58.46% of patients.

Table-1: Age distribution

Age Group in years (N=65)	MALE(60)		FEMALE(5)		Total (65)	
	No	%	No.	%	No.	%
13-20	00	00	00	00	00	00%
21-30	10	16.67	00	00	10	15.38
31-40	35	58.3	03	60	38	58.46
41-50	10	16.67	01	20	11	16.92
51-60	04	6.67	01	20	05	7.69
61-70	01	1.67	00	00	01	1.53
71-80	00	00	00	00	00	00

AETIOLOGY

The history of alcohol consumption and like hood of it being the aetiological factor was in 55(84.6%) patients. While gallstones and idiopathic were implicated in 4(6.1%) patients each, hypertriglyceridemia in 1(1.5%), Hypercalcemia in 1(1.5%).



Graph-2: Aetiology

CLINICAL FEATURES

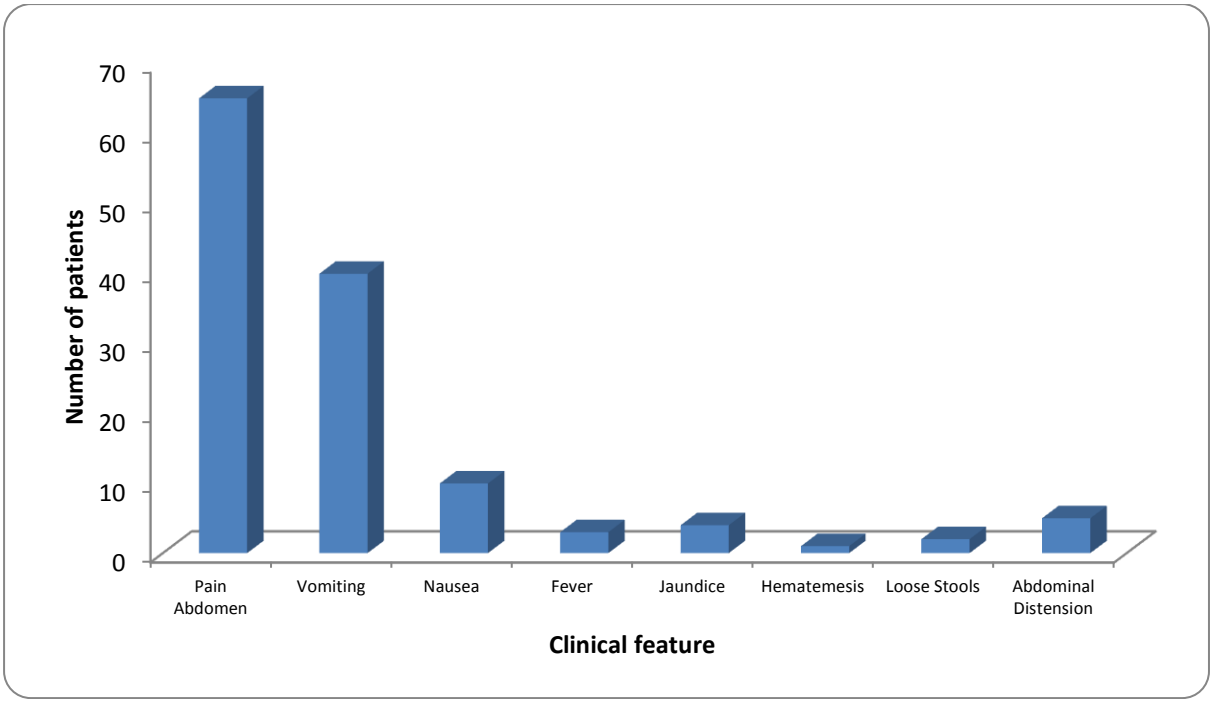
Pain abdomen was the presenting complaint in almost the entire 65 patients. Other clinical features include vomiting in 40, nausea in 10, and jaundice in 04, loose stools in 2 and hematemesis in 1 and Abdominal Distension in 5 patient and fever in 3.

INVESTIGATIONS

In our present study 80% of the patients had S.Arnylase levels more than 3 times normal i.e. >2401U/L and 96.9% of the patients had S.Lipase levels more than 4 times normal i.e. >3201U/L.

Table-2: Laboratory Investigations

Investigations	No of patient (n=65)	Percentage %
S. amylase(>240 U/L)	52	80%
S. lipase (>320U/L)	63	96.9%



Graph-3: Clinical Feature

USG EXAMINATION

Out Of 65, USG Abdomen was diagnostic in 93.8% (6lPatients) of the patients in our study.

Table-3: USG Examination

USG	No of patient (n=65)	Percentage %
Diagnostic	61	93.84
Non- Diagnostic	4	6.15

CECT EXAMINATION

Out Of 65, 60 patients were underwent CECT examination. Remaining 5 patient's CECT was not done due to persistent renal failure.

CECT was diagnostic in 92.30% (60) of the patients in our study.

Table-4: CECT

CECT	No of patient (n=65)	Percentage %
Diagnostic	60	92.30%
Non- Diagnostic	5	7.69%

COMPLICATIONS

All the 65 patients evaluated Clinically, Biochemically and Radio logically and found to have only local complications in 22 patients and local + systemic complications in 14 patients. 29 remaining patients do not had any complications

Table-5: Complications

COMPLICATION	No of patient (n=65)
Only local	22
Local + systemic	14

Table-6: Local Complications

Local Complications	No of patient (n=65)	Percentage %
Pancreatic ascites	36	55.38
Pancreatic necrosis	05	7.69
Pseudocyst	02	3.07
Plueral effusion	20	30.76

Table-7: Systemic Complications

Systemic complications	No of patient (n=65)	Percentage %
Hypovolemic(shock)	02	3.07%
Hyperkalaemia	05	7.69%
Hypocalcaemia	01	1.53%
Hyperglycaemia	05	7.69%
Acute Renal Failure	11	16.92%
ARDS	10	15.38%
UPPERG1B1eeding	01	1.53%
Septicaemia	01	1.53%

In our study of the total 36(55.38%) patients developed complications, in that 22 patients developed only local complications whereas 14 patients developed systemic as well as local complications in combination

SEVERITY [4]

Atlanta classification defines three degrees of severity: mild acute pancreatitis, moderately severe acute pancreatitis, and severe acute pancreatitis.

Transient organ failure is defined as organ failure that is present for <48 h.

Persistent organ failure is de need as organ failure that persists for >48 h.

Mild acute pancreatitis-Mild acute pancreatitis is characterised by the absence of organ failure and the absence of local or systemic complications.

Moderately severe acute pancreatitis-Moderately severe acute pancreatitis is characterised by the presence of transient organ failure or local or systemic complications in the absence of persistent organ failure.

Severe acute pancreatitis- Severe acute pancreatitis is characterised by persistent organ failure. Persistent organ failure may be single or multiple organ failure.

Table-8: Severity

Severity	No of patient (n=65)	Percentage %
Mild	29	44.61%
Moderate	28	43.07%
Severe	08	12.30%

Patients were divided into three degrees of severity as per Atlanta classification.

In our study 29 (44.61%) patients were developed mild pancreatitis, 28(44.61%) moderate pancreatitis and 8(12.30%) severe pancreatitis.

MANAGEMENT

61 patients (93.84%) in our study managed conservatively. 4 were treated surgically by 2 cholecystectomy and 2 cysto-gasrostorny

Table-9: Management

Management	No of patient (n=65)	Percentage %
Conservative	61	93.84%
Surgical	04	6.15%

In our study conservative management includes

- Fluid management: The average fluid requirement was 3.5L/day. IV fluid includes RL, NS and DNS .The total amount of IV fluid require to maintain hemodynamic stability was assessed by calculating the amount of fluid require to maintain
- BP-MAP >60 mmHg
- Urine output at least 1 ml/kg/body wt./ Hr
- All the patients were kept NPO with nasogastric tube for about 2-3 days till the patients settled down followed by liquid and soft diet.
- Analgesic - i.v tramadol were given to all patients.
- Antibiotics- 3rd generation cephalosporin (cefotaxime Ig BD) was given to all general ward patients. All the patients responded well.
- Patients with severe pancreatitis were managed by imipenem+cilastatin I gram BD for 7 days.
- PPI- pantoprazole 40 mg BD IV was given to all patients.
- Patients with symptomatic hypocalcaemia were given i.v 10 ml of 10% calcium glucanate.
- In patients with persistent renal failure haemodialysis was done.
- In patients with severe ARDS ventilatory support was given.
- Repeated USG guided peritoneal aspiration was done for persistent pancreatic ascites.
- Pseudo cyst which were not resolving with repeated USG guided aspiration treated surgically (Cystogastrostomy)

HOSPITAL STAY

Mean hospital stay in our study was 8 days

Table-10: Hospital Stay

Hospital Stay number of days	No of patient (n=65)
0-3 DAYS	23
4-6 DAYS	07
7-9 DAYS	30
>10	05

OUTCOME

Out of 65 patients, 64patients were improved, I patients died due to multi- organ failure.

Table-11: Outcome

Outcome	No of patient (n=65)	Percentage %
Improved	64	98.46%
Death	01	1.53%

DISCUSSION

Acute pancreatitis is a common disease entity. The early identification of potentially severe acute pancreatitis enables the selection of patients who may require more intensive and invasive method of management than are appropriate in mild pancreatitis.

While diagnosing a case of acute pancreatitis, a through history, a complete physical examination and biochemical tests are necessary. Radiological conformation may require. In this study, analysis of clinical presentation of acute pancreatitis was done. Relevant investigations were carried out and appropriately managed depending upon the aetiology severity of acute pancreatitis.

COMPARISON OF AGE

The mean age of presentation in our study was 36.5 8years and is comparable to the study by Kashid A *et al*. 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-12: Comparison of age

Mean age	Kashid A *et al.* [5]	Choudhuri G *et al.* [6]	Pupelis G *et al.* [7] (n=274)	Our study (n65)
Mean age in years	35	44.89	47	36.58

COMPARISON OF SEX

There was male predominance in our study with males accounting for 92.3% of patients with M: F ratio 12:1. Out of 65patients 60 (92.3%) were male and 5 (7.69%) were female. The other studies also had a higher percentage of males. This could be attributed to alcohol which was the main etiologic agent in our society.

Table-13: Comparison of sex

Sex	Kashid A *et al.*	Choudhuri G *et al.*	Pupelis G *et al.* (n=274)	Our study (n65)
Male (%)	70.91	66.6	73.7	92.3%
Female (%)	29.09	33.4	26.3	7.69%

COMPARISON OF AETIOLOGY

Alcohol was the main etiological factor in our study and present in 84.6% of patients. This was comparable to the study by sand J at Finland [8]. In the other studies gall stone was the main etiological factor. The percentage of idiopathic cases was comparable.

Table-14: Comparison of Aetiology

Aetiology	Buchler MW *et al.* [9] (n=86)	Pupelis G *Et al.* (n=274)	Sand J *et al.* [8] (n=1000)	Our study (n65)
Alcohol (%)	33	54	70	84.6%
Gallstone (%)	45	19	20	6.1%
Idiopathic (%)	22	27	10	6.1%

COMPARISON OF CLINICAL FEATURES

Pain abdomen was the presenting complaint in all the patients, this was comparable to the study by Kashid A *et al*. [5], other clinical features were comparable.

Table-15: Comparison of Clinical Features

Clinical feature	Kashid A *et al.*	Srinivasarao *et al.* [10] (n=55)	Our study (n65)
Pain Abdomen (%)	92.73	78	100%
Vomiting(%)	60	85.4	61.5%
Nausea(%)	25	18	15.3%
Fever (%)	20	20	4.6%
Jaundice (%)	7.27	16.3	6.1%
Hernatemesis (%)	4	1	1.5%
Loose Stools (%)	0	0	3%
Abdominal	16.36	18.1	7.6%

SERUM AMYLASE SENSITIVITY

The sensitivity of serum amylase was 80% in the present study and was comparable to the study by Koizumi M et al which was 95.6% sensitive.

Table-16: Comparison of Serum Amylase Sensitivity

S. amylase	Kashid A *et al.* [5]	Koizumi M *et al.* [11]	Our study (n65)
Sensitivity (%)	50.9	95.6	80%

SERUM LIPASE SENSITIVITY

The sensitivity of serum lipase was 96.9% in the present study and was comparable to the study by James. P. Corsetti *et al*. which was 98% sensitive.

Table-18: Comparison of Serum lipase Sensitivity

S. Lipase	Koizumi M *et al.* [11]	James.P.Corsetti *et al.* [12] (n=450)	Our study (n65)
Sensitivity (%)	100	98%	96.9%

ACCURACY OF USG ABDOMEN

USG was diagnostic in 93.8% of patients in our study and this was comparable to the study by Ammori *et al*. it was diagnostic in 66.67% of patients in the study by Kashid *et al*. [5] and this may be because USG is operator dependent and also because the view can be obscured by overlying bowel gas.

Table-19: Comparison of Accuracy of USG Abdomen

USG Abdomen	Kashid *et al.* [5]	Ammori BJ *et al.* [13] (n=68)	Our study (n=65)
Diagnostic (%)	66.6	86	93.8%
Non Diagnostic (%)	33.4	14	6.15%

ACCURACY OF CECT SCAN

CECT was diagnostic in 92.3% of patients in our study and this was comparable to the study by Gislason H *et al*.

Table-20: Comparison of Accuracy of CECT scans

CECT	Georgios I P *et al.* [14] (n-185)	Gislason H *et al.* [15] (n=181)	Our study (n65)
Diagnostic (%)	85.7	92	92.3%
Non Diagnostic (%)	14.3	8	7.6%

COMPARISON OF COMPLICATIONS

Although 55.3% of patients in the present study had ascites which was higher compared to other studies, the rate of pancreatic necrosis, Plueral Effusion was comparable to the study by Kashid A *et al*. [5].

Table-21: Comparison of Complications

Local Complications	Buchler MW *et al* (n=86)	Kashid A *et al.* [5]	Our study (n=65)
Pancreatic Ascites (%)	12	34.5	55.3%
Pancreatic Necrosis (%)	42.15	18.1	7.6%
Pseudo cyst (%)	2.45	0	3%
Plueral Effusion (%)	28	34.5	30.7%
Organ failure (%)	29	40.5	21.5%
UPPER GI Bleeding	1.8	3.1	1.5%

COMPARISON OF MANAGEMENT

Table-22: Comparison of Management

Management	Baig S Jet *et al.* [16] (n=45)	Srinivasarao *et al.* (n=55)	Our study (n65)
Conservative	78%	88%	93.8%
Surgical	22%	12%	6.1%

SEVERITY OF ACUTE PANCREATITIS

Out of the 65 patients, 44.6% of patients were mild, 43% moderate and 12% severe acute pancreatitis. This was comparable to the study by Lee KJ *et al*.

Table-23: Comparison of Severity of Acute Pancreatitis

Severity	Buchler MW *et al*. (n-86)	Lee KJ Et *et al*. (n=146)	Our study (n65)
Mild (%)	58	58.9	44.6%
Moderate (%)	0	29.5	43%
Severe (%)	42	11.6	12%

CONCLUSION

- Acute pancreatitis is a common acute abdominal condition. Most common in men. The peak incidence was 3rd decade in both sexes. Alcoholism is the most common etiological factor.
- Most common clinical manifestations are pain abdomen and vomiting. Serum lipase assessment (sensitivity 98%) is the gold standard diagnostic test than serum amylase (sensitivity 78%).
- USG is the initial radiological investigation for acute pancreatitis. CECT contraindicated in case of persistent acute renal failure.
- Complications are common with mild and severe acute pancreatitis, pancreatic ascites being the most common cause.
- Pseudo cyst not resolving more than 6 weeks with conservative and USG guided aspiration should be treated surgically (open).
- Multi organ failure associated with high mortality rate. Alcoholism associated with recurrent acute pancreatitis.

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