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A STUDY OF CLINICAL COURSE AND MANAGEMENT OF ACUTE PANCREATITIS BASED ON GLASGOW PROGNOSTIC SCORE

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INTRODUCTION

Acute pancreatitis is defined as an acute inflammatory process of the pancreas, with variable involvement of other regional tissues or remote organ systems.[4] It may occur as an isolated attack or recur in distinct episodes with reversion to normal histology between attacks. By definition, acute pancreatitis is reversible. It is distinguished from chronic pancreatitis by the absence of continuing inflammation, irreversible structural changes and permanent impairment of exocrine and endocrine function.

Because of the frequent emergency, multimodality presentation, difficult preoperative diagnosis and management of complications, this challenging subject is taken up for the present study in which we will be studying the clinical profile and management of acute pancreatitis in our hospital. Inspite of technical advances in medical and surgical fields acute pancreatitis remains a major cause of morbidity and mortality.2,3

AIMS & OBJECTIVES OF THE STUDY

To study the clinical course of acute pancreatitis in patients .

To asses the severity of acute pancreatitis and its management based on Glasgow prognostic score.

MATERIAL AND METHODS

It is hospital based prospective study. The study was conducted in ESIC MC PGIMSR,Bengaluru during the study period from November 2022 to November 2023 . 150 consecutive cases were analyzed.

The diagnostic criteria included atleast one of the following:

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1. Serum Amylase more than 4 times the upper limit of normal.[52]
2. Serum Lipase more than 2 times the upper limit of normal.[52]
3. Ultrasound or C.T. scan suggestive of acute pancreatitis.

INCLUSION CRITERIA

All patients with acute pancreatitis aged above 18 years admitted to surgical department, with written informed consent.

EXCLUSION CRITERIA

All patients aged below 18 years

Patients with chronic pancreatitis and acute on chronic pancreatitis

On admission history was collected and thorough physical examination done. Data collection on admission included age, sex, address and clinical presentation with respect to pain, vomiting, jaundice and distension of the abdomen. History of etiology with respect to alcohol, gallstones, trauma, and drugs was noted. History of previous episodes and co-morbidities was noted.

During the first 48 hours, patients were stratified according to the Glasgow criteria as recommended by the U.K. Guidelines.[52] All investigations were not done in patients who already had a Glasgow score equal to or more than 3; also investigations were not repeated in patients who were obviously improving and not affordable.

No steps were taken to suggest changes in decisions made by the treating unit regarding investigations or treatment. Patients with complications and operated patients were managed in the ICU by a team of intensivists

On discharge or death, patients were stratified into mild or severe according to the Glasgow criteria.[4] Data was collected on complications, investigations and interventions undertaken, outcome, duration of stay in hospital and ICU and mode of nutritional support. Prediction of severity by Glasgow criteria was analysed.

Patients with mild disease were followed up on OPD basis 2 weeks and 3 months after discharge. Severe cases were followed up as per the merit of the case. Patients with biliary pancreatitis were offered laparoscopic or open Cholecystectomy as needed. Patients with alcoholic pancreatitis were urged to stop consuming alcohol and deaddiction was attempted with the help of Psychiatrist in a few cases.

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OBSERVATIONS AND RESULTS

STATISTICS

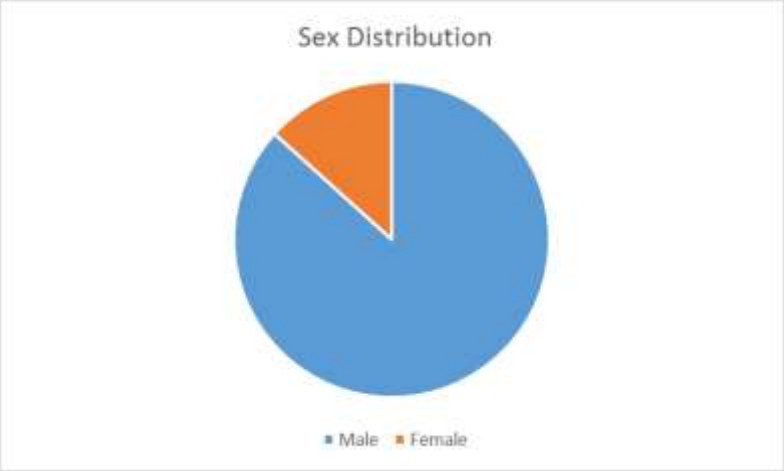
Data was collected in the proforma (Annexure I) and processed using Excel software programme. Observations are represented as bar diagrams and pie charts

A total of 150 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:

Of the 150 patients 130 (87%) were males and 20 (13%) females. With male to female ratio 6.5:1

SEX	Incidence	Percentage
Male	130	87
female	20	13



Age distribution:

The median age of the study group was 41 years (Range 26 – 56 yrs). The peak incidence was in the 3rd decade.

Age group	Male	Female
21-30	9	1
31-40	57	11
41-50	52	7
51-60	12	1

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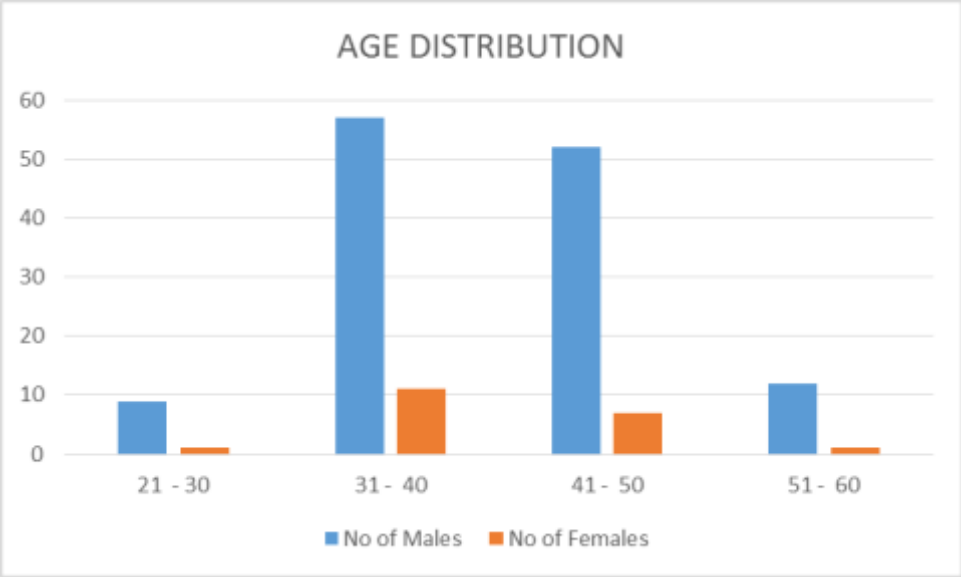

Clinical features

The commonest presentation was with pain in the abdomen and vomiting. Pain in abdomen was present in 142 (94.66 %) patients and vomiting in 116 (77.33 %) patients. Other clinical features included distention of abdomen in 24 (16%) cases, fever in 34 (22.66%) cases and jaundice in 27 (18 %) cases.

Clinical Feature	Incidence	Percentage
Pain in Abdomen	142	94.66
Vomiting	116	77.33
Distension of Abdomen	24	16
Fever	34	22.66
Jaundice	27	18

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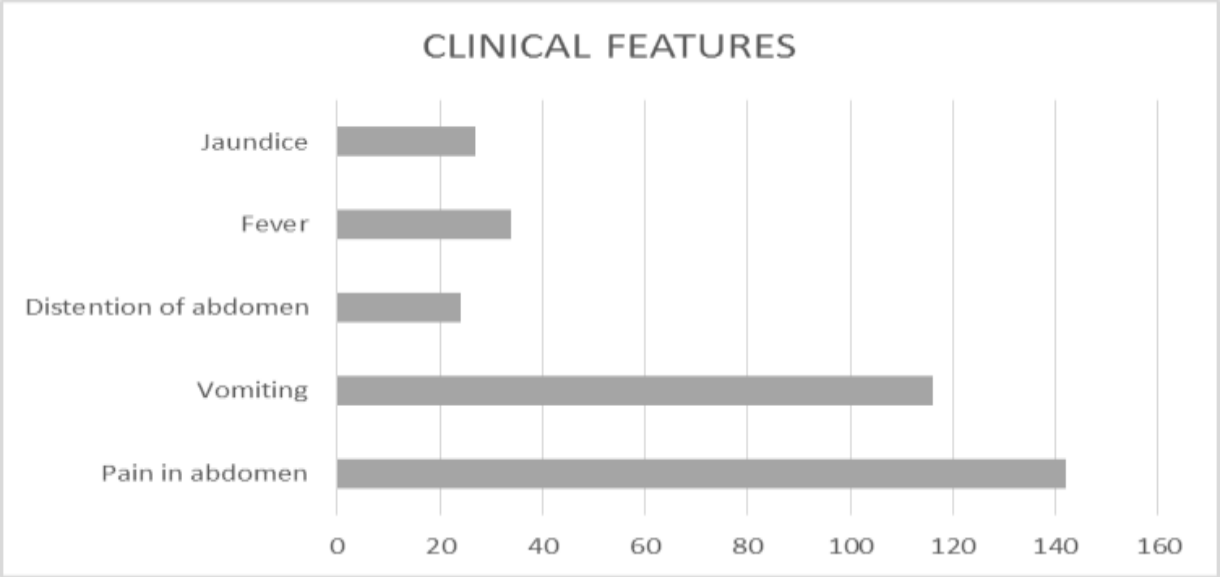
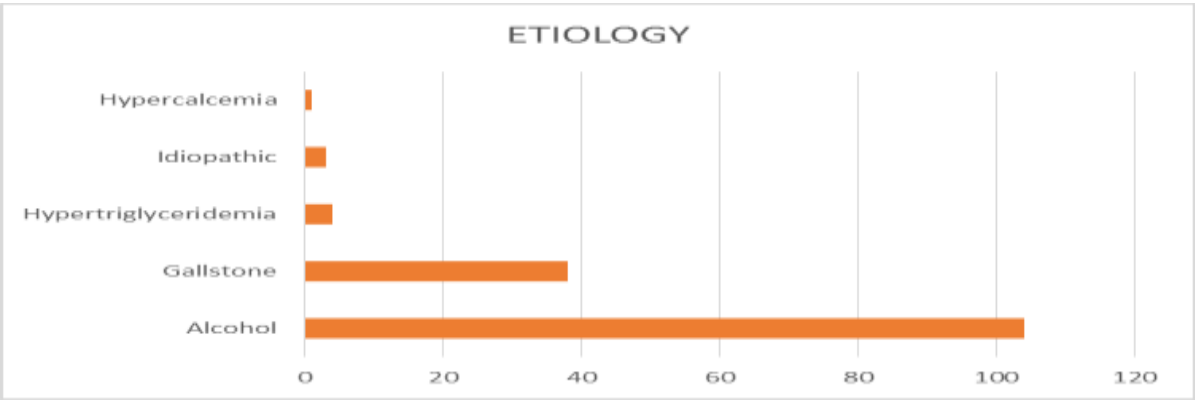


ETIOLOGY

The history of alcohol consumption and like hood of it being the etiological factor was in 104 patients. While gallstone were implicated in 38 patients, 4 patient had Hypertrigyceredemia and 1 was attributed to Hypercalcemia .No cause was found in 3cases.

Etiology	Incidence	Percentage
Alcohol	104	69.33
Gallstone	38	25.33
Hypertriglyceridemia	4	2.66
Idiopathic	3	2
Hypercalcemia	1	0.66



Severity Stratification and Co- relation of Glasgow scores

All cases of acute pancreatitis were stratified into mild or severe during the first 48 hours using

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Glasgow criteria .82 patients hand mild pancreatitis and 68 patients had severe pancreatitis.

COMPLICATIONS

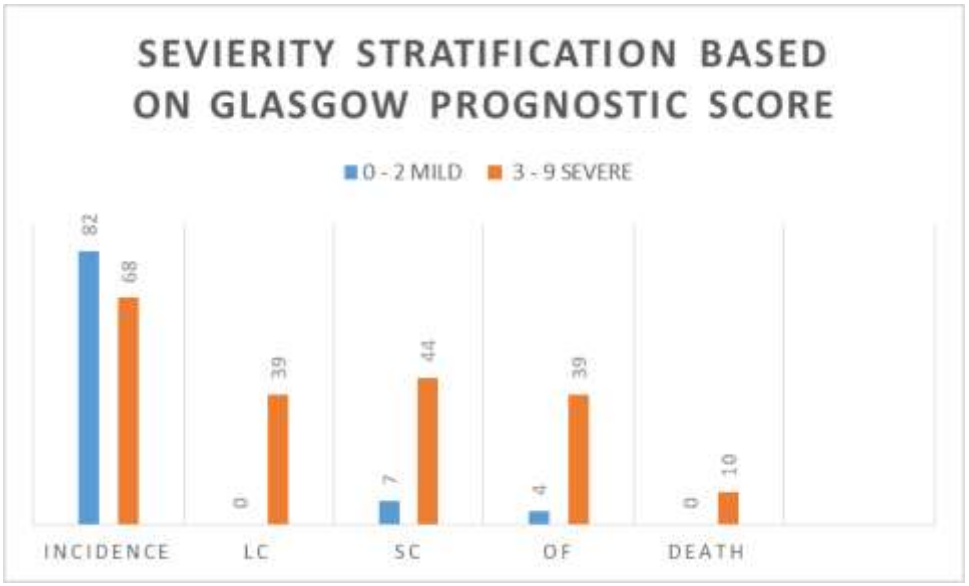
All the 150 patients evaluated Clinically, Biochemically and Radio logically and found to have local complications in 30 patients and systemic complications in 51 Patients.

Organ Failure and Mortality

43 patients had organ failure and 10 patients died dude to Multiorgan disfunction

Score	Severity	Incidence	LC	SC	OF	Death
0 - 2	Mild	82	0	7	4	0
3 - 9	Severe	68	39	44	39	10

LC - Local complication, SC- Systemic complication, OF - Organ failure



PROCEDURES

22 patients with features of obstructive jaundice underwent ERCP and sphincterotomy, 16 of them who had CBD stones were stented, 22 underwent laparoscopic Cholecystectomy out of which 3 were converted to open Cholecystectomy

9 Patients with infected necrosis were managed surgically (surgical Debridement, necrosectomy) and close drain.

Hospital stay and ICU care:

The median hospital stay was 7 days (Range – 3 to 21 days). The median hospital stay in severe cases was 13.days while in mild cases was 8 days. 122 patients were managed in the ward while 28 required ICU care ranging from 2 to 21 days.

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In our study conservative management includes

Fluid management:

- ✓ The average fluid requirement was 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
  - CVP of 8-10 mmH2O
  - BP-MAP >60 mmHg
  - Urine output at least 1ml/kg/body wt/ hr
- ✓ Patients who was admitted in ICU also given TPN to 3-5 days follow by slow withdrawal of TPN by 7-8 days followed by nasogastric feeding
- ✓ Ventilator support were given in patients associated with ARDS for 7-8 days.
- ✓ Analgesic – i.v pethidine/ tramadol were given to all patients.
- ✓ 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.
- ✓ Antibiotics- 3rd generation cephalosporin (cefotaxime) were given to all general ward patients. All the patients respond well.
- ✓ Patients with septicemia were managed by Piperacellin+Tazobactum 4.5 gram BD for 7 days. All the patients respond well.
- ✓ PPI- pantoprazole 40 mg BD were given to all patients to prevent stress ulcer
- ✓ Patients with hypocalcemia were given 10 ml of 10% calcium glucanate 8th hourly.

MANAGEMENT OF PANCREATIC NECROSIS

All the patients with severe acute pancreatitis with high elevated serum amylase, serum lipase, and high TC count were admitted in ICU put on conservative and supportive therapy for 72 hours. These patients were suspected pancreatic necrosis and investigated further CT scan and CT guided FNA to find out nature of necrosis patients with no evidence of infection (sterile necrosis) were put on conservative line of treatment. Patients with infected necrosis were managed surgically (surgical debridement, necrosectomy) and close drain.

DISCUSSION

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. Most of the patients with associated with systemic complication were managed in general ward expect few patients who are associated with septicemia and ARDS.

In this study laboratory test done are simple, routine and readily available. These investigations were used to identifying systemic complication. Local complication was diagnosed by USG/ CT scan.

In this study incidence was 6.5 times more common in male than female (M:F:6.5:1)In Ranson

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study male sex incidence is higher (M:F=3.7:1) where in Imries study female sex incidence is higher (M:F=1:1.3) the male sex incidence in study is higher because of higher incidence of alcoholic pancreatitis. In India consumption of alcohol in female is very low compare to western countries.

The mean age group in study 41 years. This is near the common mean age in the 3rd decade in other study also complication are more common in Female in this study Alcohol is found to be more common etiological factor accounting for 69.33% of total cases followed by gall stone 25.33%. This is consistent with Ranson study where alcohol factor was found to be higher 80% as compare to Imrie study where gall stone was higher.

Regarding clinical feature all the patients were presents with acute abdominal pain followed by vomiting and distention. In our study patients present with acute abdominal associated with raised serum lipase level

Regarding management all patients, diagnosed to have acute pancreatitis evaluated clinically, laboratory and radio logically. According to complication and severity patient were managed in general ward and ICU. 81% patients with systemic complication were managed in general ward and 19% in ICU those associated with septicemia and ARDS.

Conservative management includes NPO, iv fluid, antibiotics. Analgesic, TPN and electrolyte imbalance. The average fluid requirement was 5L/day.regarding antibiotics 3rd generation cephalosporins (cefotaxime) were given to all patients with systemic complication admitted in general ward and Piperacillin + Tazobactum those associated with septicemia and ARDS.

Improvement in management have lead to a reduction in mortality rates, particularly in specialized units where technical resources and experienced personnel are available.[51] The overall mortality rate in our series was 10 % as the recommended rate of 10 % by the U.K. guidelines.[52] The mortality rate among severe cases was 14.7 % compared to 28.33 % in the South England Audit.

CONCLUSION

The correct diagnosis of acute pancreatitis should be made in all patients within 48 hours of admission

The etiology of acute pancreatitis should be determined in at least 80% of cases and no more than 20% should be classified as idiopathic

Although amylase is widely available and provides acceptable accuracy of diagnosis, where lipase estimation is available it is preferred for the diagnosis of acute pancreatitis

Where doubt exists, imaging may be used ultrasonography is often unhelpful and pancreatic imaging but contrast enhanced computed tomography provides good evidence for the presence or absence of pancreatitis

The definitions of severity, as proposed in the Atlanta criteria, should be used. However, organ failure present within the first week, which resolves within 48 hours, should not be considered an indicator of a severe attack of acute pancreatitis.

Available prognostic features which predict complications in acute pancreatitis are clinical impression of severity, obesity, or APACHEII.8 in the first 24 hours of admission, and C

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reactive protein .150 mg/l, Glasgow score 3 or more, or persisting organ failure after 48 hours in hospital.

Patients with persisting organ failure, signs of sepsis, or deterioration in clinical status 6–10 days after admission will require computed tomography

The evidence to enable a recommendation about antibiotic prophylaxis against infection of pancreatic necrosis is conflicting and difficult to interpret. Some trials show benefit, others do not. At present there is no consensus on this issue. If antibiotic prophylaxis is used, it should be given for a maximum of 14 days. Further studies are needed.

The evidence is not conclusive to support the use of enteral nutrition in all patients with severe acute pancreatitis. However, if nutritional support is required, the enteral route should be used if that can be tolerated.

The nasogastric route for feeding can be used as it appears to be effective in 80% of cases.

Urgent therapeutic endoscopic retrograde cholangiopancreatography (ERCP) should be performed in patients with acute pancreatitis of suspected or proven gall stone aetiology who satisfy the criteria for predicted or actual severe pancreatitis, or when here is cholangitis, jaundice, or a dilated common bile duct. The procedure is best carried out within the first 72 hours after the onset of pain. All patients undergoing early ERCP for severe gall stone pancreatitis require endoscopic sphincterotomy whether or not stones are found in the bile duct

Patients with signs of cholangitis require endoscopic sphincterotomy or duct drainage by stenting to ensure relief of biliary obstruction

All patients with biliary pancreatitis should undergo definitive management of gall stones during the same hospital admission, unless a clear plan has been made for definitive reatment within the next two weeks.

The presence of asymptomatic pseudocysts and pancreatic and / or extrapancreatic necrosis do not warrant intervention, regardless of size, location, and / or extension

In symptomatic patients with infected necrosis, minimally invasive methods of necrosectomy are preferred to open necrosectomy

SUMMARY

- The study includes a total of 150 patients of complicated pancreatitis. 130 male and 20 female.
- The peak incidence is 3rd decade in life .The mean age group in study 41 years
- Alcohol accounts 69.33% total cases where as gall stone contributes 25.33%.
- All the patients were investigated to find out complication(systemic/ local)
- 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.
- 51 patients found to have systemic complications and 39 local complications.
- Most systemic complication were managed in general wards except few patients in

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ICU those were associated with septicemia and ARDS.

- Systemic complication were managed with supportive and conservative
- Local complications were managed with conservative and operative procedure.
- All the patients with pancreatic necrosis were kept in ICU. Sterile necrosis were managed by supportive and conservative therapy for average 3 weeks. 80% recovered well 20% died due to secondary infection and septicemia.
- Sterile necrosis was managed with necrosectomy + closed drain with mortality rate 25.64%.

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