Volume : 4 | Issue : 12 | December 2015 • ISSN No 2277 - 8179

Research Paper

# A Study Of Epidemiology And Clinical Profile of Acute Pancreatitis In A Tertiary Hospital In South India

Medical Science

**KEYWORDS :** Acute pancreatitis, severity

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## ABSTRACT

*AIMS AND OBJECTIVES: To study the clinical presentation of acute pancreatitis in a tertiary hospital in South India.*

*METHODS: This prospective study was conducted in a tertiary hospital between June 2011 to January 2013. All the patients who were diagnosed to have acute pancreatitis by clinical examination, laboratory, radiological and biochemical investigations were considered as cases. On admission after history and examination, patients were stratified according to Ranson's criteria. On discharge or death, patients were classified according to Atlanta classification. Prediction of severity was compared among the two classifications. RESULTS: Total 90 patients were diagnosed to have acute pancreatitis. Majority of the patients were in the age group 30 – 40 years and male to female ratio was 3:1. In our study the commonest etiology was alcohol (53.3%) followed by gall stones (21.1%). Majority presented with abdominal pain( 92%) followed by vomiting(77%) and jaundice(14%). Serum lipase is more sensitive than serum amylase for the diagnosis of acute pancreatitis. Computed Tomography (CT) of abdomen was 100% sensitive for the diagnosis. Median hospital stay was 5 days. 66% were managed in the ward while 34% required ICU care. The overall mortality rate was 6%. CONCLUSION: The incidence of acute pancreatitis was found to be higher in younger age group. Serum amylase and lipase both were (80 % sensitivity) used for diagnosis where ever possible. Timely intervention by endoscopist and surgeons are crucial to reduce morbidity and mortality.*

## INTRODUCTION

**BACKGROUND:** Acute pancreatitis remains a common disorder with devastating consequences.[1] The incidence of acute pancreatitis is increasing worldwide, probably related to increased alcohol consumption and changing lifestyle. Although most episodes are mild and self limiting, upto a fifth (1/5) of patients develop a severe attack that can be fatal.

Because of the frequent emergency, multimodality presentation, difficult preoperative diagnosis and management of complications[2], this subject was taken up for the present study. Inspite of technical advances in medical and surgical fields acute pancreatitis remains a major cause of morbidity and mortality.[3]

## OBJECTIVES:

To study the clinical presentation of acute pancreatitis admitted in a tertiary care hospital.

## MATERIALS AND METHODS:

This was a prospective study conducted at Sri Gokulam hospital at Salem, Tamil Nadu which is a tertiary care centre for the nearby villages. The study was done between June 2011 to January 2013.

**Acute pancreatitis was diagnosed when a patient presented with two of the following criteria:**

1. symptoms such as epigastric pain consistent with the disease
2. serum amylase or serum lipase greater than three times the upper limit of normal
3. Radiological imaging consistent with the diagnosis usually using computed tomography(CT) or Magnetic resonance imaging(MRI)

Known case of acute pancreatitis with recurrence were included.
Acute episodes in patients of chronic pancreatitis were excluded.

On admission history was collected and thorough physical examination done. Data collection 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 Ransons' criteria[4].

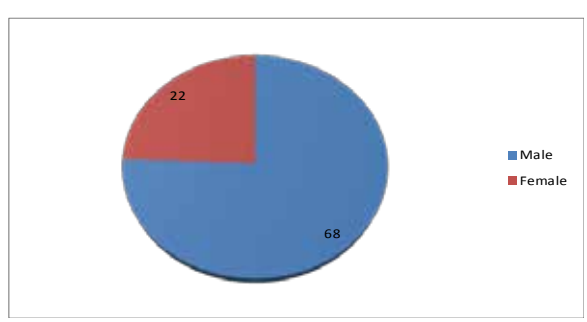
No steps were taken to suggest changes in decisions made by the treating unit regarding investigations or treatment. Patients with complications and operated patients were managed in the ICU by a team of intensivists. On discharge or death, patients were stratified into mild or severe according to the Atlanta classification.[3] 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 Ransons' criteria was compared with severity stratification by Atlanta classification.

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.

## RESULTS

During the study period total 90 patients were diagnosed to have acute pancreatitis. Of them 5 patients had recurrent episodes. So totally 90 patients with 95 episodes were analyzed.

**FIGURE I: SEX DISTRIBUTION**

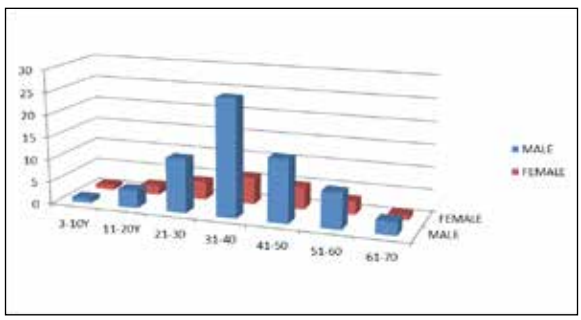



Of the 90 patients 68 (76%) were males and 22 (24 %) females.

Volume : 4 | Issue : 12 | December 2015 • ISSN No 2277 - 8179

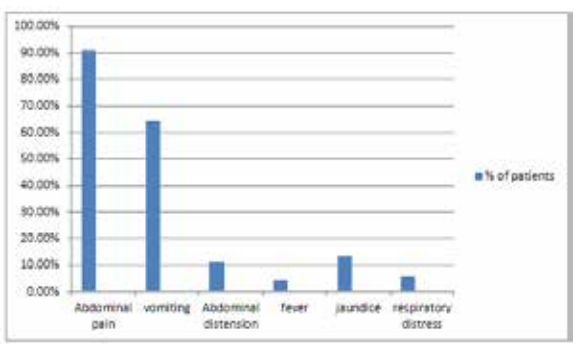
Of these 35 (51.47 %) males had a severe disease compared to 5 (22.72 %) females.

**FIGURE II: AGE DISTRIBUTION**



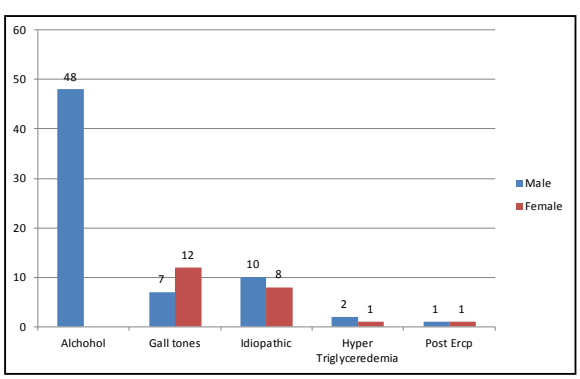

The median age of the study group was 35 years (Range 3 – 70 yrs). The peak incidence was in the fourth decade .

**FIGURE III: CLINICAL PRESENTATION**




Majority of them presented with abdominal pain (91.1%) and vomiting(64.4%).

**FIGURE IV: ETIOLOGY**




Alcohol was the commonest cause (53%) followed by gall stones (21%). 15 of the 48 alcoholic patients had a severe disease.

**TABLE I: INVESTIGATIONS**

| Test | Done in | Supported diagnosis | Did not support diagnosis |
|---|---|---|---|
| s. Amylase | 60 | 35(58.33%) | 25 |
| s. Lipase | 80 | 62(77.5%) | 18 |
| Both | 50 | 40(80%) | 10 |
| USG of abdomen | 60 | 45(75%) | 15 |
| CT scan | 35 | 35(100%) | 0 |

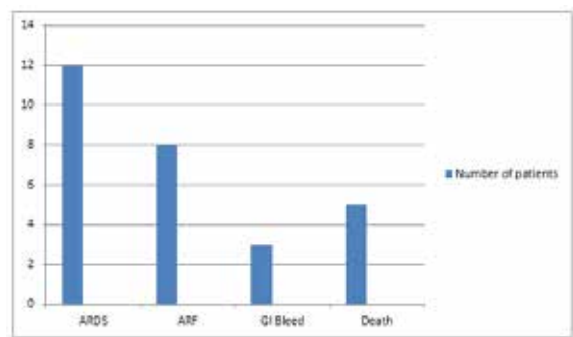
Serum amylase was raised more than 3 times the upper limit of normal in 35 cases (sensitivity 58.33%). It was not done in 20 patients since they were referred with a diagnosis of acute pancreatitis. Serum lipase was done in 80 patients and it supported the diagnosis in 62 (sensitivity 77.5%). It was done on an average 3rd to 4th day after symptom onset. Both serum amylase and lipase were done in 50 cases and both together picked up 40 cases(sensitivity 80%).

Ultrasonography (USG) of the abdomen was done in 60 cases and it supported the diagnosis in 45 cases. Contrast Enhanced Computed Tomography (CECT) was done in 35 cases and it supported the diagnosis in all the cases in which it was done . In 8 cases the diagnosis was made only by CT scan where amylase, lipase and USG did not support the diagnosis.

**TABLE II: SEVERITY STRATIFICATION:**

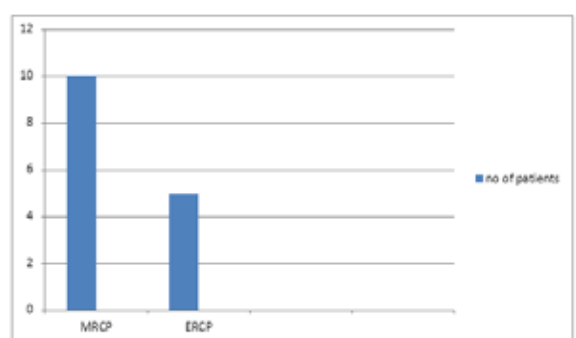
| | MILD DISEASE | SEVERE DISEASE |
|---|---|---|
| RANSONS CRITERIA | 49 | 11 |
| ATLANTACLASSIFICATION | 58 | 32 |

**FIGURE V: COMPLICATIONS:**




12 patients had ARDS evident on the X ray of chest and required mechanical ventilation. 8 patients had renal failure(ARF), 5 of which required haemodialysis. 3 patients had severe GI bleed who underwent emergency colonoscopy. 5 patients (6%) died. 2 patients within 7 days and another three after a long waning and waxing course of ICU stay. 3 patients died due to development of ARDS and respiratory failure and 2 patiens died due to sepsis+ARF+MODS(Multi organ dysfunction syndrome).

**FIGURE VI: PROCEDURES**




19 patients had biliary pancreatitis, with majority of them (10) had normal CBD in MRCP. Those with gall stones underwent laparoscopic cholecystectomy after 6 weeks . 5 patients with CBD stone underwent ERCP- sphincterotomy stone/sludge removal followed by interval cholecystectomy. Follow up was lost in 4 patients. CT guided percutaneous drainage was done in 1 patient for non resolving pseudocyst.

36 (40 %) patients were referred and 22 (62 %) of these had a severe disease. The median hospital stay in severe cases was 12 days while in mild cases was 5 days. 60 patients were managed in the ward while 30 required ICU care ranging from 3 to 14

days.

**DISCUSSION**

In the present study acute pancreatitis was found to be 3 times more common in males than females. A prospective audit in 7 hospitals from South England[5] also showed males more commonly affected (M:F ~ 1.32 : 1). The male predominance is explained by alcohol as the predominant cause of acute pancreatitis in our study.

The peak incidence was in the 4th decade of life – the most productive age group in our study. The median age group in our study was 35 years compared to 54 years in the South England Audit, indicating older age group being affected.

In our study the Ransons' criteria when compared to Atlanta criteria predicted the severity in 35 (63 %) cases. The individual values of Ransons' score in our series cannot be given importance or used for correlation of outcome, because all investigations were not done uniformly in all cases. There were many constraints including cost and difficulty in convincing patients to have investigations done when they were improving and planned for discharge.

The overall mortality rate in our study was 6% below the recommended rate of 10 % by the U.K. guidelines.[6] The mortality rate among severe cases was 22.72% compared to 28.33 % in the South England Audit.

**TABLE III: Comparative Etiology at various centers India[7]**

| | PGI N=161 | PGI N=157 | AIIMS N=276 | SGPGI N=481 | SRINAGAR KASHMIRN=648 | MUMBAI | COIMBATORE | OUR STUDY |
|---|---|---|---|---|---|---|---|---|
| GALL STONES% | 35 | 33 | 44.6 | 45 | 48 | 14 | 13 | 21.1% |
| ALCOHOL | 45 | 40 | 17.7 | 26 | 2.4 | 26 | 13 | 53.3 |
| IDIOPATHIC | 16.8 | - | 25 | 19 | 21 | 48 | 40 | 20 |
| POST ERCP | | | 5.8 | - | - | - | 3 | 2.22 |
| VIRAL | | | | | | | 7 | |
| POST TRAUMATIC | 3.7 | - | - | - | - | - | 3 | - |
| TROPICAL | | - | - | - | - | - | 13 | - |
| PANCREAS DIVISUM | | - | - | - | - | 2 | - | - |
| Biliary Ascariasis | | - | - | - | 22 | - | - | - |
| Miscellaneous | | | 6.9 | | | | | 4 |

PGI - Post Graduate Institute of Medical Education and Research,Chandigarh.

AIIMS - All India Institute of Medical Sciences, New Delhi
SGPGI - Sanjay Gandhi Institute of Medical Sciences, Lucknow
ERCP - Endoscopic Retrograde Cholangio Pancreatography.

In our study alcoholic pancreatitis was found to be the commonest (53.33%). In two different studies from PGI, alcoholics were found to be the cause in 40 to 45% cases.

In a study from AIIMs gallstones were found to be the cause in 44.6 % cases, SGPGI study found gall stones were found to be cause in 45% cases and in a study from Kashmir gall stones were found to be 48% cases. This higher incidence may be due to the higher incidence of gallstones in the North Indian population.

**CONCLUSION**

The incidence of acute pancreatitis was found to be higher in younger age group in our study. Serum amylase and lipase both were (80 % sensitivity) used for diagnosis where ever possible. Ideally all cases should be stratified during the first 48 hours according to one of the scoring systems. Scoring systems help to identify patients who are more likely to have a severe attack.

Severe cases should be managed in well equipped ICU since they may require massive fluid resuscitation, mechanical ventilation and hemodialysis. Timely intervention by endoscopist and surgeons are crucial to reduce morbidity and mortality.

Further attacks should be prevented by avoiding alcohol and early cholecystectomy in biliary pancreatitis patients.

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