

# Etiology, clinical characteristics and outcomes of patients with acute pancreatitis in Kauvery Cantonment Hospital (KCN), Trichy

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## Abstract

We performed a clinical audit on acute pancreatitis, to profile the patients of acute pancreatitis based on their clinical profile, severity, organ failure and outcomes for the quality of care and find out the research areas for future studies in patient population. We conclude that, pancreatic protocol needs to be in place to standardise assessment, investigations, and management for future studies

**Keywords:** Acute pancreatitis, Guidelines, Severity, Therapeutic procedure

## Background

Acute pancreatitis is a common cause of acute abdomen encountered in Gastroenterology practice.

Severity of the disease varies widely, from mild disease needing conservative treatment to severe and complicated disease with high morbidity and mortality

Fluid management is the cornerstone of initial management

Adherence to current guidelines has shown to decrease morbidity and mortality.

## Aim

To profile the patients of acute pancreatitis based on their clinical profile, severity, organ failure and outcomes

To identify research areas for future studies in patient population.

## Methodology

The medical records of all consecutive patients admitted to the Kauvery hospital, Cantonment under the department of Medical Gastroenterology with a diagnosis of acute pancreatitis from 1st January 2022 to 30th November 2023 were reviewed.

Patients' demographics and other variables were recorded

Etiology, final outcome and interventions done were recorded

We assessed the role of fluid resuscitation on outcomes and complications.

## Inclusion criteria

All patients with diagnosis of acute pancreatitis were included in this study

It was diagnosed based on at least two criteria of following.

Typical abdominal pain,  
Lipase greater than 3 times,  
Radiological findings matching with acute pancreatitis.

## Exclusion criteria

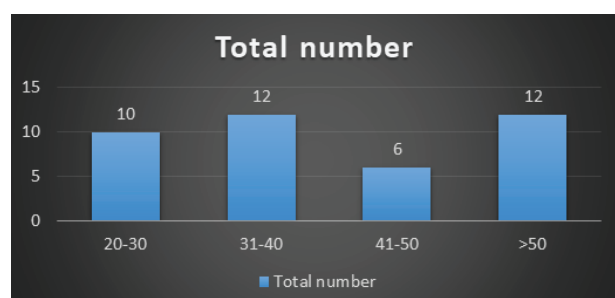
Patients with chronic pancreatitis, recurrent acute pancreatitis and pancreatic malignancy were excluded from the study.

## Results

Total of 40 patients were included in this study

Age: 22-74 years

Mean age of study population was 42 years.



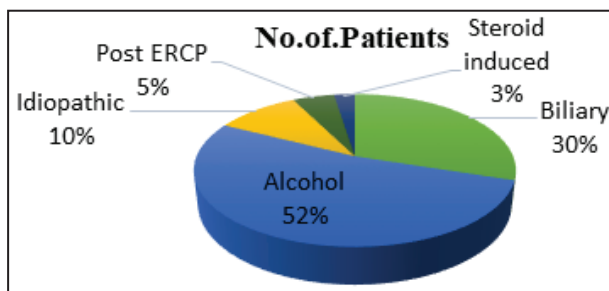
## Sex

Male - 31 (77.5%)

Females - 9 (22.5%)

## Etiology

Etiology	No. of Patients
Alcohol	21
Biliary	12
Post ERCP	2
Steroid	1
Idiopathic	4



## Clinical and Laboratory Parameters

	Mean	Minimum	Median	Standard Deviation
TLC	14696	7600	29700	4343
Hematocrit	42	40	56	8
CRP	159	2	467	161
Amylase	1284	28	7509	1588
Lipase	2529	139	8184	2040
AST	117	17	725	140
Basal Heart Rate	103	68	162	20

## Clinical Presentation

Presenting Clinical Features	Total Patients	Percentage (%)
Abdominal pain/tenderness	40	100
Abdominal distension	6	15
Nausea / Vomiting	29	72
Backache	3	7
Fever	4	10
Breathing difficulty	5	12
Oliguria	2	5
Altered mental status	2	5
Jaundice	6	15

## Co Morbidities

Co-morbid	No. of Patients
Type II diabetes mellitus	11
Systemic hypertension	12
Heart disease	5
Kidney disease	1
Liver disease	2
Dyslipidemia	2
Hypothyroidism	3
Post cholecystectomy	3

## Type of Pancreatitis

According to the Atlanta classification, acute pancreatitis can be divided into two broad categories.

### Interstitial edematous acute pancreatitis

Acute inflammation of the pancreatic parenchyma and peri pancreatic tissues, but without recognizable tissue necrosis.

### Necrotizing acute pancreatitis

Inflammation associated with pancreatic parenchymal necrosis and/or peri-pancreatic necrosis.

Interstitial Pancreatitis - 35  
Necrotising Pancreatitis - 5

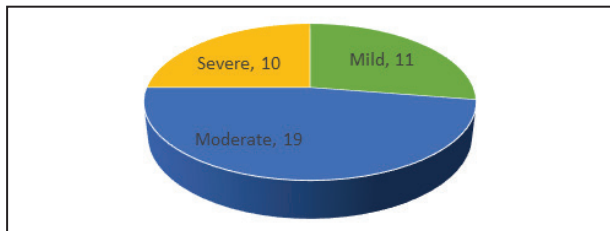
### Severity of Pancreatitis

**2013 revision of Atlanta criteria for AP severity**

Severity of AP	Definitions
Mild	Absence of organ failure and Absence of local complications
Moderately severe	Local complications* and/or Transient organ failure (<48 hours)
Severe	Persistent organ failure (>48 hours)

\* Local complications defined by one or more of the following: peripancreatic fluid collections, pancreatic and peripancreatic necrosis (sterile or infected), pseudocyst and walled-off necrosis (sterile or infected), gastric outlet dysfunction, splenic and portal vein thrombosis, and colonic necrosis.

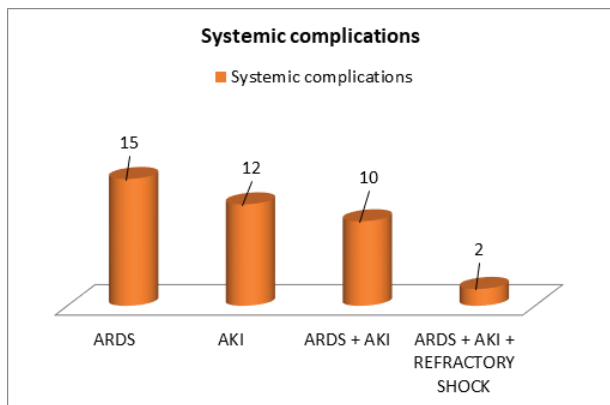
### Severity



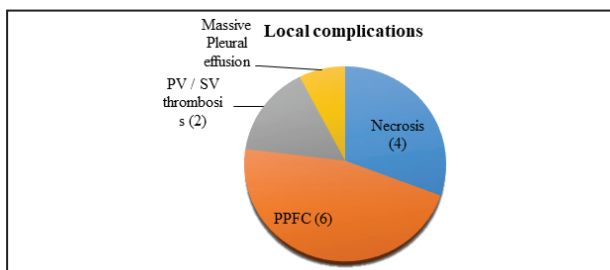
### Organ Failure

Yes - 17 (42%) | No - 23 (57%)

### Systemic and Local Complications



### Therapeutic Procedures Needed



No of Patients	Therapeutic Procedure
3	PCD placement
5	ERCP - Biliary Clearance + Stenting
1	Thoracentesis
1	Necrosectomy

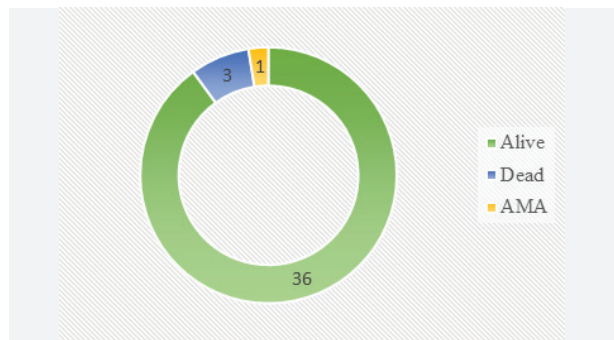
### Length of Stay

< 7 days - 30  
 8-14 days - 6  
 >14 days - 4  
 Maximum duration of stay - 26 days

Organ failure was significantly associated with increased length of stay.

### Outcomes

Outcomes	No. of Patients
Alive	36
Dead	3
AMA	1



Mortality was assessed with respect to age, sex, etiology, co morbidities, requirement of oxygen, type of Pancreatitis, severity, organ failure.

Only requirement of oxygen was significantly associated with mortality.

### Fluid resuscitation

Fluid resuscitation in pancreatitis  
 Current guidelines advocate early aggressive fluid resuscitation in acute pancreatitis.

20 ml per kg bolus followed by 3 ml per kg.

Recently published RCT, WATERFALL trial revealed aggressive fluid resuscitation did not alter severity of pancreatitis.

Aggressive resuscitation was associated with risk of volume overload.

**Aggressive or Moderate Fluid Resuscitation in Acute Pancreatitis**  
de-Madaria E et al. DOI: 10.1056/NEJMoa2202854

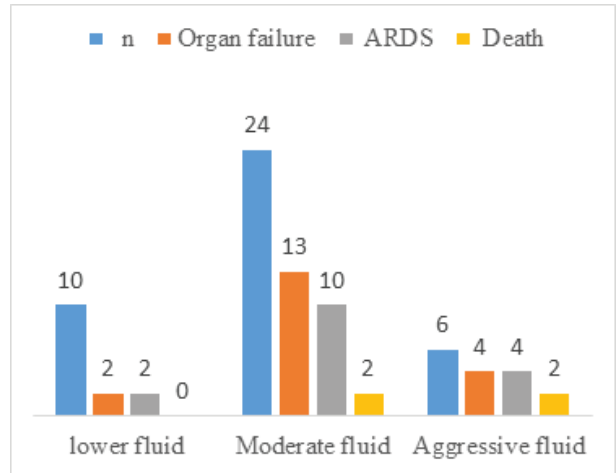
**CLINICAL PROBLEM**  
Current guidelines on the management of acute pancreatitis recommend early aggressive fluid resuscitation, but randomized trials of this practice have yielded conflicting results.

**CLINICAL TRIAL**  
**Design:** A multicenter, open-label, parallel-group, randomized, controlled trial assessed the efficacy and safety of aggressive fluid resuscitation as compared with moderate resuscitation in patients with acute pancreatitis.  
**Intervention:** 249 adults who had received a diagnosis of acute pancreatitis within the previous 8 hours were assigned to receive aggressive fluid resuscitation (a bolus of 20 ml per kilogram of body weight of lactated Ringer's solution, administered over a 2-hour period, followed by infusion at a rate of 3 ml per kilogram per hour, or moderate resuscitation (a bolus of 10 ml per kilogram in patients with hypovolemia and no bolus in those with normovolemia, followed by infusion at 1.5 ml per kilogram per hour in all patients). Patients were assessed at 12, 24, 48, and 72 hours, and fluid was adjusted as needed. The primary outcome was moderately severe or severe acute pancreatitis during the hospitalization.

**RESULTS**  
**Efficacy:** The incidence of moderately severe or severe pancreatitis did not differ significantly between the aggressive- and moderate-resuscitation groups.  
**Safety:** Fluid overload, the primary safety outcome, occurred more often with aggressive fluid resuscitation than with moderate fluid resuscitation.

**LIMITATIONS**  
• The trial was stopped at the first interim analysis because of increased harm without improvement in the primary outcome; thus, efficacy could not be assessed definitively.  
• The trial was open-label, which could have introduced bias.  
• For patients who could tolerate oral feeding, the trial mandated at least 48 hours of intravenous fluids in the aggressive-resuscitation group and 20 hours in the moderate-resuscitation group; this strategy may not reflect real-world practice.

**Links:** Full Article | NEJM Quick Take | Editorial



Rate of IV fluid did not result in difference in severity of the disease

Where should the scope of improvement be?

Pancreatic protocol needs to be in place to standardise assessment, investigations, management

Proper documentation

Adherence to the current guidelines and changing practices.

### Groups based on fluid resuscitation in first 24 hours

Aggressive resuscitation group (>5L IN 24 HR) - 6

Moderate fluid resuscitation group (2.5-5 L) - 24

Lower fluid resuscitation group (<2.5L) - 10

Vitals	N=	Organ failure	ARDS	Death
Modest fluid	10	2 (20%)	2 (20%)	0
Moderate fluid	24	13 (54%)	10 (41%)	2 (16%)
Aggressive fluid	6	4 (66%)	4 (66%)	2 (33%)