Jalaj Kumar Jain
Assistant Professor, Shri
Shankaracharya Institute of
Medical Sciences, Bhilai,
Chhattisgarh, India

SK Khairul Enam
Associate Professor Shri
Shankaracharya Institute of
Medical Sciences, Bhilai,
Chhattisgarh, India

Akhilesh Kumar Yadav
Assistant Professor Shri
Shankaracharya Institute of
Medical Sciences, Bhilai,
Chhattisgarh, India

To study the clinical profile of patients with acute pancreatitis and to study it's aetiology. A hospital based cross sectional study

Jalaj Kumar Jain, SK Khairul Enam and Akhilesh Kumar Yadav

DOI: https://doi.org/10.33545/surgery.2021.v5.i4c.775

Abstract
Aim: To study etiology and complications of acute pancreatitis, to assess the clinical profile of acute pancreatitis.
Material and Methods: The study was a cross sectional study which was carried in the Department of General Surgery, Shri Shankaracharya Institute of Medical Sciences, Bhilai, Chhattisgarh, India for the period of 1 year. Total 100 patients who were diagnosed for acute pancreatitis were include in this study and data collection on admission included age, sex, address and clinical presentation with respect to pain vomiting, gallstones trauma and drugs was noted.
Results: 56 men and 44 women were among the 100 patients. Patients aged 30-40 (42%) followed by 40-50 (33%). All patients (100%) had abdominal discomfort, 84 % had nausea/vomiting, 45% had fever, and 28% had jaundice. Acute pancreatitis is most often caused by biliary pancreatitis (46%) in patients. Alcoholism was the second reason (35%). Hyperlipidemia (4%) and traumatic pancreatitis (4%) were detected in 4 patients each. Idiopathic patients had no known aetiology (11%). Males had the greatest alcohol-induced pancreatitis, followed by biliary aetiology. Diabetes mellitus was found in 59% of the study population. Obesity was seen in 41%.
Conclusion: Acute pancreatitis is one of the most common causes of increased morbidity and death in the general population. The clinical evaluation, in conjunction with laboratory indicators, was highly linked with death and morbidity.

Keywords: acute pancreatitis, clinical, morbidity, mortality

Introduction
Acute pancreatitis is an acute pancreatic inflammation involving several regional tissues and distant organ systems [1]. Severe acute pancreatitis has a mortality rate of 2-10% [2]. The ACG practise standards give appropriate nomenclature for describing acute pancreatitis and its consequences [3]. Acute Pancreatitis is broadly classified (the Atlanta classification) as mild and severe: Mild acute pancreatitis is often referred to as interstitial pancreatitis, based on its radiographic appearance. Severe acute pancreatitis implies the presence of organ failure, local complications, or pancreatic necrosis. Interstitial pancreatitis implies preservation of pancreatic blood supply; necrosis suggests the disruption of pancreatic blood supply with resulting ischemia. Most cases of acute pancreatitis fall into the mild category, with favorable recovery. However 15% to 20% cases of acute pancreatitis are severe and may result in a prolonged hospitalization, and local as well as systemic complications like systemic inflammatory response syndrome (SIRS), multi-organ system failure and death [4]. With acute pancreatitis the inflammation comes on quickly over a few hours and usually goes away, leaving no permanently damage. However, it can be fatal if complication occurs. There are many causes of acute pancreatitis, but the mechanisms by which these conditions trigger pancreatic inflammation have not been identified. Gallstone and alcohol abuses are the main cases of acute pancreatitis. The severity of Acute Pancreatitis can be predicted based upon clinically laboratory and radiological risk factors various severity grading system and serum markers. Some of this can be perform on admission to assist in triage of patient while others can be obtained during 1st 48 -72 hours or later. Severe acute pancreatitis is characterized by a short course, progressive MODS, early hypoxemia, increased incidence of necrosis, infection, and abdominal compartment syndrome (ACS) [5]. Multiorgan dysfunction syndrome, the extent of pancreatic

Corresponding Author:
Jalaj Kumar Jain
Assistant Professor, Shri
Shankaracharya Institute of
Medical Sciences, Bhilai,
Chhattisgarh, India

necrosis, infection, and sepsis are the major determinants of mortality in Acute Pancreatitis [6]. Pancreatic necrosis is considered as a potential risk for infection, which represents the primary cause of late mortality. Occurrence of acute respiratory (ARF), cardiovascular (CVF), and renal failures (RF) can predict the fatal outcome in SAP [7]. Early accurate diagnosis is very important for it's management. Symptoms of acute pancreatitis vary considerably. For this reason the clinician must carefully evaluate information derived from other sources that supplement the history and physical examination including laboratory tests, imaging studies before arriving at a correct diagnosis of acute pancreatitis. If the cause of the attack can be eliminated there will be no further attacks and the pancreas will return to normal in terms of its morphology and function [8]. Management of acute pancreatitis has changed significantly over the past years. Early management is nonsurgical, solely supportive and patients with infected necrosis with worsening sepsis need intervention. Early intensive care has definitely improved the outcome of patients [9].

Aim
1: To study clinical profile of patients with acute pancreatitis
2. To study aetiology of acute pancreatitis

Material and methods
The study was a cross sectional study which was carried in the Department of General Surgery, Shri Shankaracharya Institute of Medical Sciences, Bhilai, Chhattisgarh, India for the period of 1 year, after taking the approval of the protocol review committee and institutional ethics committee.

Inclusion criteria
- All the patients who were diagnosed for acute pancreatitis and those who gave informed consent.

Exclusion criteria
- Patients with chronic pancreatitis
- Renal failure
- Cardiac failure
- Generalized debility

Methodology
The study population consisted of 100 cases of acute pancreatitis that fulfilled the diagnostic criteria. The diagnostic criteria included atleast one of the three features. They are serum amylase more than 4 times the upper limit of normal, serum Lipase more than 2 times the upper limit of normal and ultrasound or CT scan suggestive of acute pancreatitis. This was based on the U. K. Guidelines for the management of acute pancreatitis. On admission history was collected and thorough physical examination was done. Data collection on admission included age, sex, address and clinical presentation with respect to pain vomiting, gallstones trauma and drugs was noted. History of precious episodes and co- morbidities was noted.

Statistical analysis
The recorded data was compiled entered in a spreadsheet computer program (Microsoft Excel 2010) and then exported to data editor page of SPSS version 20 (SPSS Inc., Chicago, Illinois, USA). Descriptive statistics included computation of percentages, means and standard deviations were calculated. Statistical test applied for the analysis was chi-square test. Level of significance was set at $p \leq 0.05$.

Results
Out of 100 patients included in study, 56 were males and 44 were females. In our study, majority of patients at the age group of 30-40 (42%) and followed by 40-50 years (33%). The youngest patient was 17 year and the oldest Patient was 69 years (Table 1). All the patients (100%) presented with pain abdomen, 84% of them presented with nausea/vomiting, 45% of them presented with fever and 28 % of them with jaundice (Table 2).

Table 1: Distribution of Age and sex of acute pancreatitis patients

Age group in years	Male=56	Female=44	Total =100	%	P value
Below 20	2	1	3	3%	
20-30	8	4	12	12%	
30-40	22	18	42	42%	0.88 NS
40-50	17	16	33	33%	
50-60	5	3	8	8%	
Above 60	1	1	2	2%	

Test applied: chi-square test

Table 2: Symptomatology of acute pancreatitis patients

Symptoms	No of patients	%
Pain abdomen	100	100%
Fever	45	45%
Vomiting	84	84%
Jaundice	28	28%

In this study, 46% biliary pancreatitis was found to be the most common cause for acute pancreatitis. Alcoholism was the second most common cause (35%). Hyperlipidemia (4%) and traumatic (4%) pancreatitis was found in 4 patient each. Patients where no cause was found were labelled as idiopathic (11%). In males alcoholism induced pancreatitis was most common with a second commonest as biliary etiology (Table 3).

Table 3: Etiology and sex distribution of acute pancreatitis

Etiology	Males=56	Females=44	Total =100	%	P value
Biliary	22	24	46	46%	
Alcoholism	27	8	35	35%	
Hyperlipidaemia	0	4	4	4%	0.06 NS
Traumatic	4	0	4	4%	
Idiopathic	3	8	11	11%	

Test applied: chi-square test

Diabetes mellitus was most prevalent in the study population 59%. Obesity as defined by the current definition was prevalent in 41% (Table 4).

Table 4: Comorbidities in acute pancreatitis

Comorbidities	No of patients	%
Diabetes mellitus	59	59%
Obesity	41	41%

Discussion
Acute pancreatitis is an acute pancreatic inflammation that may include other regional tissues or distant organ systems. This allows us to establish rules for uniformity of patient treatment, which will convert into better outcomes [10]. The present showed biliary pancreatitis (46%) as the most common cause for acute pancreatitis. The second most common cause was found to be alcoholism (35%). The other causes being hyperlipidaemia (4%), traumatic pancreatitis (4%) and 11% of patients did not show any symptoms and were labelled as idiopathic.

In biliary pancreatitis usually occurs in older adults, often have a history of cholelithiasis or intermittent, postprandial right upper-quadrant pain. Patients with acute pancreatitis present with mild to severe epigastric pain, with radiation to the back. Classically, the pain is characterized as constant, dull and boring, and is worse when the patient is supine [11]. The discomfort may lessen when the patient assumes a sitting or foetal position. A heavy meal or drinking binge often triggers the pain. In the present study all the patients (100%) presented with pain abdomen, 84% of them presented with nausea/vomiting, 45% of them presented with fever and 28 % of them with jaundice. Vomiting may be severe and protracted. The abdominal distension was due to result of paralytic ileus arising from retroperitoneal irritation or ascites, or it may occur secondary to a retroperitoneal phlegmon. Jaundice may be occasionally seen in cases of gall stone pancreatitis, in which it represents distal CBD obstruction by gall stones [12].

On examination, severe pancreatitis was found to be associated with haemorrhage into the retro peritoneum may produce two distinctive sign's in about 3% of patients with pancreatitis namely Turner's sign (Bluish discoloration in the left flank) and Cullen's sign (Bluish discoloration of the periumbilical region) [13]. These are due to tracking of bloodstained retroperitoneal fluid through tissue planes of the abdominal wall to the flanks or along the falciform ligament. These signs suggest sever episode of acute haemorrhagic pancreatitis. A third rare finding called, fox sign (Bluish discoloration below the inguinal ligament or at the base of the penis) due to caudal tracking of fluid was also observed. Epigastric and right hypochondriac tenderness was present, sometimes present diffusely the abdomen. Bowel sounds were decreased or absent. Usually there were no masses palpable, if present it could be swollen pancreas or pseudocyst or abscess.

Temperature was mildly elevated (100-101 Degree F) even in uncomplicated cases. In severe cases, orthostatic hypotension and tachycardia may be present, along with tachypnea or even dyspnoea. There may be evidence of a pleural effusion, especially on the left side. In this study out of 100 patients, 56 were males and 44 were females. In our study, majority of patients at the age group of 30-40 (42%) and followed by 40-50 years (33%). The youngest patient was 17 year and the oldest Patient was 69 years. The age and sex-wise recruitment of the subjects in the present study was in accordance with the earlier studies [14, 15]. In other studies biliary pancreatitis was most prevalent. The combined etiology of alcohol and biliary pancreatitis is 87.5% which is fairly consistent with the other studies [16]. In males alcoholism induced pancreatitis 48.21% was most common, second commonest is biliary etiology (39.29%). Kandasami P and colleagues reported that 78% of males the predominant etiology is alcoholism and 77% of females, the etiology for acute pancreatitis is biliary etiology [17]. In the present study diabetes mellitus was most prevalent in the study population 59%. Obesity as defined by the current definition was prevalent in 41. %

Conclusion
In our study majority of patients had abdominal discomfort. The current investigation indicated that an increase in acute pancreatitis morbidity and death was found in this research. The correlation between clinical and lab indicators and death and morbidity was strong. The differential diagnosis for acute pancreatitis should include ruptured viscus, acute cholecystitis, appendicitis and other illnesses that resemble acute abdominal disorders.

Reference
1. Cui ML, Kim KH, Kim HG, Han J, Kim H, Cho KB *et al.* Incidence, risk factors and clinical course of pancreatic fluid collections in acute pancreatitis. Dig Dis Sci. 2014;59(5):1055-62.
2. Fu CY, Yeh CN, Hsu JT, Jan YY, Hwang TL. Timing of mortality in severe acute pancreatitis: experience from 643 patients. World J Gastroenterol 2007;13(13):1966-9.
3. Banks PA. Practice guidelines in acute pancreatitis. Am J Gastroenterol 1997;92:377-386.
4. Stevens T, Parsi MA, Walsh RM. Acute pancreatitis: problems in adherence to guidelines. Cleve Clin J Med. 2009;76(12):697-704.
5. Tao HQ, Zhang JX, Zou SC. Clinical characteristics and management of patients with early acute severe pancreatitis: experience from a medical center in China. World journal of gastroenterology 2004;10(6):919.
6. Buter A, Imrie CW, Carter CR, Evans S, McKay CJ. Dynamic nature of early organ dysfunction determines outcome in acute pancreatitis. British Journal of Surgery. 2002;89(3):298-302.
7. Kong L, Santiago N, Han T Q, and Zhang S D, "Clinical characteristics and prognostic factors of severe acute pancreatitis," World Journal of Gastroenterology. 2004;10(22):3336-3338.
8. Norton J, Berger G, Philip P (Editors) Acute and Chronic pancreatitis; Harrison's Principles of Internal Medicine. Newyork McGraw Hill. 20'h edition, 2005, 1895-1906.
9. Chauhan S, Forsmark CE. The difficulty in predicting outcome in acute pancreatitis. The American journal of gastroenterology 2010;105(2):443-5
10. Zerem E. Treatment of severe acute pancreatitis and its complications. World J Gastroenterol. 2014;20(38):13879-92.
11. Glenn F, Frey C. Re-evaluation of the treatment of pancreatitis associated with biliary tract disease. Ann Surg. 1964;160:723-36.
12. Ranson JH, Rifkmd KM, Roses DF. Prognostic signs and the role of operative management in acute pancreatitis. Surg Gvnecol Obstet 1974;139(1):69- 81.
13. Acosta JM, Ledesma CL. Gallstone migration as a cause of acute pancreatitis. N Engl J Med 1974;290(9):484-7.
14. Werner J, Hartwig W, Uhl W, Müller C, Büchler MW. Useful markers for predicting severity and monitoring progression of acute pancreatitis. Pancreatology 2003;3(2):115-27.
15. Michael L. APACHE-II scores for assessment and monitoring of acute pancreatitis The Lancet. 1989;334(8656):201-5.
16. Kandasami P, Harunarashid H, Kaur H. Acute Pancreatitis in a Multi-Ethnic Population Singapore Med J 2002;43(6):284-88.
17. De Waele JJ, Hoste EA, Malbrain ML. Decompressive laparotomy for abdominal compartment syndrome – a critical analysis. Crit Care 2006;10:51-5