ISSN: 0975-1556

Available online on www.ijpcr.com

International Journal of Pharmaceutical and Clinical Research 2021; 13(3); 73-78

Original Research Article

To Investigate the Causes and Consequences of Acute Pancreatitis, as well as to Evaluate the Clinical Profile of Acute Pancreatitis

Vikram Jha[1], Anil Kumar[2]

[1]Senior Resident, Upgraded Department of General Surgery, Darbhanga Medical College and Hospital, Laheriasarai, Bihar, India

[2]Associate Professor, Upgraded Department of General Surgery, Darbhanga Medical College and Hospital, Laheriasarai, Bihar, India.

Received: 04-04-2021 / Revised: 17-05-2021 / Accepted: 24-06-2021
Corresponding author: Dr. Anil Kumar
Conflict of interest: Nil

Abstract

Aim: To study aetiology 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, Darbhanga Medical College and Hospital, Laheriasarai, India for 15 months. 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:** Out of 100 patients, 56 were males and 44 were females. Majority of patients at the age group of 30-40 (42%) and followed by 40-50 years (33%). 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. 46% patient's 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 aetiology. Diabetes mellitus was most prevalent in the study population 59%. Obesity as defined by the current definition was prevalent in 41%.

Conclusion: Acute pancreatitis is one of the leading causes for increase morbidity and mortality to society. Cinical assessment along with lab markers correlated well with the mortality and morbidity.

Key Words: acute pancreatitis, clinical, morbidity, mortality.

Introduction

Acute pancreatitis is an inflammatory condition that affects the pancreas and can affect nearby tissues and organ systems[1]. The mortality rate for serious acute pancreatitis is between 2 and 10%[2]. The practise guidelines of the American College of Gastroenterology (ACG) define appropriate terms for the classification of acute pancreatitis and its complications[3]. Acute pancreatitis is divided into moderate and extreme categories (the Atlanta classification): Because of its radiographic

presentation, mild acute pancreatitis is sometimes referred to as interstitial pancreatitis. Organ dysfunction, local complications, or pancreatic necrosis are also signs of severe acute pancreatitis. 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 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 its 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. There will be no further attacks until the source of the attack can be identified, and the pancreas' morphology and function will return to normal[8]. Acute pancreatitis treatment has evolved dramatically in recent years. Patients of infected necrosis and deteriorating sepsis need care. Early treatment is nonsurgical and strictly compassionate. Early intensive care has significantly increased patient outcomes[9].

Material and methods

The study was a cross sectional study which was carried in the Department of General Surgery, Darbhanga Medical College and Hospital, Laheriasarai, India for 15 months, after taking the approval of the protocol review committee and institutional ethics committee.

Inclusion criteria

- All the patients who were diagnosed for acute pancreatitis

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 at least 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 years 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%	0.88 NS
20-30	8	4	12	12%	
30-40	22	18	42	42%	
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%	0.06 NS
Alcoholism	27	8	35	35%	
Hyperlipidaemia	0	4	4	4%	
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 inflammatory process of the pancreas with variable involvement of other regional tissues or remote organ systems. Predicting the prognosis of a patient with acute pancreatitis at admission forms a very important strategy in management of Acute pancreatitis, considering this it enables us to practice guidelines for standardization of management of the patient which will in turn translate into improved 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 phlegm on. 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 severing 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 pseudo cyst 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 years 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 aetiology 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

One of the main causes of increased morbidity and mortality in population is acute pancreatitis. The mortality and morbidity are well associated with the clinical evaluation and lab markers. Since acute pancreatitis may resemble a variety of other acute abdominal disorders, a diligent differential diagnosis must be made, which may include perforated viscus, acute cholecystitis, appendicitis, and other related conditions.

Reference

1. Boon NA, College NR, Walker BR, Hunter AA (Editors) Davidson's Principles and Practice of Medicine. London Churchill Livingstone, 20th edition. 2006; 904-09
2. Singh VK, Bollen TL, Wu BU, et al. An assessment of the severity of interstitial pancreatitis. Clin Gastroenterol Hepatol 2011; 9:1098.
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 Dec 1;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 Mar 15;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 Mar 1;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 Feb 1;105(2):443-5
10. Elrnan R. Arneson N. Graham E: Value of blood amylase estimation in the diagnosis of pancreatic disease: A clinical study Arch Surg. 1929; 19:943- 67.
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