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Original Research Article

Clinical study of various forms of acute pancreatitis in a tertiary care centre

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ABSTRACT

Background: Acute pancreatitis is an acute inflammatory process of the pancreas with variable involvement of regional tissues and remote organ system. Severe acute pancreatitis (SAP) is characterized by a short course of progressive multi organ dysfunction syndrome (MODS), early hypoxemia and increased incidence of necrosis, infection, and abdominal compartment syndrome (ACS). The average mortality rate in severe acute pancreatitis approaches 2-10%. This study was conducted to observe etiological factors, the clinical presentations and outcome of various form of acute pancreatitis.
Methods: A hospital record based retrospective study on one hundred (100) cases of various forms of acute pancreatitis in the department of surgery at tertiary care teaching hospital of South Gujarat from January 2019 to December 2019 to know the clinical presentation of acute pancreatitis patients.
Results: The maximum patients were belonged to age group between 31-40 years. There was a high incidence of alcoholic pancreatitis as compared to the gallstone pancreatitis. In both males and females, alcohol was the main etiological factor. Few patients needed ICU admission and oxygenation. Surgery was the modality for some patients. Out of total, 89 cases were recovered.
Conclusions: Early identification of sever and complicated acute pancreatitis prompts the highly dependent intensive care and early intervention. Gall stones are considered most common etiological factor for acute pancreatitis in India but alcoholism crosses this limit suggests changing life style of our people. Outcome is favourable in expectant conservative management of any form of acute pancreatitis.

Keywords: Acute pancreatitis, Necrosis, Pseudo cyst, Severe acute pancreatitis

INTRODUCTION

Acute pancreatitis (AP) is an acute inflammatory state of the pancreas affecting innumerable organ systems, assumed to result from abnormal pancreatic enzyme activation inside acinar cells. Intra-acinar pancreatic enzyme activation persuades auto digestion of normal pancreatic parenchyma. The American College of Gastroenterology (ACG) practice guidelines offer acceptable terminology for the classification of Acute Pancreatitis and its complications.[1]

Severe acute pancreatitis (SAP) is characterized by a short course of progressive multi organ dysfunction syndrome (MODS), early hypoxemia and increased incidence of necrosis, infection, and abdominal compartment syndrome (ACS).[2] Multiorgan dysfunction syndrome (MODS), the magnitude of pancreatic necrosis, infection, and sepsis are the major determinants of mortality in Acute Pancreatitis.[3] Pancreatic necrosis is reflected as a potential risk for infection, which signifies the primary cause of late mortality. Occurrence of acute respiratory failure (ARF), cardiovascular failure (CVF),

and renal failure (RF) can envisage the fatal outcome in SAP.[4]

A comprehensive range of mortality (20-60%) has been reported in SAP. Acute pancreatitis occurs when pancreatic enzymes are prematurely actively inside the pancreas leading to auto digestion of the gland and local inflammation.[5] These enzymes can also reach the bloodstream, stimulating the production of inflammatory cytokines and tumor necrosis factor-a (TNF-a) from leukocytes. The release of those substances activates an inflammatory cascade, which leads to the SIRS.[6] Precise diagnosis on admission to the hospital is of utmost importance and there is therefore, to identify patients who are at risk of morbidity and death.

Aims and objectives

To document the etiological factors, clinical presentation and management of patients admitted under department of surgery with acute pancreatitis. To document the complications associated with acute pancreatitis in these patients. To study the usefulness of clinical evaluation, biochemical analysis and radiology for the diagnosis of acute pancreatitis.

METHODS

A retrospective and observational study was conducted among 100 patients of acute pancreatitis admitted in the department of general surgery at New Civil Hospital, Surat, South Gujarat, during the study period of the May 2016 to June 2018. Institutional Ethical Committee permission was taken prior to this study. The case papers of all the patients admitted under department of surgery with a final diagnosis of acute pancreatitis between May 2016-June 2018 were obtained from medical records section. Case history of patients was taken. It included origin, duration and progress of present illness, past history of addiction, as well as personal history of patients was noted. various blood investigations like CBC, urine examination, RFT, LFT, as well as serum amylase were done. Radiological investigations were noted.

Inclusion criteria

Diagnosed cases of acute pancreatitis admitted under department of surgery. Age >12 years.

Exclusion criteria

Recurrent attack of acute pancreatitis or the previous history of complications like pseudocyst, pancreatic abscess etc.

Data entry and analysis

The data was entered in MS excel sheet and analyzed using SPSS software. Qualitative data were described as a frequency and percentages, while quantitative data were described as mean and standard deviation.

RESULTS

In this retrospective observational study of total 100 cases of acute pancreatitis, 39% patients were of age group of 31-40 years and 28% were that of 21-30 years. Only 2% patients were belonging to age group more than 60 years. Out of total, 80 were males and 20 were females. As etiological factors, 62% patients have h/o alcohol intake followed by gall stones in 23% of patients. In both types of etiologies, we found male preponderance. Other etiological factors were trauma (3%), idiopathic (8%), following ERCP (2%) and surgery (2%). Abdominal pain was presenting complaint in all patients with severity mild to moderate in 18% and severe in 82% patients. Vomiting and nausea (28%) were second most common complaints. Acute pancreatitis with complications were observed in 67% of patients with complications like local fluid collection (39%), ascites (13%), pseudo cyst (09%), necrosis (05%) and abscess (03%) as per radiological findings. Severe acute pancreatitis (SAP) was diagnosed in 63% patients with organ failure and metabolic derangements with help of radiological findings and biochemical markers. All patients were initially managed with i.v. broad spectrum antibiotics and i.v. fluid resuscitation, out of which 67% patients required expectant conservative management with ICU admission for 12% patients and 33% patients required intervention in form of ERCP (10%) and surgery (13%). Outcome in form of morbidity (9%), mortality (02%) and complete recovery (89%) were observed (Table 1).

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.

In the present study, maximum number of cases were observed in the age group of 31-40 years which was 39% and second age group being 21-30 years with 28% which total accounts to 67% of the cases in the age group of 21-40 years which was concordant with the study by Narender et al, where majority of the patients were in the age group of 21-40 years, constituting 62% with a mean of 36.24 years.[7] Likewise, in the study by Vengadakrishnan et al, most patients were in the age group of 21 to 40 years.[8]

In the present study, male preponderance was observed in 80% cases with a clear sex predilection towards male with a M:F ratio of 4:1. Male preponderance was also reported

by Narender et al, with M:F ratio of 9:1.[7] Similar to the study by Vengadakrishnan et al, where also a distinct male predominance was observed with M:F ratio of 5:1.[8]

Alcohol was the most common (62%) etiology for pancreatitis in this study in both males as well as females with second most common being gallstones (23%) which was concordant with the study of Negi et al, where also Alcohol was the most common cause of acute pancreatitis in 73 (59.34%) patients, followed by gallstone in 40 (32.52%) patients.[9] Similar was the result of study of Narender et al, where alcoholism was the commonest cause in males and gallstones was the commonest cause in females.[7] However, in the study of Prasad et al, biliary pancreatitis was found to be the most common cause for acute pancreatitis.[10] Alcoholism was the second most common cause (32.5%). In this study patients where no cause was found were labelled as idiopathic (8%), trauma was found to be the cause in 3% of the cases.

Table 1: Different parameters of patients with acute pancreatitis.

Parameters		Number of patients (n=100)
Age		
21-40 years		67
Sex		
Male:Female		80:20
Symptoms		
Abdominal pain		100
Fever		03
Vomiting and nausea		28
Dyspnea		07
Abdominal distension		22
Signs		
Tenderness		60
Gaurding/rigidity		46
Grey Turener's/Cullen's sign		01
Ascites		13
Etiologies		
Idiopathic		08
Alcohol		62
Gall stones		23
Post ERCP		02
Post-operative		02
Trauma		08
Severity		
Mild		24
Moderate		13
Severe		63
Treatment		
Conservative		66
Intervention	ERCP	10
	Surgery	13
Complications		67
Local fluid collection		39
Pseudo cyst		09
Ascites		13
Necrosis		05
Abscess		03
Outcome		
Recovered		89
Recovered with complications (morbidity)		09
Mortality		02

In this study abdominal pain was the most common presenting complaint in all patients (100%) ranging from mild dull aching pain (12 %) to severe agonizing pain (82%). The presentation in our study correlates with studies by Negi et al, where it was 100%.[9] Vomiting and nausea were the second most common presentations in 28% of cases as compared to the study of Negi et al, where it was seen in 42.5% and 80% in the study of Prasad et al.[9,10]

In the present study local complications were encountered of which the most common was peripancreatic or parenchymal fluid collection (39%), pancreatic pseudo cyst was diagnosed in 9% of the patient, and necrosis and pancreatic abscess were found in 5% and 3% of cases respectively. According to the study of Narender et al, pseudo cyst of the pancreas was the most common (in 16% of the patients) local complication, which was followed by splenic vein thrombosis, pleural effusion, and necrosis.[7] There was not even a single case of splenic vein thrombosis in the present study. 22% cases did not have any local complication.

In the present study majority (89%) of the patient recovered from the acute disease and were discharged who were kept on follow up. Total 9% cases recovered with complications and 2% cases who were suffering from pancreatic abscess expired due to multiple organ dysfunction after undergoing surgery. There was no mortality among the patients who were kept conservative and 2% mortality in the patient who underwent operative procedure. In the study of Baig et al, the mortality was found to be 6%.[11]

It was hospital based study so, data of this study cannot be generalized. It was done in a resource limited setting with no external funding. The minimum required investigations for assessment of acute pancreatitis were done but could not do other specific markers as mentioned earlier

CONCLUSION

Early identification of sever and complicated acute pancreatitis prompts the highly dependent intensive care and early intervention. Although early interventions in acute pancreatitis results in more mortality, operative management is crucial in survival of rightly and timely chosen patient. Gall stones are considered most common etiological factor for acute pancreatitis in India but alcoholism crosses this limit suggests changing life style of our people. Outcome is favorable in expectant conservative management of any form of acute pancreatits.

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REFERENCES

1. Banks PA. Practice guidelines in acute pancreatitis. Am J Gastroenterol. 1997.92:377-86.
2. 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 J Gastroenterol. 2004;10(6):919..
3. Buter A, Imrie CW, Carter CR, Evans S, McKay CJ. Dynamic nature of early organ dysfunction determines outcome in acute pancreatitis. Br J Surg. 2002;89(3):298-302.
4. Kong L, Santiago N, Han TQ, Zhang SD. Clinical characteristics and prognostic factors of severe acute pancreatitis. World J Gastroenterol. 2004;10(22):3336.
5. Hirano T, Manabe T. A possible mechanism for gallstone pancreatitis: repeated short-term pancreaticobiliary duct obstruction with exocrine stimulation in rats. Proceed Soci Exp Biol Med. 1993;202(2):246-52.
6. Norman J. Role of cytokines in the pathogenesis of acute pancreatitis. Am J Surg. 1998;175(1):76-83.
7. Narender NR, Pappu KP. A clinical study of acute pancreatitis. Int Surg J. 2016;3(1):96-100.
8. Vengadakrishnan K, Koushik AK. A study of the clinical profile of acute pancreatitis and its correlation with severity indices. Int J Health Sci. 2015;9(4).
9. Negi N, Mokta J, Sharma B, Sharma R, Jhobta A, Bodh V, et al. Clinical profile and outcome of acute pancreatitis: a hospital-based prospective observational study in Subhimalayan State. J Assoc Phys India. 2018;66(3):22-4.
10. Prasad HL, Nagarjuna TR. Clinical profile of patients with Acute pancreatitis. Int Surg J. 2016;4(7):2994-7.
11. Baig SJ, Rahed A, Sen S. A prospective study of the aetiology, severity and outcome of acute pancreatitis in Eastern India. Trop Gastroenterol. 2008;29(1):20-2.

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