ORIGINAL ARTICLE

Journal of Contemporary Medicine and Dentistry
www.jcmad.com

ISSN [P-2347-4513]
ISSN [O-2349-0799]
Year: 2019
Volume: 7
Issue: 3
26-30

Clinical Profile in Acute Pancreatitis and its Management- A Study in a Teaching Hospital

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Abstract

Background: *Acute pancreatitis is an inflammatory disease of pancreas with progressive destruction of exocrine part of the pancreas. The disease is very common with wide range of clinical features and incidence is increasing due to increased intake of alcohol. The symptoms can be from mild to fulminant with MOF and mortality. Methods: This prospective study was conducted on patients admitted to Prathima Institute of Medical Sciences, Karimnagar. N=45 patients of acute pancreatitis were enrolled for the study. N=5 patients were excluded since they did not fulfill the diagnostic criteria. Therefore n=40 were available for analysis. The diagnostic criteria included at least one of the following it was based on the U.K. guidelines for the management of acute pancreatitis.* ***Results:*** *The median age of the study group was 35 years (Range 17 – 65 yrs). N=32 (80%) were males and n=8 (20%) females. The commonest presentation was with pain in the abdomen and vomiting. Pain in abdomen was present in 37 (92.73 %) patients and vomiting in 24 (60 %) patients. Other clinical features included distention of abdomen in 6 (15%) cases, fever in 8 (20%) cases and jaundice in 3 (7.5%) cases. N=4 patients of biliary Pancreatitis underwent cholecystectomy. N=2 open Cholecystectomy with CBD exploration, n=2 laparoscopic cholecystectomy, n=1 in the same admission (12 days after symptom onset) and others on follow up. Nutritional support was given to 6 patients with severe acute pancreatitis. N=4 patients had nasojejunal (NJ) feeding ranging from 6 to 25 days and 2 patients were given total parenteral nutrition (TPN) ranging from 10 to 44 days. The median hospital stay was 12 days (Range – 3 to 65 days).* ***Conclusion:*** *The incidence of acute pancreatitis was found to be in a 4th decade in our study. Serum Amylase and Lipase both should be (80 % sensitivity) used for diagnosis where ever possible. CT abdomen has got 100% sensitivity and it must be done in all doubt full cases. In our study alcoholic pancreatitis was the most common type. This explains the need for large scale health education programs to quit alcohol which can act as screening methods to prevent the onset or limit the severity of the disease.*

Keywords*: Clinical Profile, Acute Pancreatitis, Management*

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Date of Acceptance: 18/11/2019

Introduction

Acute pancreatitis is defined as an acute inflammatory process of the pancreas, with variable involvement of other regional tissues or remote organ systems [1]. It may occur as an isolated attack or recur in distinct episodes with reversion to normal histology between attacks it is a reversible condition. It is distinguished from chronic pancreatitis by the lack of continuing inflammation, irreversible structural changes and permanent impairment of exocrine and endocrine function. However, more than a century after its comprehensive description, acute pancreatitis still remains a common disorder with devastating consequences [2]. The incidence varies from 5.4 to 79.8 per 100,000 population and it carries an overall mortality rate of 10 – 15 %.

The mortality rate approaches 40 % in severe cases [3] Men are usually affected much more than women – 10 to 30 % higher incidence [4]. The reason for male preponderance is probably higher incidence of alcoholic pancreatitis and also because biliary pancreatitis is seen equally in males and females, despite a higher prevalence of gallstones in females [4]. Acute pancreatitis has shown etiological involvement of alcohol or gallstone disease in 80% of cases. The remaining 10 % are related to metabolic factors, drugs and other conditions and 10% are idiopathic [1]. However, the frequency of different forms of pancreatitis varies from source to source and depends on country of origin and the population studied although most episodes are mild and self-limiting, up to a fifth of patients develop a severe attack that can be fatal. Since the symptoms are very widely it is important challenge for clinician to bring back the patients from the clutches of the disease. It cannot be too strongly emphasized that the primary treatment of acute pancreatitis is conservative only, but it is the Pandora's Box of manifestations, with its inherent complications' surgery comes into play as diagnostic, prognostic and therapeutic endeavor. In spite of technical advances in medical and surgical fields acute pancreatitis remains a major cause of morbidity and mortality [5, 6]. Because of the frequent emergencies with pancreatitis, multimodality presentation, difficult preoperative diagnosis and management of complications, this subject was taken up for the present study in which we will be studying the clinical profile and management of acute pancreatitis in our Hospital.

Materials and Methods

This prospective study was conducted on patients admitted to Prathima Institute of Medical Sciences, Karimnagar. Institutional Ethical committee permission was obtained for the study. Written consent was obtained from all the patients in the study on the standard proforma. N=45 patients of acute pancreatitis were enrolled for the study. N=5 patients were excluded since they did not fulfill the diagnostic criteria. Therefore n =40 were available for analysis. The diagnostic criteria included at least one of the following it was based on the U.K. guidelines for the management of acute pancreatitis [7]

1. Serum Amylase more than 4 times the upper limit of normal
2. Serum Lipase more than 2 times the upper limit of normal
3. Ultrasound or C.T. scans suggestive of acute pancreatitis

Inclusion criteria: Patients referred to or admitted under the departments of General Surgery and General Medicine and diagnosed to have acute pancreatitis. All patients were to fulfill the diagnostic criteria. Patients with evidence of pancreatitis developing after non-penetrating abdominal trauma were included. Known cases of acute pancreatitis with recurrence were also included.

Exclusion Criteria: Acute episodes in patients of chronic pancreatitis. Patients less than 14 years of age on admission a detailed history was obtained including alcoholic habits, smoking habits, history of gallstones, trauma, and drugs was noted. History of previous episodes and co-morbidities was noted. Patients were subjected to investigations plain X rays, CT Scan, MRI Scan Laboratory investigations to detect the levels of serum amylase and serum lipase and during the first 48 hours, patients were stratified according to the Glasgow criteria as recommended by the U.K. Guidelines [7]. There were 4 cases of severe pancreatitis (10%), not improving who were referred to higher centers for further management. All cases were managed conservatively in ICU with strict monitoring. There was one death of all 40 patients, a case of acute blunt trauma to abdomen who presented late after injury with several other co-morbidities Data was collected on complications, investigations, and interventions under taken, outcome, duration of stay in hospital and mode of nutritional support. 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. Patients with alcoholic pancreatitis were urged to stop consuming alcohol and de-addiction was attempted with the help of Psychiatrist in a few cases.

Results

Total number n=45 patients were initially found for the study in the study. Out of which n=3 patients did not satisfy the diagnostic criteria and n=2 patients were diagnosed as chronic pancreatitis. Therefore n=40 patients with were analyzed.

Table 1: Demographic profile of patients

Age Group	Male	Female	Total	Percentage
17 – 27	3	1	4	10
28 – 37	11	2	13	32.5
38 – 47	12	5	17	42.5
48 – 57	3	0	3	7.5
58 - 65	2	1	3	7.5
Total	32	8	40	100

The median age of the study group was 35 years (Range 17 – 65 yrs). The most common age group of involvement was in the 4th decade with n=17(42.5%) of patients in the study. Of the 40 patients 32 (80%) were males and 8 (20 %) females. Of these n=4 (12.5%) males had a severe disease compared to 0 (0%) females.

The most common etiology of acute pancreatitis found in this study was alcoholism in n=25(62.5%) of patients presence of gall stones was found in n=5 (12.5%) and hyperlipidemia was in n=3(7.5%) and traumatic etiology was found in n=2(5%). No cause (idiopathic) was found in 3 cases 7.5%. One patient with recurrent pancreatitis referred to higher center for ERCP was diagnosed to have pancreatic divisum. N=13 patients had co-morbidities in the form of Diabetes n=8, Hypertension n=11, Ischemic heart disease n=3, Rheumatic heart disease n=1 and Hypothyroidism n=1. Three of the seven diabetics had a severe disease.

Table 2: Etiology of acute pancreatitis cases in the study

Etiology	Frequency	Percentage
Alcoholic	25	62.5
Gall Stone	5	12.5
Hyperlipidemia	3	7.5
Idiopathic	5	12.5
Traumatic	2	5.0

The commonest presentation was with pain in the abdomen and vomiting. Pain in abdomen was present in 37 (92.73 %) patients and vomiting in 24 (60 %) patients. Other clinical features included distention of abdomen in 6 (15%) cases, fever in 8 (20 %) cases and jaundice in 3 (7.5 %) cases.

Table 3: Clinical features

Clinical features	Total	Percentage
Pain abdomen	37	92.73
Vomiting	24	60
Fever	08	20
Distension of abdomen	06	15
Jaundice	03	7.5

Serum Amylase test was done in all the patients. It was raised more than four times the upper limit of normal in 21 cases (Sensitivity 52.5 %). Serum Lipase was done in 25 cases and it supported the diagnosis in 20 cases (Sensitivity 77.42 %). It was done on an average third to fourth day after symptom onset. Both Serum Amylase and Serum Lipase were done in 20 cases and both together picked up 16 cases (Sensitivity 80 %). X-rays of the abdomen were

routinely done. Ultrasonography (USG) of the abdomen was done in 40 cases and it supported the diagnosis in 27 cases. The reason could be that it is entirely operator dependent and bowel gas shadows may obscure the view of pancreas Contrast Enhanced Computed Tomography (CECT) was done in 30 patients and it supported the diagnosis in all the cases in which it was done. In 13 cases the diagnosis was made only by C.T scan where Sr. Amylase, Sr. Lipase and USG did not support the diagnosis (table 4).

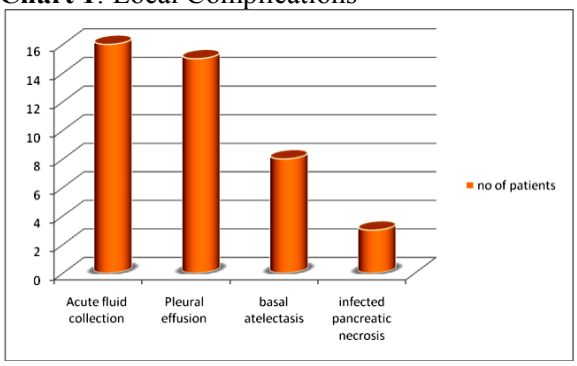
Table 4: Diagnostic investigations

Test	Done in	Supported diagnosis	Did not support diagnosis
Sr. Amylase	40	21 (52.5%)	19
Sr. Lipase	25	20 (77.42%)	5
Both	20	16 (80%)	4
USG	40	27 (67.5%)	13
CT scan	30	30 (100%)	0

N=16 (40%) patients had only acute fluid collections detected by either USG or C.T. scan. All were treated conservatively.

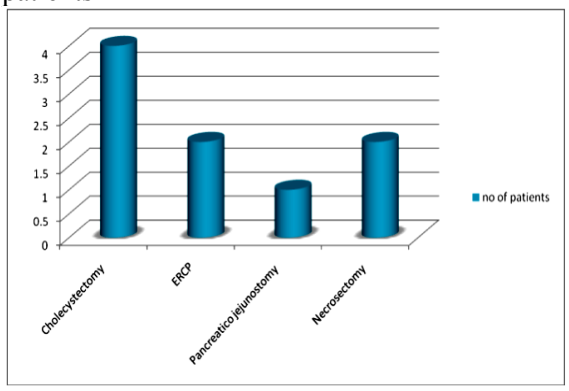
3 patients (7.5%) not improving with conservative management alone were found to have infected pancreatic necrosis confirmed on contrast enhanced CT scan. All these patients were referred to higher center for surgical intervention. 15 patients had pleural effusion, mainly on the left side. None of them required aspiration. 8 patients had basal atelectasis. 1 patient had deep vein thrombosis (DVT).

Chart 1: Local Complications



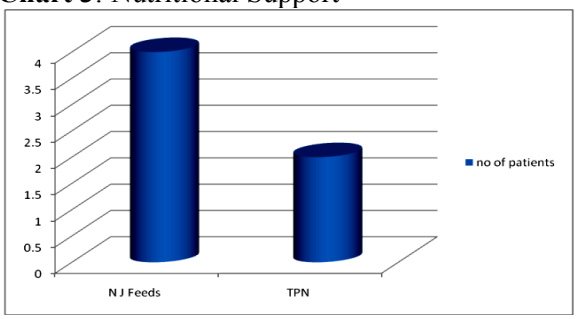
N=4 patients of biliary Pancreatitis underwent cholecystectomy. n=2 open Cholecystectomy with CBD exploration, n=2 laparoscopic cholecystectomy, n=1 in the same admission (12 days after symptom onset) and others on follow up.

Chart 2: Surgical procedures done in the patients



Nutritional support was given to 6 patients with severe acute pancreatitis. N=4 patients had naso – jejunal (NJ) feeding ranging from 6 to 25 days and 2 patients were given total parenteral nutrition (TPN) ranging from 10 to 44 days. Hospital stay and ICU care**:** The median hospital stay was 12 days (Range – 3 to 65 days). The median hospital stay in severe cases was 23.5 days while in mild cases was 10 days. All patients were initially admitted and managed in the ICU and gradually shifted to general wards as their clinical condition was improving.

Chart 3: Nutritional Support



Discussion

This study was conducted at Prathima Institute of Medical Sciences, Karimnagar, Telangana a tertiary care center with round the clock radiology and endoscopy services. As the pancreatic surgical interventions are limiting here high risk and affordable patients were referred to centers were expertise in pancreatico-biliary diseases is available. In the present study acute pancreatitis was found to be more common in males than in females the male to female ratio was 4:1. Toh SK et al; [8] in a prospective study from South England also have shown male preponderance and the male to female ratio was 1.32:1. In the current study we found the highest number of patients in the age group 38 – 47years. Studies have shown that the most cases of involvement of patients with pancreatitis were ranging from 21 – 67 years [9-11]. Since the peak incidence is in 4th decade of life which is considered to be most productive age group. Toh SK et al; [8] have shown younger age group was being affected. Windsor JA in their study showed the overall median age was 58 years. In the current study alcoholic pancreatitis was found to be the most commonly involved agent accounting for 62.5% of cases. The second commonest cause was Gall stone pancreatitis (12.5 %including patients with gall bladder calculi, CBD calculi, or both and sludge. No cause was found in 12.5% cases which are well within the 20 to 25% recommendation laid down by the U.K. guidelines. Garg PK et al; from North India study found gallstones were found to be the cause in 49 % cases [12].

This higher incidence may be due to the higher incidence of gallstones in the North Indian population. In our study we found n=4 (12.5%) males had a severe disease compared to 0 (0%) females n=3 of them were due to alcohol abuse and one was post blunt injury abdomen and chest wall. Toh SK et al; [8] found 32% of cases had severe disease. In our study the Glasgow scores when compared to Atlanta criteria predicted the severity in 36 (90 %) cases. The individual values of Glasgow 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 within a day or two. In our study the percentage of patients having local complications in the form of necrosis, infected pancreatic necrosis (IPN) and abscess was 7.5% compared to 32%. The median hospital stay in cases with severe disease it was 23.5 days in our study compared in to 16 days in study by Toh SK et al; [8] the median hospital stay for mild cases was 10 days in our study compared to 7 days Toh SK et al; [8] study. Improvement in management has led to a reduction in mortality rates, particularly in specialized units where technical resources and experienced personnel are available. Only one patient (2.5%) died within 4 days of admission – a post blunt trauma abdomen. The overall mortality rate in our series was 7% below the recommended rate of 10% by the U.K. guidelines [7].

Conclusion

The incidence of acute pancreatitis was found to be in a 4th decade in our study. Serum Amylase and Lipase both should be (80% sensitivity) used for diagnosis where ever possible. CT abdomen has got 100% sensitivity and it must be done in all doubt full cases. In our study alcoholic pancreatitis was the most common type. This explains the need for large scale health education programs to quit alcohol which can act as screening methods to prevent the onset or limit the severity of the disease.

Conflict of Interest: *None declared*
Source of Support: *Nil*
Ethical Permission: *Obtained*

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