



A CLINICAL STUDY OF SPECTRUM AND MANAGEMENT OF EXOCRINE PANCREATIC DISEASES

General Surgery

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ABSTRACT

Pancreas is a retroperitoneal organ, present posterior to the stomach, acting as a cushion for it. It is an organ having important endocrine and exocrine functions that affect the physiology of the human body in various ways. This study was undertaken with a view to understand the spectrum of exocrine pancreatic diseases ranging from acute pancreatitis to malignancy of pancreas. This study was a retrospective one, carried out over a duration of 4 years from 2008 till 2012. The patients were followed up for a period of one, three and six months, post discharge. 68 patients were evaluated with a male to female ratio of 3:1. There were 40 patients of acute pancreatitis, 12 patients of chronic pancreatitis, 2 cases of chronic calcific pancreatitis, 11 patients of pancreatic adenocarcinoma and 2 cases of pancreatic divisum. Gall stone pancreatitis found to be most common cause for acute pancreatitis, followed by alcohol. Most common complication noted following acute pancreatitis was pancreatic pseudocyst. Abdominal ultrasound was helpful in detecting pancreatic pathology in most of the cases (70.05%). Contrast Enhanced CT scan had 100 % sensitivity for detecting the pancreatic pathology. Mortality seen in 11 patients, 5 having severe acute pancreatitis complicated with multiple organ failure and 6 having advanced malignancy of the pancreas on presentation.

KEYWORDS

Pancreatitis, pseudocyst, malignancy, divisum.

INTRODUCTION

Pancreas is most unforgiving organ in the human body, leading most surgeons to avoid even palpating it, intra – operatively, unless necessary. Hidden in retroperitoneal space, pancreas was considered a mysterious organ in the past. Acute pancreatitis is the most common affection of the pancreas, with its wide variety of presentation, difficult diagnosis and frequently emergency presentation, it is vital to know the accurate imaging modality and vital care at the earliest and if required referral to the higher centers for advance care^[1].

Another common affection of the pancreas is chronic pancreatitis which is a progressive and often irreversible inflammatory and fibrotic disease. In moderate to severe forms, CP can have a debilitating clinical course due to chronic abdominal pain, attacks of acute pancreatitis, malnutrition and related complications including pancreatic malignancies, with difficult long term control of pain and pancreatic insufficiency^[1,2].

Cancer of the pancreas is one of the leading cause of cancer death worldwide with less than 5% five year survival rate, over 200000 people die annually of Ca pancreas worldwide. The cure of this disease is difficult as the disease is usually diagnosed late. Approx. 10-20% of the cancer is resectable; and after resection the median survival is 11-15 months with 5 year survival of 7-25%^[3].

MATERIAL AND METHODS

The study was a retrospective study carried out on all patients, clinically and radiologically diagnosed to be having pancreatic disease presenting to a tertiary care hospital.

Period of Study

The period of study was 4 years from June 2008 to June 2012

Study group (Inclusion Criteria)

All patients in all age group, presenting with features of pancreatic disease were included in the study.

Exclusion criteria:

- Endocrine tumors of the pancreas.
- Secondary involvement of pancreas by other malignancies.

All patients were subjected to detailed history taking, clinical examination and detailed investigations as per the institutional protocol:-

- USG Abdomen/Doppler
- Contrast enhanced CT scan of the Abdomen And Pelvis
- MRI
- Upper Gastro-intestinal endoscopy/Side viewing Endoscopy

- Endoscopic Retrograde Cholangio-pancreatography
- Biochemical work-up
- Tumour Markers (CA 19/9)

All patients of pancreatic diseases managed in a tertiary care hospital were part of the study. A total of 68 patients were studied during aforesaid period.

All the findings were recorded in form of a Proforma and later the data was analyzed for:-

- The total spectrum of the pancreatic diseases.
- Etiology of the diseases of the pancreas.
- Acute or chronic presentation, severity of the illness, management in acute ward or the intensive care unit,
- Requirement of surgery
- Total and disease wise mortality.
- Follow up after one month, three months and six months.

OBSERVATION AND RESULTS

The study, spectrum of pancreatic diseases was a retrospective one conducted from June 2008 to June 2012 in which 68 patients were studied having exocrine pancreatic pathology with a male to female ratio of 3:1.

Spectrum of Pancreatic Diseases

The clinical spectrum of the total pancreatic diseases in this study was as follows:-

- Acute pancreatitis : - 40 cases (58.82%)
- Chronic pancreatitis : - 12 cases (17.64%)
- Carcinoma pancreas : - 11 cases (16.17%)
- Chronic calcific pancreatitis : - 03 cases (4.41%)
- Pancreas Divisum : - 02 cases (2.94%)

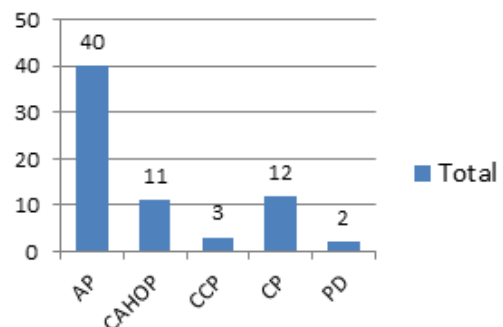


Figure no. 1 – Showing Spectrum of Pancreatic Diseases

AP – Acute Pancreatitis, CP – Chronic Pancreatitis, CAHOP – Carcinoma Head Of Pancreas, CCP – Chronic Calcific Pancreatitis, PD – Pancreatic Divisum.

Etiology

The causes for the most common affection of pancreas found in the study, that is, acute pancreatitis are as under –

- 1) Gall stones: - 18 cases (45%)
- 2) Alcohol induced: - 11 cases (27.5%)
- 3) Idiopathic: - 10 cases (25%)
- 4) Traumatic: 01 case (2.5%)

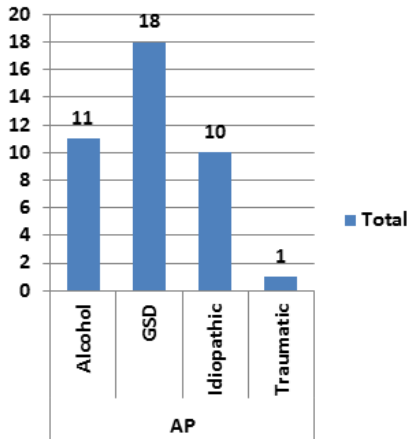


Figure number 2 – showing etiology for acute pancreatitis

GSD – Gall Stone Disease, AP – Acute Pancreatitis

Alcohol was identified as the causative agent in 8 cases (75%) of chronic pancreatitis and no cause was found in 4 cases (25%) of chronic pancreatitis.

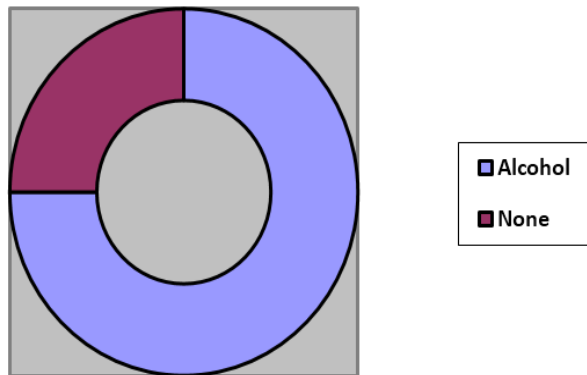


Figure no. 3 – showing etiology for chronic pancreatitis

Presentation, Severity and Management

The following table gives an account of management of acute pancreatitis done in this study:

Table no. 1 – showing the outcome of various patients with acute pancreatitis in this study, MODS – Multiorgan failure syndrome, ICU – Intensive Care Unit

Severity of Acute Pancreatitis	Mild	Severe	
No. of Male patients	16	7	
No. of Female Patients	10	7	
Total number of patients (40)	26	14	
Complications	Pseudocyst	3	5
	MODS	0	5
	Necrosis	0	1
Management	Pseudocyst	Conservative	Conservative + cysto-gastrostomy
	MODS	0	ICU + Ventilatory support
	Necrosis	0	Necrosectomy

The following table shows the management of chronic pancreatitis in this study –

Table no. 2 – showing the outcome of various patients with chronic pancreatitis in this study

	Acute on Chronic Pancreatitis	Chronic Pancreatitis	
No. of Male patients	6	2	
No. of Female Patients	3	1	
Total number of patients (12)	9	3	
Complications	Pseudocyst	3	0
Management	Pseudocyst	Conservative + cysto - gastrostomy	0

Chronic Calcific Pancreatitis

Of the 3 patients having chronic calcific pancreatitis, 2 were female and 1 was male, with endocrine insufficiency in the form of brittle diabetes in 1 female patient. All were managed conservatively.

Malignancy of the Pancreas

In this study, 11 cases of carcinoma pancreas (16.2%) were encountered, all having carcinoma head of pancreas. CA19/9 levels were raised in 7 cases and normal in 4 cases. 6 cases presented with obstructive jaundice, 1 case was incidentally detected while undergoing routine check-up. 6 cases were inoperable at the time of diagnosis, while 5 patients underwent Whipple's Surgery for head of pancreas malignancy. In this study all the inoperable cases of carcinoma pancreas received adjuvant chemotherapy and there was 100 % mortality with average life span of 04 months.

Mortality

The overall mortality in this study was of 11(16.2%) out of 68 patients, the mortality break-up was as follows:-

- 1) 6 cases of carcinoma pancreas died out of total 11 cases.
- 2) 5 cases of acute severe pancreatitis out of total 40 cases.

DISCUSSION

Patients with the diseases affecting the pancreas demands considerable resources in the form of imaging, investigations, endoscopy, intensive care support, and surgery.

This study was conducted in the tertiary care center where all the cases were managed under the supervision or directly by the trained surgeons, all imaging was done and reported by expert radiologists, medical oncologists formed the part of the carcinoma management team and the patients were taken care by team of dedicated intensivists in the intensive care unit.

Spectrum of Exocrine Pancreatic Diseases

As per the present study the most common affection of the pancreas is acute pancreatitis (58%), with the most common cause being the gall stone induced pancreatitis (45%) and alcohol being the 2nd most common etiology (27.5%) these causes are corroborating with the world literature of 70-80% cases being the combined cause^[4]. In this study 25% of the cases were having no etiological for acute pancreatitis which is more than the world literature (15%), because in this study no further work-up for mild idiopathic cases was done.

Severity of acute pancreatitis

In the present study 65% had mild attack while 35% had severe episode of acute pancreatitis, which is well above the world literature of 80-90% cases of mild episode and 10-20% with severe episode^[4]. Present study was conducted in a tertiary center hence only the severe acute pancreatitis cases have been referred to this center.

Demographics of Pancreatic Diseases

The sex ratio of the acute pancreatitis in the present study is 3:1 which is equal to the world literature that is 2.5:1^[3]. The peak incidence of the acute pancreatitis was found at the age group of 30-45 years, which is same as various literature^[5,6,7].

Chronic Pancreatitis including calcific pancreatitis

12 cases of chronic pancreatitis were included in this study. Out of which, 3 cases (25%) presented with chronic symptoms, while 9 cases presented with episode of acute pancreatitis (75%). Out of 9 cases, 3 (33%) had severe pancreatitis and 6 cases (66%) had mild episode of acute pancreatitis. Out of the 3 cases of chronic pancreatitis, 2 had no complications or pancreatic insufficiency while 1 case had pancreatic

insufficiency in the form of brittle diabetes. 3 out of 12 cases of chronic pancreatitis (25%) developed pseudocyst, 2 of which were managed conservatively while 1 pseudocyst required cystogastrostomy. Alcohol was the etiology in 8 cases (66%) while no cause was found in rest

4 cases. In the present study there was no mortality in chronic pancreatitis group, the mentioned statistics in the present study is according to the world literature^[8,9,10,11,12].

Carcinoma Pancreas

All the cases had carcinoma head of pancreas. CA19/9 levels were raised in 7 cases (63.6%), and normal in 4 cases (36.4%) which is comparable to the world literature of sensitivity of CA 19/9 as around 60%^[13]. 6 cases presented with obstructive jaundice (54.5%) while other studies have shown jaundice as a feature in 30-40% of cases^[14]. Anorexia and weight loss was the most consistent feature seen in all the cases of pancreatic malignancy seen in 8 (72.7%) and 7 (63.7%) patients respectively. It is well corroborating with the world literature. 6 cases (54.5%) were inoperable at the time of diagnosis, while 5 patients (45.5%) underwent whipple's pancreaticoduodenectomy^[15,16].

CONCLUSION

Following conclusions can be made from the study:-

- a) The most common disease affecting the pancreas is acute pancreatitis, in this study 40 out of 68 patients presented with features of acute pancreatitis (58.82%).
- b) Males were the most commonly affected by the diseases of pancreas with M:F ratio of 3:1.
- c) Pain abdomen along with nausea and vomiting was the most common presenting symptom of the diseases of pancreas. Abdominal tenderness especially epigastric region tenderness was found in almost all cases.
- d) Gall stones were the most common cause (45%) followed by Alcohol (27.5%). 1 case was due to trauma (2.5%), and in 10 cases no cause (idiopathic) was found (25%).
- e) Out of 40 acute pancreatitis patients 17 suffered severe acute pancreatitis (32.7%). In 17 patients with severe acute pancreatitis 06 patients developed MODS (35.3%) in which 05 patients succumbed to their illness (29.4%).
- f) Pseudocyst was the most common complication in cases of acute pancreatitis i.e. 12 pseudocysts in 52 cases (23%). 9 of which required some form of drainage procedure (47.05%).
- g) 11 cases of carcinoma pancreas were included in the study out of which 5 cases were operable and underwent whipple's pancreaticoduodenectomy. In 6 cases only palliative procedure was done (54.54%).
- h) 100% of the cases of carcinoma pancreas were adenocarcinoma.
- I) The overall mortality in the study was 11, in which acute severe pancreatitis caused 5 deaths and carcinoma pancreas claimed 6 lives.

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