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A Prospective Study of Diagnosis and Management Options of Chronic Pancreatitis in a Tertiary Care Hospital

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Abstract---Introduction: Chronic pancreatitis is an inflammatory condition that results permanent structural changes in the pancreas which leads to impairment of exocrine and endocrine function. This is fundamental basis why patients with this disorder commonly present with abdominal pain or maldigestion, or both. Pain is the cardinal feature of chronic pancreatitis, its presentation varies significantly among patients. The classic pain is located in epigastrium, It radiates to the back, and is associated with oral intake, nausea, vomiting, and is relieved by sitting forward. Materials and Methods: A prospective study was conducted at Department of General Surgery, Tertiary care hospitals in North India from February 2021 to January 2022 (1 year). Patients with malignant lesions of pancreas with chronic pancreatitis were included in the study. 100 cases of chronic pancreatitis, prospectively with an average follow up of 1 year from February 2021 to January 2022 (1 year). Data collection was done by collecting chronic pancreatitis cases from hospital database. The case files of all these patients were studied in detail regarding the onset and duration of the disease, pain status at time of acute onset, alcohol history,

analgesic requirements, exocrine and endocrine dysfunction and number of hospital admissions.

Keywords---abdominal pain, anorexia, chronic pancreatitis, ERCP, maldigestion, vomiting.

Introduction

Chronic pancreatitis is an inflammatory condition that results permanent structural changes in the pancreas which leads to impairment of exocrine and endocrine function. This is fundamental basis why patients with this disorder commonly present with abdominal pain or maldigestion, or both. Pain is the cardinal feature of chronic pancreatitis, its presentation varies significantly among patients.¹ The classic pain is located in epigastrium, It radiates to the back, and is associated with oral intake, nausea, vomiting, and is relieved by sitting forward. Many patients fail to exhibit this classic pattern, this is why chronic pancreatitis must be included in the differential diagnosis of any unexplained chronic abdominal pain. Unfortunately, the treatment of pain in these patients is difficult as it is often complicated by alcohol misuse, narcotic dependence, and psychological factors.²

The estimated incidence is about 3% of cases presenting with pain abdomen in the UK. The hospital admission rate for acute pancreatitis is 9.8/10000 per year in UK and annual incidence may range from 5-50/100000 worldwide.³ Etiologic factors are sought and can be treated, if possible, but operative therapy essentially has no role in the care of these patients. Those with severe and necrotizing pancreatitis require intensive therapy, which may include wide operative debridement of the infected pancreas or surgical management of local complications of the disease.⁴ whereas early aggressive debridement was commonly used for all patients with pancreatic necrosis in the past, now most pancreatic surgeons have adopted a more conservative algorithm of selective and delayed pancreatic debridement.⁵

Despite the considerable amount of research underway relating to chronic pancreatitis, its pathophysiology mechanisms remain incompletely understood. This has led to the development of several models of experimental pancreatitis with which its etiology, pathophysiology and treatment regimens are being explored.⁶ This study was designed to study the natural history, clinical presentation, etiology and management of chronic pancreatitis in a community hospital, to study the clinical and investigative methods for assessing the severity of chronic pancreatitis, to assess conservative and surgical methods of management of chronic pancreatitis and to study the impact of surgical intervention on endocrine and exocrine insufficiency, as well as pain.

Materials and Methods

Study design: A prospective study.

Study location: Department of General Surgery, Tertiary care hospitals in North India.

Study Duration: February 2021 to January 2022 (1 year).

Inclusion criteria: Patients with malignant lesions of pancreas with chronic pancreatitis were included in the study.

100 cases of chronic pancreatitis, prospectively with an average follow up of 1 year from February 2021 to January 2022 (1 year).

Data collection was done by collecting chronic pancreatitis cases from hospital database. The case files of all these patients were studied in detail regarding the onset and duration of the disease, pain status at time of acute onset, alcohol history, analgesic requirements, exocrine and endocrine dysfunction and number of hospital admissions. Investigations and interventions details were noted. Questionnaire for pain scoring was prepared. All the patients were called back to hospital and were asked to fill questionnaire.

Prospectively data collection was done on admission. Detailed history was taken and thorough clinical examination was done (BMI/Icterus were given special consideration). The hematological and biochemical investigations were carried out during admission. These included complete blood counts, liver function tests in patients with icterus, blood sugars, blood urea, serum creatinine, serum electrolytes, serum amylase, urinary amylase, glycosylated Hb for diabetic patients, CA 19-9 level in patients with abnormal liver function test, 24 hour fecal-fat test.

The chest radiographs were carried out in all the patients in standing position. Abdominal radiograph were carried out to look for pancreatic calcification. Abdominal sonography (USG) was done. Upper gastrointestinal endoscopy (OGD scopy) was advised to rule out acid peptic disease in suspected patients. Contrast enhanced CT scan abdomen was carried out in all 100 patients for evaluation of pancreatic anatomy. ERCP (endoscopic retrograde cholangiopancreatography) was used as a diagnostic and therapeutic tool. EUS (endoscopic ultrasonography) was done in cases with normal CT findings to know other cause of chronic pancreatitis. Secretin MRCP (magnetic resonance cholangiopancreatography) was advised in those patients in whom both CT and EUS was normal.

The patients were followed up with clinical assessment, insulin requirement, any history of alcoholism, blood sugars, BMI charting, 24-hour stool-fecal fat test, USG of abdomen and further imaging when required.

Results

A total of 100 patients were studied prospectively in a tertiary care hospital in North India with a follow up of 1 year. Male patients were 90 (60%), females were 60 (40%).

Table 1
Gender distribution

S.No	Gender	Number (%)
1	Male	60 (60%)
2	Female	40 (40%)

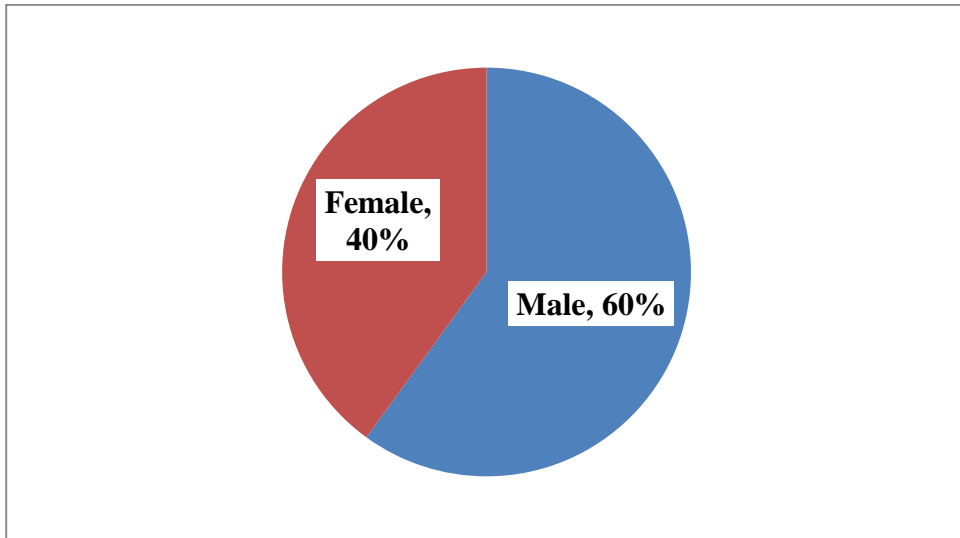


Figure 1. Gender distribution

Table 2
Age distribution

S.No	Age	Number (%)
1	30-40 years	15 (15%)
2	41-50 years	27 (27%)
3	51-60 years	34 (34%)
4	61-70 years	14 (14%)
5	≥71years	10 (10%)

Out of 100 patients, 15 (15%) were 30-40 years, 27 (26.6%) were 41-50 years, 51(34%) were 51-60 years, 21 (14%) were 61-70 years, 15 (10%) were ≥71years.

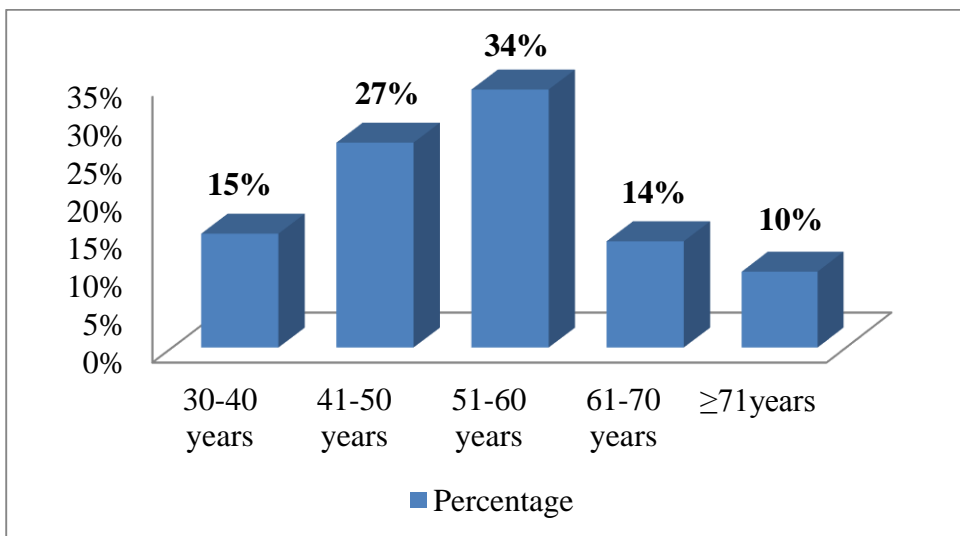


Figure 2. Age distribution

Table 3
Etiology of chronic pancreatitis

S.No	Etiology	Number (%)
1	Alcoholic	40 (40%)
2	Idiopathic	26 (26%)
3	Hypertriglyceridemia	12 (12%)
4	Hyperparathyroidism	10 (10%)
5	Biliary tract calculi	9 (9%)
6	Ampullary stenosis	3 (3%)

Alcohol abuse was previously reported to account for 40 percent of cases of chronic pancreatitis, but the association between alcohol and chronic pancreatitis is complex and these high percentages may be lower in some countries. Very high protein or fat diets, for example, have been implicated, although this hypothesis was refuted in at least one report. Another hypothesis is that patients at risk for pancreatitis have a genetic predisposition that increases susceptibility to injury from toxins, such as alcohol. Cigarette smoking also appears to increase the risk of disease progression. In our study alcohol was the largest subgroup affecting 40% people followed by Idiopathic subgroup.

Table 4
Symptoms of chronic pancreatitis

S.No	Symptoms	Number (%)
1	Nausea	16 (16%)
2	Vomiting	18 (18%)
3	Abdominal pain	73 (73%)
4	Steatorrhea	5 (5%)
5	Weight loss	44 (44%)
6	Jaundice	17 (17%)
7	Diabetes	28 (28%)
8	Asymptomatic	16 (16%)
9	Anorexia	27 (27%)

The most common symptom of chronic pancreatitis is abdominal pain. However, the pain may follow different patterns in different people, and about 20 percent of people with chronic pancreatitis do not have any pain at all. In our study abdominal pain is the commonest symptom 73.33% followed by weight loss, diabetes, anorexia, vomiting, jaundice, nausea, asymptomatic and steatorrhea.

Discussion

In this prospective study of 100 patients of chronic pancreatitis, we observed the age of onset, etiology, clinical presentation, exocrine and endocrine dysfunction over an average period of 1 year in a Tertiary care hospital in North India. Mean age at diagnosis was 45±65 years. In idiopathic chronic pancreatitis, a bimodal age distribution has been reported, designated as early-onset form (median age 19.8years) and late-onset form (median age 54.7 years). The mean age was 38.6±12.1 years by Balakrishnan et al where as in our study the mean age of 43.5

years was calculated. In population studies, males are affected more commonly than females (6.7 versus 3.2 per 100,000 population).⁷

Type A patients would be managed without resorting to endotherapy or surgery. The Gabrielli study, even though it was a small retrospective analysis, was commendable for examining patients with 'type B pain'.⁸ They report 22 patients treated with endotherapy; clearing of the stones from the duct was successful in all and consisted of sphincterotomy in everyone, ESWL in 15 and stent placement in 13. However, only 6/22 (21%) were pain free at ~5 years. Wilcox noted an endoscopic placebo response rate of 38% in patients with type 2 and 3 sphincter of Oddi dysfunction and we previously noted a similar placebo response rate in patients who had chronic pancreatitis and severe pain (type B). Until a properly controlled study is done in which only appropriate patients are enrolled (type B), and compared with a control group who are treated conservatively or with surgery, endotherapy±ESWL remains an unproven therapy, a position taken even by some endoscopists. As middle ground, endoscopists should recognize that pain in most patients with chronic pancreatitis decreases over time, type A patients should be managed with conservative medical treatment (no surgery or endotherapy) and that endotherapy only should be considered for patients with type B pain, particularly if surgery is contraindicated.^{9,10} In our study Improvement in endocrine function after intervention was observed in 28% of patients and Improvement in exocrine function was seen in 65% patients after intervention at 1year follow up.

Conclusion

Surgical method and ERCP guided intervention gives superior results when compared with conservative method in management of chronic pancreatitis. It leads to improvement in endocrine function and improvement in exocrine function. So, patients with chronic pancreatitis should be offered surgery if there is persistent pain and deterioration of pancreatic functions.

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