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Original Research Article

Chronic pancreatitis: diagnosis and management options in Indian subcontinent

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ABSTRACT

Background: Chronic pancreatitis is a heterogeneous disease. More research efforts are needed to clarify further whether individuals with chronic pain due to pancreatitis report a poor quality of life that necessitates intervention services. In this study, we sought to ascertain the clinical profile of subjects with chronic pancreatitis in India, especially with regard to risk factors, clinical features and therapeutic modalities.
Methods: 50 patients of chronic pancreatitis were studied, both prospectively and retrospective. Investigations and interventions details were noted. Questionnaire for pain scoring was prepared. Persistent pain or recurrent episodes of acute pain interfering with normal lifestyle were the criteria for intervention.
Results: The most common symptom of chronic pancreatitis is long-standing pain in the middle of the abdomen. 25 patients underwent intervention in view of severe pain. In our study improvement in endocrine function after intervention was observed in 27% of patients and improvement in exocrine function was seen in 60% patients after intervention at 2 yearly follow up.
Conclusions: Surgical method and ERCP guided intervention gives superior results as compared to conservative method in management of chronic pancreatitis.

Keywords: Chronic pancreatitis, Endocrine function, Endoscopic sphincterotomy, ERCP

INTRODUCTION

Chronic pancreatitis is a heterogeneous disease. Worldwide, alcoholism is the most common cause of chronic pancreatitis. However, in many tropical countries like India, the etiology frequently includes so-called 'tropical chronic pancreatitis'.[1-3] Genetic mutations arc responsible for a proportion of subjects with tropical chronic pancreatitis, although the majority of such patients do not have mutations.[4] Clearly, any understanding of the complexity of chronic pancreatitis in India necessitates a study of the association between clinical patterns and risk factors of the disease as a first step.

More research efforts are needed to clarify further whether individuals with chronic pain report a quality of life that necessitates intervention services. This study was designed to document the level of pain reported and quality of life from individuals with pancreatitis. The association of these two factors will allow researchers to explore whether intervention in this population is warranted, as well as eventually to develop a protocol for targeting patients who would benefit based on these variables

There has been no systematic nationwide study on the clinical profile of subjects with chronic pancreatitis from the Indian subcontinent, although many sporadic reports from some regions exist in the medical literature.[5-12] In this study, we sought to ascertain the clinical profile of subjects with chronic pancreatitis in India, especially with

regard to risk factors, clinical features and therapeutic modalities.

This study was planned 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.

METHODS

This study was carried out in a community hospital and analysed 50 cases of chronic pancreatitis, retrospectively and prospectively with an average follow up of 2 years from July 2016 to November 2018.

Inclusion criteria

Patients presenting with malignant lesions of pancreas associated with chronic pancreatitis were also included in the study.

Retrospective data collection was done by finding out 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 on 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 50 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.

Treatment protocol

All symptomatic patients were started on enzyme supplementation at the time of diagnosis. Capsule Creon 10000 1 to 3 capsules were prescribed with each meal. Each Creon capsule contains 150 mg pancreatin IP equivalent to- Lipase 10000 Ph. Eur. units (10000 USP units). Amylase 8000 Ph. Eur. Units (33200 USP units) and protease 600 Ph. Eur. units (37500 USP units).

Persistent pain or recurrent episodes of acute pain interfering with normal lifestyle were the criteria for intervention.

Follow up

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

There were total of 50 cases of chronic pancreatitis studied prospectively and retrospectively in a community hospital with a regular follow up and close observations over a period of two years.

Sex incidence

The male: female ratio was 2:1 (34 male:16 female).

Age incidence

Mean age was 45.5 years. Table 1 shows etiological factors found in our patients. Table 2 is showing incidence of various symptoms found in our patients.

Table 1: Etiology of chronic pancreatitis.

Etiolgy	No. of patients	Percentage
Alcoholic	18	36
Idiopathic	13	26
Hypertriglyceridemia	6	12
Hyperparathyroidism	5	10
Biliary tract calculi	5	10
Pancreatic divisum	3	6
Ampullary stenosis	1	2

Intervention

A total 25 patients underwent intervention in view of severe pain. Longitudinal pancreatico-jejunostomy

(Puestow's) was done in 9 patients, ERCP was done in 15 patients, Whipples surgery was done in 1 patient and double by-pass (gastro-jejunostomy and choledocho-jejunostomy) along with intraoperative biopsy followed by chemotherapy was given in 1 patient. Out of these 25 patients, 1 patient was subjected to both ERCP followed by pancreatico-jejunostomy as there was persistence of pain even after ERCP. 6 patients with pancreatic duct stricture were subjected to balloon dilatation and stenting by ERCP, 3 patients with pancreatic divisium have undergone minor papilla sphincterotomy by ERCP. 4 patients have been treated by ESWL followed by stone removal and stenting by ERCP, 1 patient of ampullary stenosis was treated by sphincterotomy and stenting by ERCP. 24 patients out of 25 patients have good pain relief (96%) after intervention except 1 who continues to have alcohol and pain score of 3 at 2 yearly follow-up.

Complications

10 patients developed complications. 6 patients developed pseudocyst of pancreas 3 developed ascites, 2 developed malignancy. 1 patient has both ascites and malignancy

Table 2: Symptomatology of chronic pancreatitis.

Symptoms	No. of patients	Percentage
Abdominal pain	41	82
Steatorrhea	2	4
Weight loss	26	52
Jaundice	10	20
Diabetes	17	34
Asymptomatic	8	16
Nausea	11	22
Vomiting	11	22
Anorexia	17	34

DISCUSSION

In this retrospective and prospective study of 50 patients of chronic pancreatitis, we observed the age of onset, etiology, clinical presentation, exocrine and endocrine dysfunction over an average period of 2 years.

Natural history

In aggregate, the mean age at diagnosis was 46±13 years. In idiopathic chronic pancreatitis, a bimodal age distribution has been reported, designated as early-onset form (median age 19.2 years) and late-onset form (median age 56.2 years).[13,14] The mean age was 39.7±14.1 years by Balakrishnan et al where as in our study the mean age of 45.5 years was calculated.[15] In population studies, males are affected more commonly than females (6.7 versus 3.2 per 100,000 population).[13,14]

Etiology

Alcohol abuse was previously reported to account for 70 to 80 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. On the other hand, only 5 to 10 percent of alcoholics develop chronic pancreatitis, suggesting that other factors may be important in the pathogenesis of the disease. 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.[16-19] In our study alcohol was the largest subgroup affecting 36% people followed by Idiopathic subgroup.

Clinical presentation

The most common symptom of chronic pancreatitis is long-standing pain in the middle of the abdomen. 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.[20,21]

In our study abdominal pain is the commonest symptom 82% followed by weight loss, anorexia, jaundice and steatorrhea.

Management

Amman describes 'type A pain' (short relapsing pain episodes [<10 days] separated by long pain-free intervals) or 'type B pain' (continuous pain [>1 month, >5 days a week] and requiring continuous analgesics).[20]

Type A patients would be managed by most pancreatologists 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'.[22] 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).[23] 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.[23] 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.

In our study 25 patients underwent intervention in view of severe pain, as the main complaint was dull aching pain in abdomen interfering with normal life.

Clinical methods and investigative tools

CT has sensitivity for advanced CP of 74% to 90% and specificity of 84% to 100%. Additionally, CT allows detection of CP complications including pseudocyst, splenic artery pseudo aneurysm, and biliary obstruction. The finding of pancreatic head enlargement may suggest pancreatic cancer or an inflammatory mass.[24] ERCP is a highly sensitive radiographic test for CP (sensitivity 71% to 93%; specificity 89% to 100%).[24] CT is 88.9% sensitive and 22% specific for assessing severity of chronic pancreatitis in our study. Mean BMI <18 kg/m^2 in a study by Balaknshnan et al where as in our study it is 17.92.[15]

Endocrine and exocrine function

Surgery for chronic pancreatitis does not influence exocrine pancreatic function but significantly affects endocrine function with improvement after drainage procedure but deterioration after pancreatic head resection.[25]After a median follow-up of 9.8 years, Lankisch et al observed a normal endocrine function status in alcoholic CP in only 17% of patients; 81% of the patients had moderate or severe endocrine insufficiency.[26]

In our study Improvement in endocrine function after intervention was observed in 27% of patients and Improvement in exocrine function was seen in 60% patients after intervention at 2 yearly follow up.

CONCLUSION

In our study of 50 patients, with an average follow up of 2 years, abdominal pain was the most common symptom. Alcoholic pancreatitis was the largest subgroup. 50% patients were managed by surgical drainage and ERCP guided interventions. BMI was strong indicator of exocrine function of pancreas in cases of chronic pancreatitis with sensitivity (100%) and specificity (50%) at 2 yearly follow up. USG is 50% sensitive and 77.5 % specific for assessing the severity of chronic pancreatitis at presentation. CT is 88.9% sensitive and 22% specific for assessing severity of chronic pancreatitis at presentation. Surgical method and ERCP guided intervention gives superior results as compared to 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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