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Research Article

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

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Abstract
Introduction: Constant inflammation and irreversible pancreatic tissue destruction are hallmarks of the disease of chronic pancreatitis, which results in the gradual loss of both exocrine and endocrine function. It is a multifactorial disease, with a wide range of symptoms and geographic variation. The incidence of chronic pancreatitis in the western population ranges from 8 to 10 cases yearly per 100,000 population, and the overall prevalence is 27.4 per 100,000 per year. According to a recent survey conducted in various countries in the Asia-Pacific region, chronic pancreatitis is prevalent in Southern India, with 114-200 cases per 100,000 people. In the Indian subcontinent, there has been no systematic nationwide study on the management of clinical profiles.
Materials and Methods: 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 March 2024 to February 2025 (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.
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%). 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.
Conclusion: Surgical methods 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.

Key Words: Chronic pancreatitis, Constant inflammation, surgical method.

INTRODUCTION

Constant inflammation and irreversible pancreatic tissue destruction are hallmarks of the disease of chronic pancreatitis, which results in the gradual loss of both exocrine and endocrine function. It is a multifactorial disease, with a wide range of symptoms and geographic variation.[1] the incidence of chronic pancreatitis in the western population ranges from 8 to 10 cases yearly per 100,000 population, and the overall prevalence is 27.4 per 100,000 per year. According to a recent survey conducted in various countries in the Asia-Pacific region, chronic pancreatitis is prevalent in Southern India, with 114-200 cases per 100,000 people. In the Indian subcontinent, there has been no systematic nationwide study on the management of clinical profiles.[2]

Some of the possible causes of chronic pancreatitis include alcohol abuse (malignancy or stones), ductal obstruction (cystic fibrosis or hereditary pancreatitis), chemotherapy and autoimmune diseases such as SLE or pancreatitis.[3] According to recent research, the disease may be caused by a lack of certain vitamins and antioxidants. Drinking alcohol is the most common cause. Protein secretion from acinar cells increases, resulting in ductal obstruction, acinar fibrosis, and atrophy as a

result of the alcohol. Chronic pancreatitis appears to be caused by a combination of genetic and environmental factors. Several genes have been linked to pancreatitis susceptibility mutations.[4]

Chronic pancreatitis is thought to be caused by one of two different pathogens. Impaired bicarbonate secretion, which is unable to respond to increased pancreatic protein secretion, is one possibility. Plugs are formed within the lobules and ducts as a result of this abundance of proteins. Calcification and stone formation are the results of this process. The other theory proposes that digestive enzymes in the pancreas are activated intraparenchymally (possibly due to genetics or external influences such as alcohol).[5]

MATERIAL AND METHODS

Study design: A prospective study.

Study location: Department of General Surgery, Sri Lalithambigai Medical College and Hospital, Chennai, Tamilanadu.

Study Duration: March 2024 to February 2025 (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 March 2024 to February 2025 (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.

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 Sri Lalithambigai Medical College and Hospital, Chennai, Tamil Nadu with a follow up of 1 year. Male patients were 90 (60%), females were 60 (40%). 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.

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.

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

Table 1. Gender 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%)

Table 2. Age distribution

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%)

Table 3: Etiology of chronic pancreatitis

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.[6] 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'. 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.[8] 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.[9] 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 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.[10]

CONCLUSION

Surgical methods give 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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