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Original Article

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Clinical and Demographic Profile of Chronic Pancreatitis: A Retrospective Study in Bangladesh

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Abstract

Introduction: *Chronic pancreatitis is characterized by irreversible damage to the pancreas that leads to pain and/or exocrine and endocrine insufficiency. In this study, we investigated the demographic profile, clinical feature and therapeutic modalities of chronic pancreatitis in Bangladesh.* ***Materials and Methods:*** *This is a retrospective hospital-based study. All patients admitted with chronic pancreatitis in Gastroenterology department of two tertiary care hospital from Jan. 2019 to Dec.2022 were included in this study.* ***Results:*** *A total of (n=106) patients were enrolled in this study with a median age of 17.67 ±15.47 years. Abdominal pain was a presenting symptom in most of the cases (89.6%). Forty-two patients (39.6 %) had diabetes mellitus. Ductal dilatation (48.11 %) and pancreatic calcification (51.89 %) were the most common ultrasonological findings. All the patients were receiving medical treatment. Two patients undergone pancreato-jejunostomy & nine patients (8.5 %) received endo therapy. Out of complications, seven patients (6.6 %) had evidence of pseudocyst, six patients (5.66%) had biliary obstruction & four patients (3.77%) had ascites.* ***Conclusion:*** *In this study, idiopathic chronic pancreatitis (CP) was observed as the most common & should be treated by multidisciplinary team.*

Key words: *Chronic pancreatitis, Abdominal pain, Pancreatic calcification.*

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Introduction:

Chronic pancreatitis (CP) is a chronic inflammatory disease of the pancreas characterized by irreversible morphological changes. Typically, CP presents with abdominal pain and/or exocrine & endocrine insufficiency[1]. CP is widely prevalent in Asia with a reported prevalence of 125/100,000 population from a study in India[2]. Chronic alcohol abuse is the most common cause in the west[3]. In a large proportion of patients with chronic pancreatitis, no etiology can be identified, and they are labeled as having idiopathic chronic pancreatitis. An idiopathic, nonalcoholic form of chronic calcific pancreatitis is the most common in Bangladesh. Tropical pancreatitis (TP) refers to a severe type of idiopathic chronic pancreatitis that develops in children in tropical regions of Africa and southern Asia. Phenotypically TP is subdivided into fibro calculous pancreatic diabetes (FCPD) and tropical calcific pancreatitis without diabetes mellitus (TCP). One study found that, SPINK1 mutations are associated with FCPD in Bangladesh[4]. The presenting symptom of most patients with chronic pancreatitis is abdominal pain, usually epigastric, dull and constant in nature. It is almost always localized in the upper half of the abdomen, from which it can radiate directly through to the back. Initially the duration of pain is quite variable, ranging from several hours to several days, but as the disease

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progresses the attacks become more frequent and pain-free intervals decrease[1]. In some patients, chronic pancreatitis can be entirely silent, patients may present with the sequelae of exocrine or endocrine insufficiency[1]. Early diagnosis have some benefits, like- alleviating the pain and slowing the progression of disease by using various treatment alternatives e.g. alcohol abstinence, smoking cessation, analgesics, neuropathic drugs, pancreatic enzyme and antioxidants[5]. Many serious complications such as jaundice, duodenal obstruction, pseudocyst, diabetes, and cancer of the pancreas can be managed efficiently if the disease identified early[3].

Materials and Methods:

This is a retrospective hospital-based study. All patients with characteristic clinical features, laboratory parameters and radiological findings suggestive of chronic pancreatitis admitted in Gastroenterology Department of Sir Salimullah Medical College Mitford Hospital, Dhaka & North East Medical College, Sylhet, Bangladesh from January 2019 to December 2022 were studied. The diagnosis of CP was made on the basis of clinical, biochemical and imaging studies6. A thorough diagnostic evaluation was done for the patients with chronic abdominal pain for reaching the diagnosis. Diagnosis was established if there was evidence of pancreatic calcification on abdominal x-ray &/ ultrasonography &/ abdominal CT &/ characteristic ductal changes on Magnetic resonance cholangiopancreatography (MRCP). Glucose tolerance test & fecal fat studies were performed where indicated. Endoscopic retrograde cholangiopancreatography (ERCP) was performed in patients who were needed to treat with pancreatic endotherapy. Exclusion criteria: Children below the age 10 years or less, diagnosed as acute pancreatitis, gall stone disease, pancreatic carcinoma, cardiac disease or other co-morbid condition were excluded from this study. Informed written consent from patients were obtained as per institutional policy and this study was approved by the institutional review board. Data were recorded in a predesigned form & obtained by retrospective review of medical records & analyzed by SPSS-22. P value <0.05 was accepted as significant. The summarized data were interpreted accordingly & was presented in the form of tables. Categorical data were tested with chi –square test & continuous data were tested with unpaired t –test.

Result:

A total of 106 patients were enrolled in this study. Most of the patients were young, with a mean age of 17.67±15.47 years. Of the 106 cases 61(57.5%) were male. Among them 74(69.81%) hailing from rural area & most were belonging to lower middle socioeconomic condition. Detail demographic & clinical profile of study population is shown in Table-I. Abdominal pain 95(89.6%) was the most common presentation with which patients were admitted in the hospital. Though severity of pain was differed. Vomiting was seen (11.3%) cases. Abdominal tenderness was present 29(27.3%) & recurrent attacks of pain was seen 74(69.8%) patients. At the time of presentation 42(39.6%) patients had diabetes mellitus. Plain x-ray of abdomen was done in all patients & calcification was found only in 18(16.9%) patients. Ultrasound data was available in all patients. Most common findings were pancreatic parenchymal calcification 55(51.8%), dilated main pancreatic duct 51(48.1%) & inhomogeneous parenchyma 39(36.79%). CT scan of abdomen was done only 13(12%) patients & findings were dilated pancreatic duct, calcification, atrophy & pancreatic pseudocyst. MRCP was done in 6 cases & in 5 cases MPD was dilated. EUS was performed in only 05 cases. All patients were receiving medical therapy, like-pancreatic enzyme supplements and opioids for pain. Two of them had undergone surgery (pancreatojejunostomy) & nine of them received endotherapy. Complications of chronic pancreatitis. Seven patients (6.6 %) had evidence of pseudocyst. Six (5.6%) of the patients had biliary obstruction & four patients had ascites. None of the patient had pancreatic neoplasm & Gastrointestinal bleeding.

Table I: Demographic characteristics of the patients (n=106)

Characteristics	Frequency	Percent
Age in years		
≤15	07	6.6%
16-30	46	43.4%
31-40	31	29.2%
41-50	11	10.4%
51-60	06	5.7%
>60	05	4.7%
Mean±SD	17.67 ±15.47	
Sex		
Female	45	42.45%
Male	61	57.55%
p value	0.02	
Residence		
Rural	74	69.81%
Urban	32	30.19%
p value	0.12	
Occupation		
Service	12	11.32%

Business	22	20.75%
Student	10	9.43%
Farmer	24	22.64%
Housewife	27	25.47%
Day labor	03	2.83%
Unemployed or dependent	08	7.55%
Socioeconomical status		
Poor	17	16.04%
Lower middle class	53	50%
Higher middle class	36	33.96%
Rich	00	
BMI		
Normal	51	48.11%
Under nourished	35	33.02%
Obese	18	16.98%
Morbidity obes	02	1.89%

Table II: Clinical presentation of the patients (n=106)

Clinical presentation	Frequency	Percent
Pain	95	89.62%
Vomiting	12	11.32%
Fever	05	4.72%
Tenderness	29	27.36%
Feature of malabsorption	02	1.89%
History of previous attack	74	69.81%
Weight loss	35	33.02%
DM	42	39.62%
HTN	14	13.21%
Elevated pancreatic enzyme	31	29.25%

Table III: USG of the patient (n= 106)

	Frequency	Percent
Inhomogeneous	39	36.79%
Atrophy	09	8.49%
Pancreatic calcification	55	51.89%
MPD dilation	51	48.11%

Table IV: CT scan of the patients(n-15)

	Frequency	Percent
Atrophy	02	
Dilatation	05	
Stone/calcification	06	

Discussion:

This was an observational retrospective study done in two tertiary care hospital of Bangladesh. This study was done to find out the clinical presentation, demographic profile, management & complication of chronic pancreatitis. All consecutive patients of chronic pancreatitis admitted in hospital were included in this study. The median age of the study subjects was 17.67 ±15.47 with men comprising around 57.55% of the cases. It is noted that disease pattern was seen in a much younger population in our study. Similar observation had also been reported by Shama et al.[2] Genetic tests like cationic trypsinogen, CFTR, and SPINK1 mutation was not performed due to lack of availability and resource constraint. The role of alcohol is the cornerstone of the pathogenesis of chronic pancreatitis in western countries but in Bangladesh alcohol consumption is quite uncommon due to their religious and cultural habit. less than 1% had history of taking alcohol in this study. A multicenter study from Italy reported excessive alcohol consumption as the principal factor in 34% of CP[7]. About 26% of subjects were smoker and 28% subjects are betel nut chewer. Almost all the smokers were male. Smoking is now recognized independent risk factor for chronic pancreatitis as compared with a Hungarian article, 63% subjects were smoker[8]. The frequency of smoking is increasing in Southeast Asia.

Most of the subjects (90%) had upper abdominal pain of varying intensity. In one study this was 68% & other studies, this was 80%[8,9]. About 33% had significant weight loss. While another study showed 35% of cases[8]. Severe pain and vomiting decreased food consumption contribute to weight loss. Around 69% patient had recurrent attack which has a significant impact on the quality of life[10,11]. Diabetes was present in around 39% of the subject. In another study diabetes was present in around 68% of the patient[2]. Nearly half of these subjects, where control by diet and oral anti diabetic agent while half required insulin. None of the patient had any diabetic complications. Diagnosing chronic pancreatitis can be challenging especially in early stages. Sometimes no radiological or laboratory abnormalities can be found[8]. Plain x-ray of abdomen and transabdominal ultrasound was the key investigations of the of diagnosis because of their low cost and wide availability but the sensitivity of the transabdominal ultrasound is between 60-81% while specificity is between 72 -90%1[2,13]. CT scan and MRCP was done while diagnosis was inconclusive. The sensitivity & specificity of CT scan are 75% to 90% respectively. Due to significant morbidity and mortality

ERCP is no longer employed as a diagnostic tool. MRCP is noninvasive test which does not use ionizing radiation and provides excellent image of the pancreatic duct[8]. We done EUS in 5% cases as this have available in one of our centers. In one study EUS was used in only[7].4% of all patient[8]. This may be inadequate facilities in the country. EUS is a very sensitive diagnostic tool, allowing for the evaluation of the pancreatic parenchyma and duct system with sensitivity and specificity of 80–100%[14]. Treatment of chronic Pancreatitis is very complex. Pain is a major clinical problem. All patient receives analgesics (mostly opioid) episodically. Patient who was smoker, they were advised to stop smoking. In our study, endoscopic intervention was performed in8.49% in another study 52% of the patient received endotherapy[8]. This is due to our resource constraint and lack of expertise.

Conclusion:

Prevalence of chronic pancreatitis is high in the Asia pacific region. Early diagnosis of chronic pancreatitis is challenging in resource poor country. For awareness and recognition of the disease, there is a need for a larger population-based studies to understand the true magnitude and burden of this disease in Bangladesh.

Conflict of Interest: None.

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