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AN EPIDEMIOLOGICAL STUDY OF CHRONIC PANCREATITIS IN INDIA: A SINGLE CENTRE STUDY

Medicine

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ABSTRACT

Introduction: Recent studies in India indicate that there is change in epidemiology of chronic pancreatitis. Hence, in this study we studied the different epidemiological factors of chronic pancreatitis in an Indian tertiary care centre.

***Materials and Methods*:** Ours is a cross sectional study conducted on 50 patients admitted in the medicine department of an Indian tertiary care centre between 2017-2019 .

***Results*:** There was overall male preponderance. Most of the patients with pamcreatitis had an idiopathic cause. Second most common etiology was alcohol consumption. Most common presenting symptom was pain abdomen (100%). Pancreatic calculi were noted in 38% patients. Computed tomography was very sensitive, abnormality was noted in all patients.

***Discussion*:** Mean age of presentation was less than that of western population. Pain abdomen was present in all patients but it was very non specific. Chronic alcohol consumption was present in substantial percentage of patients. Computed tomography and ultrasonography of abdomen were very helpful investigations. Endoscopic retrograde pancreatocholangiography was by far the most specific investigation.

KEYWORDS

Calcification, Chronic Pancreatitis, Pancreatic Duct Dilation

INTRODUCTION:

Chronic pancreatitis is a chronic inflammatory condition of pancreas leading to its morphological changes causing pain and/or permanent functional loss. It is widely prevalent in Asian countries more so in India and Japan. The phenotype of chronic pancreatitis is somewhat similar to that of western countries. The prevalent types of chronic pancreatitis are idiopathic and alcoholic. Current evidence suggest that the term idiopathic tropical pancreatitis used for idiopathic pancreatitis in India is different. Tropical pancreatitis is characterized by pain, large intraductal calculi and diabetes mellitus and complicated by high incidence of pancreatic carcinoma seen in young individuals [1]. However patients having similar characteristics as tropical pancreatitis comprise only 3.8% [2].

Nevertheless, over years characteristics of chronic pancreatitis shown a change with more prevalence in older population, more incidence of milder disease, more longevity and increasing association with alcoholism and smoking.

In this study we compare the etiological factors of chronic pancreatitis in a tertiary care centre of India.

MATERIALS AND METHODS:

The present study includes patients with chronic pancreatitis managed in the medicine department of Rajendra Institute Of Medical Sciences, Ranchi during the period of 2015-2017

Selection criteria: Patients presented with persistent or recurrent upper abdominal pain with evidence of pancreatic calcification or irreversible morphological changes on ultrasonography and endoscopic retrograde pancreatography had been chosen.

Laboratory studies: the following pathological and biochemical tests were carried out

- Complete hemogram , blood sugar and blood urea and ceratinine estimation was done in all patients.
- Serum bilirubin was estimated in all cases.
- Serum amino transferase SGOT and SGPT were measured.
- Serum alkaline phosphatase, serum calcium sodium ,potassium and magnesium along with serum amylase, urinary amylase were also measured.

Radiological studies:

- ultrasonography of the abdomen was done after proper preparation using laxatives and deforming agents for two days prior to the examination. The examination was carried out after an overnight fast and whenever necessary adequate fluids were given during the tests to prepare a gastric window for the visualization of the pancreas. The ultrasonography was done with a 3.5 MHz linear transducer and the screening and reporting was done by gastrointestinal radiologist and reports were noted in proforma.
- Computed tomography of the abdomen was done at the diagnostic centre with a spiral CT.

Based on ultrasonographic and CT Scan of abdomen findings, pancreatitis was graded----

Grade of Chronic Pancreatitis	Normal pancreas
	USG/ CT Findings
Equivocal	One of the following— Pancreatic Duct dilation (2-4mm) Gland enlargement ≤ 2 times
Mild to moderate	One of the above + one of the following- PD dilatation PD irregularity Cavities < 10mm Parenchymal heterogeneity Increased echo of duct wall Irregular contour of head or body
severe	Mild or moderate +one of the Following--- Cavities > 10 mm Intraductal filling defects Calculi/ calcification Ductal stricture Ductal irregularity/ severe dilatation Contiguous organ invasion

Endoscopic retrograde cholangiopancreatography (ERCP) was done in patients with suspected chronic pancreatitis. After over might fasting patients were given sedation and a side viewing fiber optic endoscope was passed into the duodenum. Exposure was taken when indicated. The reporting was done in consultation with gastrointestinal radiologist.

- The following criteria were adopted for diagnosis and grading of chronic pancreatitis on ERCP.

Grade	Main pancreatic duct	Side branches
Normal	Normal	Normal
Mild	Normal	<3Abnormal
Moderate	Abnormal	> 3Abnormal

Severe	Abnormal with at least one of the following 1. Large cavity>10 mm 2. Ductal obstruction 3. Intraductal filling defect 4. Severe dilation or filling defect	>3 abnormal

Microsoft excel was used for data plotting and SPSS v.22 was used for data analysi

RESULTS:

There was male preponderance. Overall sex ratio Male: Female was 2.5:1. The peak incidence was in 4th and 5th decade(Table 1).

TABLE 1: Age And Sex Distribution Of Patients With Chronic Pancreatitis

Age		sex	
Mean age	Range	Male(%)	Female(%)
41	18-60	35 (70%)	15 (30%)

Chronic alcoholics accounted for slightly less than one fourth of the patients (Table 2). The average alcohol consumption was 133 gm/day for 16.6 years. No definite cause could be ascertained in more than a half of the patients. Gall stone disease, blunt trauma abdomen in the past and so called tropical pancreatitis was found in 2 patient each.

TABLE 2: Etiology Of Chronic Pancreatitis

Alcohol consumption (%)	Biliary tract disease (%)	Idiopathic (%)	Blunt trauma abdomen in the past (%)	Tropical pancreatitis (%)	Gall stone disease (%)
10 (20%)	4 (8%)	30 (60%)	2 (4%)	2 (4%)	2 (4%)

Pain abdomen was present in all patients and the primary site was in the epigastrium (Table 3). Radiation of pain towards back was noted in three fourth of the patients and in large number of patients it was relieved by stooping forward. The pain was episodic in nature with intervening pain free intervals. The duration of pain varied from 4 months to 12 years. Diabetes and steatorrhoea were other major presenting symptoms. None of the patients had jaundice, hepatomegaly, and palpable gall bladder on examination. Two patients were noted to have palpable lump in the epigastrium

TABLE 3: Clinical Presentation In Patients With Chronic Pancreatitis

Symptoms	Numbers (%)
Pain abdomen	50 (100%)
Vomiting	13 (25.4%)
Steatorrhoea	10 (20%)
Weight loss	50 (100%)
Abdominal swelling	13 (25.4%)
GI bleed	3(6%))
diabetes	15 (30%)

Radiological studies: pancreatic calcification was noted in plain x-ray abdomen in 19 out of 50 patients in only one patient. A widened C loop was noted in 1 patient with chronic pancreatitis8%). All the patients with pancreatic calcification had a duration of illness more than 3 years. Diabetes was associated with pancreatic calcification Computed tomography was done in all patients with chronic pancreatitis. All the patients showed enlargement of the gland and heterogeneous density of the parenchyma(Table 4).

TABLE 4: Computed Tomography Findings Of The Patients With Chronic Pancreatitis

Ultrasound finding	Numbr	percentage
Size normal	28	56%
Increased	22	44%
Decreased	--	----
Echogenicity normal	9	18%
Increased	29	58%
Decreased		----
heterogenous	12	24%
Pancreatic duct dilated	21	42%
Normal	29	58%
Mass	10	20%
Cyst	-----	----
Pancreas not visualised	-----	----

Endoscopic retrograde cholangiopancreatography was done in 50 patients. All the patients had abnormality of the main pancreatic duct(Table 5). Dilatation of the main pancreatic duct was noted in 50% of the patients, obstruction was noted in 34% of the patients and irregularity was noted in 16% of the patients. Abnormal side branched was noted in all the cases and in 75 % of the cases they were unfilled.

Dilatation of the common bile duct was noted in 26% of the cases in addition to pancreatogram.

TABLE 5: ERCP findings in chronic pancreatitis.

Finding	Number (total 50)	percentage
Main pancreatic duct		
Dilatation	25	50%
Obstruction	17	34%
Irregularity	8	16%
Abnormal side branches		
Unfilled	38	75%
Stunted	12	24%
CBD dilatation	13	26%

DISCUSSION:

The mean age of chronic pancreatitis is lesser than that observed in western countries. In our study it was 41 years. Comparative figures reported in the studies from the west were 49 years. The male to female ratio was higher than that reported in western countries[3]. This variation may be due to the pattern of hospital admission in our country where males far outnumbers females.

Pain was noted in all patients but it is of little help in differentiating different pancreatic diseases and intra abdominal pathology. The high sensitivity (100%) of pain abdomen in chronic pancreatitis is comparable with the observations of Olsen (1974)[4] and tendon[5]. Radiation of pain towards back is more specific for the pancreatic diseases. A large number of patients also reported relief of pain on bending forward.

Diabetes was the second most common presentation of chronic pancreatitis(30%). Steatorrhoea was noted in 20% of our patients. Recurrent pain abdomen, steatorrhoea, diabetes when occurring together was highly suggestive of chronic pancreatitis.

Serum amylase was high in half of the patients with chronic pancreatitis.

Calcification of pancreas was noted in 38% of the patients with chronic pancreatitis. It was reported upto 30% of the patients in the western countries (Grendell, 1989) whereas in India its incidence varied from 12% to 64%[6].

Ultrasonography was very informative in all the patients, all the patients revealed some abnormality. Calculi was found in 40% of the cases and ductal dilatation was noted in the same number, tendon(1987)[5] found ductal dilatation in all and calcification in 92% of his patient with chronic pancreatitis. As ours study did not yield such high positivity ERCP was required in many patients later to confirm the diagnosis of chronic pancreatitis.

Endoscopic Retrograde Cholangio Pancreatography was the most accurate diagnostic procedure in patients with chronic pancreatitis. It has sensitivity and specificity of a 100 %. It not only confirmed the duct abnormalities picked up in ultrasonography but also picked up the cases of ductal dialatation which were missed by ultrasonographic scan.

Computed tomography was accurate in diagnosing chronic pancreatitis. Tomography had no advantage over ERCP in diagnosing chronic pancreatitis.

A specific cause of chronic pancreatitis was established in 20 Cases out of 50 cases(40%) . Kaushik (1987)[6] reports a specific cause in 22 out of 81(27%) patients.

One fourth of our patients were alcoholic, a similar observation was made by Anand in Delhi[7].

CONCLUSION:

This study has proved that chronic pancreatitis is not uncommon in this region of India. Clinical features were helpful in selecting patients for

further detailed workup. Without high index of suspicion these patients were likely to be misdiagnosed. As reported from other studies from north India, our study also showed that alcohol was an important causative factor. The largest subgroup of our patients was idiopathic chronic pancreatitis. We encountered only one patient with tropical pancreatitis which was predominant cause of chronic pancreatitis in south India.

REFERENCES:

1. Balakrishnan V, Kumar H, Sudhindran S, Unnikrishnan AG, editors. Chronic pancreatitis and pancreatic diabetes in India. Kochi: Indian Pancreatitis Study Group; 2005.
2. Balakrishnan V, Unnikrishnan AG, Thomas V, Choudhuri G, Veeraraju P, Singh SP, et al. Chronic pancreatitis. A prospective nationwide study of 1,086 subjects from India. JOP.2008;9:593–600.
3. Copenhegan pancreatitis study group : An interim report from a prospective epidemiological multicenter study. Scand. J. Gastroentrol., 16 : 305,1981.
4. Oisen, H. : Pancreatitis – a prospective clinical evaluation of 100 cases and review of literature, American Journal of Digestive Diseases. 19 : 1077,1974.
5. Tandon, R.; Rai, R.R. Nundy, S. and Vasshist, S, : A study of chronic pancreatitis in the all india institute of medical sciences, new delhi. In : chronic pancreatitis in india : balkrishnan, V., Indian society of pancreatology, p. 9-14, 1987
6. Kaushik, S.P. ; vohra, R. and Verma, R. : spectrum of pancreatitis at Chandigarh. In : chronic pancreatitis in india. Balakrishnan, v. Indian journal of pancreatology, 1987.
7. Anand, B.S. : clinical profile of chronic pancreatitis in delhi. In : chronic pancreatitis in india. Balkrishnan, v. p. 17-22, Indian society of pancreatology, 1987.ss