



ETIOLOGY AND INCIDENCE OF NON-ALCOHOLIC PANCREATITIS

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ABSTRACT Alcohol remains to be most common cause of pancreatitis in this part of India where consumption of alcohol is high. Incidence of Recurrent pancreatitis was significantly high in alcoholics. Among the 75 cases, only 5 cases showed a normal USG, while 70 (93%) cases showed pancreatitis, there by showing higher sensitivity of USG in diagnosing pancreatitis. Serum lipase: amylase ratio was higher in alcoholics with value more than 3 seen only in alcoholics in our study, so further studies with larger study groups may, help to decide if it can be used as an indicator to differentiate alcoholic from non-alcoholic pancreatitis.

KEYWORDS : Etiology, Pancreatitis, Serum Amylase

INTRODUCTION

Pancreatitis, which is most generally described as any inflammation of the pancreas, is a serious condition that manifests in either acute or acute on chronic forms leading to abdominal pain. The incidence of acute pancreatitis has been reported to vary between 4.8/100000 and 24.2/100000 around the world in different studies¹.

Acute pancreatitis has a sudden onset and short duration, whereas chronic pancreatitis develops gradually and worsens over time, resulting in permanent organ damage. It may result in progressive destruction of the exocrine tissue and in some patients a loss of endocrine tissue as well. However owing to the tremendous reserve of pancreatic function, insufficiency may be subclinical at least in the beginning of the disease².

The early diagnosis of pancreatitis and its complication is still difficult and natural history as well as the prognosis of the disease remains yet to be defined of Telangana, (South India), which is one of the leading states in alcohol consumption.

AIMS & OBJECTIVES

- To study the incidence of non-alcoholic pancreatitis in 100 cases of pancreatitis presenting.
- To study the etiological factors, and investigations to detect the cause in patients with pancreatitis.
- To study the age and sex distribution of patients presenting with Pancreatitis of different etiologies.
- To compare the mean amylase, lipase and lipase: Amylase ratio in alcoholics and non-alcoholics.

MATERIAL & METHODS

A total of 100 cases of pancreatitis admitted in Tertiary Care Hospital from November 2017 to October 2019, who fulfilled the inclusion criteria were taken, Out of them, 6 patients died before all the investigations were done and 14 patients had mixed etiologies, in whom cause of pancreatitis could not be made out and 5 patients left the hospital due to different causes so, they were excluded and the remaining 75 cases were included in statistical analysis.

INCLUSION CRITERIA

- Patients admitted in our Institution with age more than 18 years
- All the patients should fulfill the diagnostic criteria.

Diagnostic Criteria

It includes clinical history s/o pancreatitis plus at least one of the following:

- Elevated serum amylase and/or serum lipase levels atleast 3 times the upper limit of normal.
- Ultrasound or CT scan suggestive of pancreatitis.

EXCLUSION CRITERIA

- Cases with age less than 18yrs were excluded.
- Cases with more than one etiological factors causing pancreatitis were excluded from the study.

RESULTS

CAUSES OF PANCREATITIS

Etiology	Number of cases
Ethanollic	45
Idiopathic	10
Gall stones	9
Hyper triglyceridemia	3
Auto immune	2
Post ERCP	2
Hypercalcaemia	1
Traumatic	1
Infections	1
Hereditary	1

RATIO OF LIPASE: AMYLASE IN ALCOHOLICS AND NON ALCOHOLICS

	Alcoholics	Non alcoholics
Lipase : Amylase	2.31	1.17

NUMBER OF ALCOHOLIC AND NON ALCOHOLIC CASES WITH SERUM LIPASE: AMYLASE RATIO MORE THAN 3:1

Lipase : amylase	Alcoholics	Non alcoholics	Total
<3	32	30	62
>3	13	0	13
Total	45	30	75

INCIDENCE OF RECURRENT PANCREATITIS IN ALCOHOLICS AND NONALCOHOLIC

	No. of Alcoholics	No. of Non alcoholics	Total
Acute	29	28	57
Recurrent	16	2	18
Total	45	30	75

SIGNIFICANCE OF DIFFERENCE BETWEEN 'MEANS' OF SERUM AMYLASE BY 'Z TEST'

Number of cases	Average	Standard deviation
Alcoholics (45)	875.2	1601.1
Non alcoholics(30)	1028.9	756.4

SIGNIFICANCE OF DIFFERENCE BETWEEN 'MEANS' OF SERUM LIPASE BY 'Z TEST'

Number of cases	Average	Standard deviation
Alcoholics (45)	2159.2	4172.2
Non alcoholics (30)	1192.1	1336.28

DISCUSSION

Although advances in pancreatic function testing and imaging procedures have broadened our knowledge of pancreatitis, the early diagnosis of acute, chronic or acute on chronic pancreatitis and its complication is still difficult. Therefore this study was undertaken to study the etiological profile of pancreatitis, and compare alcoholic and non alcoholic cases.

Recent studies have shown that lipase: amylase ratio in pancreatitis

was higher in alcoholics than non alcoholics. This study has focused on this hypothesis, to correlate with the previous studies. An attempt has been made to compare this study with other studies on pancreatitis after adopting comparable standards of diagnosis and modification.

Among the 75 cases taken for statistical analysis, 45 had significant history of alcohol consumption, while 30 were found to be non alcoholics.

In a study conducted in eastern India by Baig SJ, Rahed A⁴, published in 2008 in tropical gastroenterology, 45 patients were studied of which 33 were males and 12 were females. The age group of patients in our study was from 18yrs to 62yrs. 20 out of 45 alcoholics were less than 40 yrs old, while 21 out of 35 non alcoholics were less than 40 yrs old. The 'p' value was not significant indicating that the incidence was even in all the age groups⁵.

A prospective audit in 7 hospitals from South England (hereby referred to as South England Audit) also showed that males are more commonly affected (M:F1.32:1). In our study, Out of the 75 cases, 51 were males while 24 were females. Among these, 36 (71%) males and 9 (37%) females were alcoholics. The incidence of alcoholic pancreatitis was significantly high in males compared to females with a 'p' value of less than 0.05.

Among the non alcoholics causes, after the 10 idiopathic cases (13.6%), 9 cases had gallstones with an incidence of 12% which is actually lower than the incidence of 35-40% shown in the study done by Forskmark CE et al in 2007⁶.

Incidence of hypertriglyceridemia causing pancreatitis was 1.3 - 3.8% in the study done by Fortson MR et al in 1995⁶. It is found to be 4% in our study. Two cases (2.6%) of post ERCP, with pancreatitis were seen. Both the cases of post ERCP pancreatitis, underwent ERCP for diagnostic purpose.

Two (2.6%) cases had pancreatitis with autoimmune etiology (SLE) correlating with the study done by Wilson RH et al⁷.

One patient presented with acute abdomen and found to have acute pancreatitis and the history revealed blunt trauma to abdomen. As shown the study done by Parenti et al⁸ on infectious diseases causing pancreatitis, one patient was found to have pancreatitis of infective etiology. One case had a parathyroid adenoma and hyper calcaemia leading to pancreatitis.

One case of pancreatitis had a history of pancreatitis in the family with no other identifiable etiology, and on further evaluation was found to have 'SPINK' gene positive which was identified as the cause of pancreatitis as seen in the study of Bhatia E et al in 2002⁹.

In a prospective study of the etiology, severity and outcome of acute pancreatitis in Eastern India, etiology spectrum of pancreatitis included the following: alcoholism in 14 (41.1%), gallstones in 8 (23.5%), trauma in 6 (17.6%), idiopathic in 4 (11.7%) and post-endoscopic retro grade cholangiography in 2 (5.8%).

In a study on prevalence of acute pancreatitis and its different etiologies in South India by KG hospital and postgraduate institute Coimbatore, no etiology could be established in 40% patients while alcohol and gall stones accounted for 13 %each.

Number of smokers in this study was 45 (60%). Smoking which is considered as an independent cause of pancreatitis in various studies including those done by Lindkvist B et al¹⁰ in 2008, Yadav D et al¹¹ in 2009 and Tolstrup et al¹² in 2009, can be considered as an independent etiology, confirmation of which would need further studies in larger groups.

Alcohol was found to be associated with recurrent pancreatitis in 70 (80%) of cases in previous studies. In this study, Incidence of recurrent pancreatitis was seen in 16 (35%) cases of alcoholics compared to 2 cases (7%) of non alcoholics, with a significant p value of <0.05.

Among the 75 cases, 70 (93%) cases showed pancreatitis in ultrasonography, while only 5 cases showed normal study. This indicated the higher sensitivity of USG in diagnosing pancreatitis.

Mean serum amylase value was 841.39. It was 669.51 in alcoholics and

1013.27 in non alcoholics. Mean serum lipase was 1573.61. It was 1965.9 in alcoholics, and 1181.32 in non alcoholics. Overall lipase: amylase value was, 1.74. Mean value of lipase: amylase ratio was 2.31 in alcoholics, while it was 1.17 in non alcoholics.

A study done by Tenner SM and Steinberg W¹³, showed that mean amylase value was significantly high in non alcoholics compared to alcoholics, mean lipase was same in both groups and lipase: amylase was high in alcoholics. In this study mean amylase and lipase did not have difference of significant p value, but Lipase: Amylase ratio was significantly high in alcoholics with p value <0.05. In that study lipase: amylase ratio of more than 5 was seen (100%) only in alcoholics, while in our study the ratio of more than 3 was seen in only alcoholics.

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