



## Incidence and Etiology of Non Alcoholic Pancreatitis

### KEYWORDS

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### INTRODUCTION

Etiology of Pancreatitis continues to stir up controversy. The incidence of acute pancreatitis has been reported to vary between 4.8/100000 and 24.2/100000 around the world in different studies. Pancreatitis, which is most generally described as any inflammation of the

pancreas, is a serious condition that manifests in either acute, chronic or acute on chronic forms leading to abdominal pain. 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 disease. 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. The etiological profile of pancreatitis may be different in different parts of the world and it is therefore important that experiences from different parts of the country be recorded. Alcohol which was once thought to be most common etiology. Recent studies in western countries show that non alcoholic causes include more than 50% of causes of pancreatitis. Hence this study is needful to understand the various etiological factors, occurring in this part of Telangana. (south India), which is one of the leading states in alcohol consumption.

### AIMS AND OBJECTIVES OF STUDY

- 1) To study the incidence of pancreatitis in Gandhi Medical College and Hospital, Secunderabad.
- 2) To study the etiological factors, and investigations to detect the cause in patients with pancreatitis.
- 3) To study the age and sex distribution of patients presenting with Pancreatitis of different etiologies.
- 4) To compare the mean amylase, lipase and lipase: Amylase ratio in alcoholics and non alcoholics.

### Patients and methods:

Method of study: This is a prospective observational study.

Sample size: 100 cases of pancreatitis admitted in department of medicine 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 for different causes, so, they were excluded and the remaining 75 cases were included in statistical analysis.

Duration of study: 2years. December 2012 to november 2014.

Source of data: Cases of pancreatitis admitted in dept. of medicine were included. Detailed history was taken, physical examination was done and laboratory investigations for confirmation of diagnosis and finding out the etiology were done. For the cases in which etiology could not be found, further investigations were done.

### Inclusion criteria:

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

### DIAGNOSTIC CRITERIA

It includes clinical history s/o pancreatitis plus atleast one of the following

1. elevated serum amylase and/or serum lipase levels atleast 3 times the upper limit of normal
2. ultrasound or CT scan suggestive of pancreatitis

### Exclusion criteria:

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

### Discussion :

Acute pancreatitis is an inflammatory disease of the pancreas. Numerous etiopathological factors predisposing to pancreatitis have been identified, yet there is a need to further evaluate this entity which has significant morbidity and mortality.

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 at Gandhi Medical College and Hospital Secunderabad, 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 support 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 A, 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 40yrs old, while, 21 out of 35 non alcoholics were less than 40yrs old. The 'p' value was not significant indicating that the incidence was even in all age groups.

A prospective audit in 7 hospitals in south England (hereby referred to as south England audit) also showed that males are more commonly affected. (M:F 1.32:1). 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 pancreatitis was significantly high in males compared to females with a 'p' value of less than 0.05.

Though alcohol was thought to be the most common cause of pancreatitis, recent studies have shown that the nonalcoholic causes of pancreatitis include more than 50% of etiology of pancreatitis. In our study non alcoholic causes of pancreatitis included 40 % of cases of pancreatitis. As this study is done in a state which is found to be the top most in alcohol consumption, the results were in this manner. This study still shows that alcohol is the most common cause of pancreatitis, at least in this part of south India.

Among the nonalcoholics causes, after the idiopathic cases, 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 Forksmark CE et al in 2007, probably because the cases were taken from department of medicine and not surgery.

Incidence of hypertriglyceridemia causing pancreatitis was 1.3-3.8% in the study done by Fortson MR et al in 1995. It is found to be 4 % in our study. Two cases(2.6%) of post ERCP, with pancreatitis were seen. Both the cases of 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 al.

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 a cause of pancreatitis as seen in the study of Bhatia E et al in 2002.

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%), gall stones in 8(23.5%), trauma in 6(17.6%), idiopathic in 4(11.7%), and post ERCP in 2(5.8%).

In a study on prevalence of acute pancreatitis and its different etiologies in south Indians by KG hospital and post graduate institute Coimbatore, no etiology could be established in 40% cases, while alcohol and gall stones accounted for 13% each.

In a study from north India, gall stones were found to be the cause in 49% cases. This higher incidence may be due to the higher incidence of gall stones in the north Indian population. In most of the western studies, gall stones were found to be the most common etiology, followed by alcoholism, while in our study, alcoholism is found to be the most common etiology.

Number of smokers in the subjects of this study were 45( 60 %). Smoking which is considered as an independent cause of pancreatitis in various studies, including those done by Lindkvist B et al in 2008, Yadav D et al in 2009, and Tolstrup et al 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%) of cases of alcoholics, compared to 2 cases (7%) of non alcoholics with the 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 of "The admission serum lipase:amylase ratio differentiates alcoholic from nonalcoholic acute pancreatitis." Done by Tenner SM and Steinberg W, showed that mean amylase value was significantly high in non alcoholics compared to alcoholics, and 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.

#### Conclusions:

1. Though recent studies done in western countries have shown that non alcoholic causes include more than 50% of cases of pancreatitis, in this part of south India, it still remains the most common cause leading to 60% of cases of pancreatitis.
2. Incidence of pancreatitis was significantly higher (68%) males than females, as the percentage of alcoholics was higher among male patients.
3. Incidence of pancreatitis did not differ significantly with age, probably because pancreatitis did not depend on duration of alcohol consumption and alcoholics were distributed equally in all age groups.
4. Nicotine abuse was seen in 60% of cases of pancreatitis. Whether this can be taken as an independent cause of pancreatitis could not be studied.
5. 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.
6. Recurrent pancreatitis had significantly higher incidence in alcoholics than in non alcoholics. Among non alcoholic causes, gall stones caused higher incidence of recurrent pancreatitis.
7. Though amylase values were higher in non alcoholics, and lipase values were higher in alcoholics, mean amylase and mean lipase values did not vary significantly among alcoholics and non alcoholics.
8. Lipase:amylase values were significantly higher among alcoholics than non alcoholics indicating the propor-

tionately higher elevation of lipase in alcoholics

- Lipase:amylase ratio higher than 3 was seen only in alcoholics which may after further larger group studies be used to differentiate alcoholics from non alcoholics.

#### Strengths of the study:

- The study group included subjects of different parts of the state with different socio economic status as it was done in a tertiary referral centre.
- Etiology could be found in most of the cases.
- Results of the study were correlating with many larger group studies which were previously published.
- Significance of serum lipase:amylase ratio to f
- Differentiate alcoholic from non alcoholic pancreatitis which is a recent concept is being supported by the study which shows the need for further larger group studies for confirmation.

#### Limitations of the study:

- The study group is smaller compared to the higher incidence of the disease.
- Etiology could not be found out in all the cases, atleast few of which were labelled idiopathic due to lack of diagnostic techniques.
- The amylase and lipase values were done on day of admission, but all the patients did not reach the hospital on the first day of symptoms.

	Alcoholics	Non alcoholics
Mean amylase	669.51	1013.27

	Alcoholics	Non alcoholics
Mean lipase	1965.9	1181.32

	Alcoholics	Non alcoholics
Lipase:amylase	2.31	1.17

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