

A Prospective Observational Study of Alcohol Induced Acute Pancreatitis – A Diagnostic Approach

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ABSTRACT

Background: Acute alcohol related pancreatitis may present as an acute episode of abdominal pain, nausea and vomiting and in severe cases can be accompanied by profound metabolic abnormalities and circulatory collapse. These acute episodes may recur, often precipitated by an increase in alcohol intake. Complications such as narrowing of the common bile duct, localized leakage of pancreatic fluid and pancreatic exocrine and endocrine insufficiency may develop resulting in jaundice. **Objectives:** To evaluate the relationship between alcoholic and non-alcoholic acute pancreatitis patients and to describe the relevance of SIRS in predicting morbidity and mortality among patients.

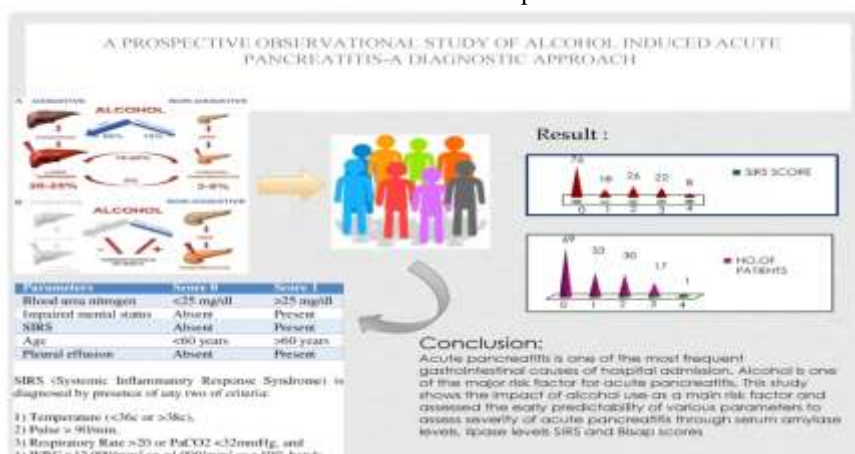
Study Design: This is a prospective observational study conducted for 6 months in Rohini super specialty hospital, Hanamkonda, Telangana.

Methodology: The patients included in this study were suffering with acute pancreatitis, both alcoholic and non-alcoholic, pregnant and paediatrics were excluded from the study.

Results: In the present study it was observed that the predominant number of patients visited the hospital with acute pancreatitis was males who fall under the age group 20-30years (30.66%). The main risk factor among these patients was found to be alcohol (87%), patients admitted with 2nd episode were more (48%), and the major complication found was fatty liver (36%).

Conclusion: The study results shows that among 150 patients the predominant number of patients visited the tertiary care hospital with acute pancreatitis are males who fall under the age group of 20-30 years, who are alcoholic, and from rural area. The SIRS score among alcoholic patients was higher than the non-alcoholic which indicates that the severity rate is higher in alcoholic patients. We conclude that the main risk factor among these patients was found to be alcohol, which leads to reoccurrence of the disease, which increases the mortality and morbidity rate of patients with pancreatitis.

Keywords: acute pancreatitis, alcohol, non-alcohol, rural area, sirs score, tertiary care hospital.



I. INTRODUCTION

Acute pancreatitis, the inflammatory disorder of the pancreas, is one of the most frequent gastrointestinal causes of hospital admission. Acute pancreatitis can either resolve quickly, or cause a systematic inflammatory response leading to a multi-organ failure and death. Despite improvements in the diagnosis of disease and treatment, the mortality rate of acute pancreatitis remains around 5%. There are two types of pancreatitis.

Acute pancreatitis: It is a sudden inflammation of the pancreas that lasts for a few days only. In this case, there is a sudden attack of acute pain in the upper abdominal area that may last for hours or days. Drinking alcohol or eating may only worsen the pain, and lying in a curled position can offer some relief. It resolves on its own.

Chronic pancreatitis: It is when attacks re-occur for a period of time, more than 6 months. The attacks cause scarring and damage to the pancreas that make it susceptible to infection and further inflammation. Some may only feel only abdominal pains throughout the years until such time that the pancreas is fully inflamed. It is usually non-resolving. The incidence of acute pancreatitis ranges from 5 to 80 cases per 100,000 persons per year, making it one of the most common gastroenterological conditions. Men comprise 60% of all cases of acute pancreatitis; 40% of all cases are seen in women. Patients with alcohol-induced pancreatitis are younger than those with acute pancreatitis.

Abdominal pain (cardinal symptom): Characteristically dull, boring, and steady; usually sudden in onset and gradually becoming more severe until reaching a constant ache; most often located in the upper abdomen and may radiate directly to the back. Nausea and vomiting, anorexia, diarrhoea, fever and tachycardia, hypotension.

II. MATERIALS AND METHODS

The study was conducted for 6 months in outpatient department in Rohini super specialty hospital, Hanamkonda, Warangal, Telangana. The study design was a prospective observational study which involved interview surveys from patients and their caretakers. The patients included in this study were alcoholic and non-alcoholic patients

who were admitted with acute pancreatitis. Patients, who were, paediatrics, pregnant women, were excluded in this study. All the relevant and necessary data was collected by interviewing patient and sometimes patient care takers. The data collected includes demographics (name, age, sex, and address), socioeconomic status of patient's family (educational status, occupation, income of the family per month) BMI, SIRS and BISAP score were recorded. The above information collected was documented in the designed data collection form. Then the data entered into Microsoft Excel database and then analysed.

III. RESULTS

In the present study it was observed that the predominant number of patients visited the hospital with acute pancreatitis fall under the age group 20-30 years (30.66%). The main risk factor among these patients was found to be alcohol. We had asked the patients about the type, amount and how often they consumed alcohol. The present study shows the extent of relationship between alcoholic and non-alcoholic pancreatitis patients and assessed the severity of disease using SIRS and BISAP score. By this assessment scores the investigators wants to bring awareness among the study subjects regarding morbidity and mortality rate and educate them regarding lifestyle modifications to improve their wellbeing.

1. **AGE WISE DISTRIBUTION:** Age wise distribution was calculated by the following formula

Where $C = 1 + 3.322 \log n$

Where i = class interval, L = large value, S = small value, n = sample size

$$i = L - S / C$$

Among 150 patients 2% fall under the age group above 70, 2.66% were from 60-70 yrs, 6.66% were from two age groups I.e. 50-60 and 10-20yrs, 23.33% were from 40-50yrs, 28% were from 30-40yrs, and 30.66% were from 20-30yrs are shown in the Table 1 given below. The data was evaluated and we observed that the age group between 20-30yrs is consuming excessive alcohol and are at high risk of developing systemic inflammatory response syndrome when compared with other age groups in the Table.

Table 1: Age wise distribution of the patients.

Age	Frequency percentage
10-20	10 (6.66)
20-30	46 (30.66)
30-40	42 (28)
40-50	35 (23.33)
50-60	10 (6.66)
60-70	4 (2.66)
Above 70	3 (2)

Number of Alcoholic and Non-Alcoholic patients

Among 150 patients 131(87%) are alcoholic whereas 19(13%)are non-alcoholic . this

shows that most of the pancreatitis is due to excess alcohol consumption.

Table 2: frequency distribution of alcoholic and non-alcoholic patients

Alcohol	Frequency percentage
Yes	131(87)
No	19(13)

Body Mass Index

Among 150 patients, 94 (63%) patients fall under the group of normal weight, 28 (19%) patients fall under over weight, and 19(13%) patients were under weight and 8(5%) patients are

obese. 55 patients out of 150 are at greater risk of death with alcohol induced pancreatitis. Under weight (or) over weight was independent risk factor for mortality in acute pancreatitis.

Table 3: Frequency distribution of body mass index of patients.

Body Mass Index	Frequency (%)
Under Weight	19 (13)
Normal Weight	94 (63)
Over Weight	28 (19)
Obese	8(5)

Lipase Levels in Patients:-

The normal level of lipase is 0-20U/L. Among 150 patients 6(4%) fall under the range 0-100U/L, 47(31.33%) were from 100-500U/L, 13(8.66%) were from 500-1000U/L, 46(30.66%)

were from above 1000U/L. The result shows that all the alcoholic induced pancreatitis patients are showing above normal levels of serum lipase which is harmful and may leads to complications like fatty liver.

Table 4: Frequency distribution of lipase levels in patients.

Range	Frequency (%)
0-100U/L	6 (4)
100-500U/L	47 (31.33)
500-1000U/L	13(8.66)
Above 1000U/L	46 (30.66)

NIL	38 (25.33)
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Amylase Levels in Patients÷

The normal level of lipase is 0-80U/L. Among 150 patients 29(19.33%) fall under the range 0-200U/L, 41(27.33%) were from 200-400U/L, 23(15.33%) were from 400-600U/L, 21(14%) were 600-800U/L, 14(9.33%) were from 800-1000U/L, 16(10.66%) were from above

1000U/L. The result shows that all the alcoholic induced pancreatitis patients are showing above normal levels of serum amylase which is harmful and may cause self-digestion of pancreas and may further leads to other complications which are shown in Table.

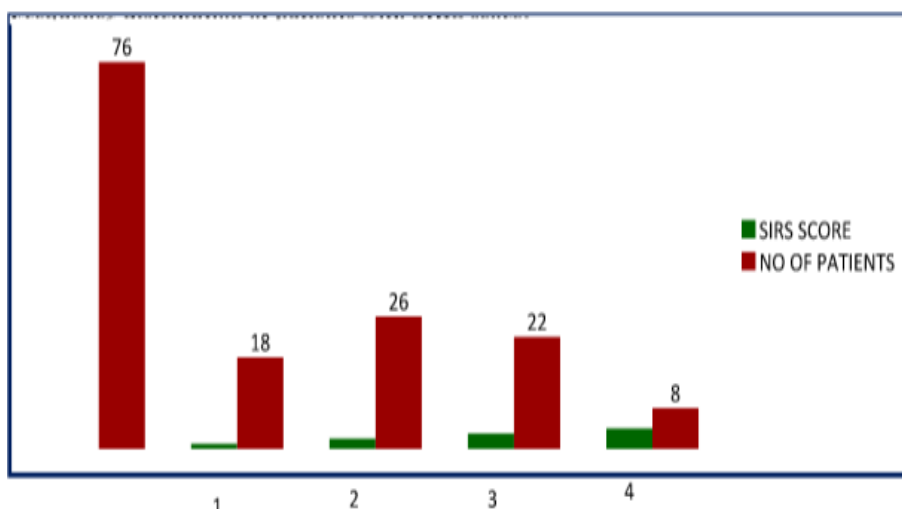
Table 5: Frequency distribution of amylase levels in patients.

Range	Frequency (%)
0-200U/L	29 (19.33)
200-400U/L	41(27.33)
400-600U/L	23 (15.33)
600-800U/L	21(14)
800-1000U/L	14 (9.33)
Above 1000U/L	16 (10.66)
Nil	6 (4)

Systemic Inflammatory Response Syndrome Score (Sirs)÷

Among 150 study subjects the SIRS SCORE is as follows. 76(50.66%) are with 0 which is normal, whereas 18(12%) with 1, 26(17.33%) with 2, 22(14.66%) with 3, and

8(5.33%) with 4 score. The result shows that the highest SIRS score is recorded for the male subjects who are alcoholic, from rural background, over weight and age group between above 50, which revels a high morbidity and mortality rate in subjects with alcoholic pancreatitis.



Figure÷ 1: Frequency distribution of patients with SIRS score.

Bed Side Index for Severity in Acute Pancreatitis Score (Bisap) ÷

Among 150 study subjects the BISAP SCORE is as follows. 69(46%) are with 0 which is normal, whereas 33(22%) with 1, 30(20%) with 2,

17(11.33%) with 3, and 4(2.66%) with 4 score. The result shows that the subjects with BISAP score more than 2 are with severe form of acute pancreatitis than the subjects with BISAP score 0-2.

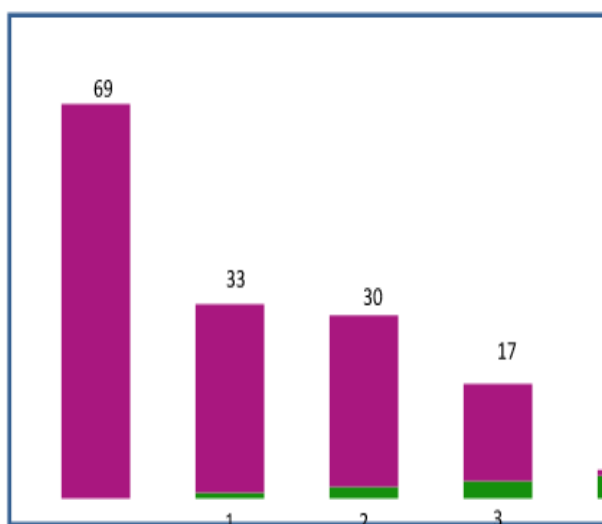


Figure ÷2: Frequency distribution of patients with BISAP score.

IV. DISCUSSION

This study was conducted in a tertiary care multispecialty hospital in the department of gastroenterology among 150 patients who were diagnosed as alcohol induced acute number of alcoholic and non-alcoholic patients, abnormalities of lipase and amylase values, SIRS score, and BISAP score were studied.

In this study was observed that predominant number of patients visited with acute pancreatitis fall under the age group 20 -30 years (30.66%). The main risk factor among these patients was found to be alcohol. The present study shows the relation to the alcoholic and non-alcoholic pancreatitis patients and assessed the severity of disease using SIRS and BISAP score. Here all patients were provided proper therapy and educated about their life style modifications. By this assessment scores, it gives the awareness among the study subjects regarding morbidity and mortality rate, educate them regarding life style modifications to improve their wellbeing.

V. CONCLUSION

In this study, we have chosen the present topic to assess the main risk factor and diagnostic parameters of acute pancreatitis.

- This study defined the impact of alcohol use and on disease risk, and a threshold for recurrent attacks of acute pancreatitis have been linked with continues with alcohol consumption.
- Alcoholic pancreatitis reduces life span in patients, and the economic impact of pancreatitis is

substantial. Efforts are needed to increase awareness of the impact of alcohol consumption and smoking on risk of pancreatitis and the benefits of cessation for primary and secondary prevention.

- This study was also conducted for assessment and comparison of early predictability of various parameters to assess severity of acute pancreatitis such as serum amylase and lipase levels SIRS, BISAP.

VI. ACKNOWLEDGEMENT:

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CONFLICT OF INTEREST

The authors show no conflict of interest

ABBREVIATIONS

BMI: Body Mass Index; SIRS: Systemic Inflammatory Response Syndrome; BISAP: Bedside Index for Severity in Acute Pancreatitis

VII. SUMMARY

Acute Pancreatitis is one of the most frequent gastrointestinal causes of hospital admission. The one of the main risk factor is consumption of alcohol. This is a prospective study of identifying of severity in progression of acute pancreatitis can be achieved by SIRS and BISAP scales. This study assesses the severity among the patients and describes the relevance in predicting morbidity and mortality in patients. Patients should be educated about the disease severity and change their lifestyle for wellbeing.

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