

**DO ALCOHOLIC PATIENTS FOLLOW ABSTINENCE AFTER ADMISSION FOR ACUTE PANCREATITIS? - AN OBSERVATIONAL STUDY**

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**ABSTRACT**

**Background & Objectives:** Acute pancreatitis is a necro-inflammatory disease that is characterized by infiltration of the pancreas by inflammatory cells and destruction of the pancreatic exocrine cells. Continuous consumption of alcohol is the most significant risk factor in a dose-dependent manner for recurrent acute pancreatitis and abstinence from alcohol prevents recurrence. The aim of this study was to find out the alcohol drinking behavior of patients at 3 months follow up after admission for acute alcoholic pancreatitis and to assess the factors that influenced the alcohol drinking behavior. **Methods:** This study was designed as a cross-sectional study. Male patients >18yrs diagnosed as acute alcoholic pancreatitis at least 3 months prior to the study were included as subjects. Alcohol drinking behavior prior to the previous admission and during the 3 months post-admission was assessed using Alcohol Use Disorders Identification Test (AUDIT) and the Short Alcohol Dependence Data (SADD). Individual and socio-environmental factors that influenced the alcohol drinking behavior were documented using a self-administered questionnaire. **Results:** A total of 60 patients were included in the study. Of the 60 patients interviewed abstinence from alcohol was noted in 23.3 % ( 14) of patients. 26.7 % ( 16) of patients reached low dependence level SADD score and 25% of patients attained "No problem drinking" AUDIT score at 3months follow up. It was also observed that age of the patient, educational status, marital status and age at first drinking were found to significantly influence the alcohol drinking behavior of the patient. **Interpretation & Conclusion:** Based on our study we conclude that a significant number of patients continue to drink following an acute attack of pancreatitis, though there is a reduction in the problem drinking and alcohol dependency. Effective motivation and addressing the social-economic problems during the de-addiction counseling at initial hospital admission for acute pancreatitis will help to improve the abstinence.

**KEYWORDS:** Abstinence, acute pancreatitis, alcohol, drinking behavior.

**INTRODUCTION**

Acute pancreatitis is a necro-inflammatory disease that is characterized by infiltration of the pancreas by inflammatory cells and destruction of the pancreatic exocrine cells. In developing countries, approximately 35% of acute pancreatitis cases and approximately 70% of chronic pancreatitis cases are associated with alcohol abuse.<sup>[1]</sup> Almost half of the patients with acute alcoholic pancreatitis develop recurrent acute pancreatitis in the long term out of which most of the episodes occur during the first year after the initial attack.<sup>[2]</sup> As there is no specific pharmacotherapy for acute pancreatitis, an effective preventive strategy is required to prevent the progression of the disease. It has been found that

continuous consumption of alcohol is the most significant risk factor in a dose-dependent manner for recurrent acute pancreatitis.<sup>[2,3]</sup>

Abstinence offers good protection against these recurrent episodes, but it is rarely achieved and nearly 50% of alcohol users who follow abstinence relapse within 3 months.<sup>[3,4]</sup> Relapse is a multi-factored phenomenon and most likely to result from a combination of factors. Studies have shown that craving was found to be the most common cause of relapse in alcohol-dependent patients.<sup>[5,6,7]</sup>

Studies regarding the change in alcohol drinking behavior in pancreatitis and factors influencing it are

sparse, especially from India. The aim of this study was to find out the alcohol drinking behavior of patients at 3 months follow up after admission for acute alcoholic pancreatitis and to assess the factors that influenced the alcohol drinking behavior thereby helping in the development of an effective preventive strategy to improve patient compliance to alcohol de-addiction.

## MATERIALS AND METHODS

The study was designed as a cross-sectional type of descriptive study. The study was conducted in JIPMER under the Department of Surgery between August 2017 and October 2017. Based on the prevalence of acute pancreatitis and hospital statistics the expected sample size was calculated as 60 during the 2 months study period. The study protocol was approved by the Institute Ethics Committee of JIPMER.

**Inclusion & Exclusion criteria:** Male patients more than 18 years of age admitted and diagnosed as acute alcoholic pancreatitis based on serum amylase and radiological evidence, at least 3 months prior to the study were included in the study. Non- alcoholic patients with no documented evidence of acute pancreatitis at discharge and patients with pancreatitis due to other causes like gallstones, drug-induced, hereditary, and chronic pancreatitis were not included in the study.

**Methodology:** All consecutive patients who attended the Surgery OPD or casualty and fulfilled the inclusion and exclusion criteria were recruited in the study. A written informed consent was obtained from all the patients. Social and demographic data of the patients, smoking history, body mass index, and the severity of pancreatitis at initial admission was recorded. Alcohol drinking behavior prior to the previous admission and during the 3 months post-admission was assessed using Alcohol Use

Disorders Identification Test (AUDIT) and the Short Alcohol Dependence Data (SADD). Individual and socio-environmental factors that influenced the alcohol drinking behavior were documented using a self-administered questionnaire. Alcohol drinking behavior was categorized as total abstinence and persistent drinking and correlated with the socio-demographic parameters.

All statistical analyses were performed with Statistical Package for the Social Sciences (SPSS) version 20.0. Categorical data are expressed as numbers, and a chi-squared test or Fisher's exact test was used to evaluate the distribution differences. Continuous variables are expressed as the mean  $\pm$  standard deviation (SD). The statistical analysis was done by Chi-square test for qualitative data, and student's t-test for quantitative data.

## RESULTS

A total of 60 patients who have had an attack of acute pancreatitis at least 3 months prior to the study period were recruited. 43 patients had come to casualty with recurrent pancreatitis and remaining 17 patients had come to outpatient department for regular follow up. The average duration between the previous acute attack and recruitment for the study was  $4 \pm 1.2$  months. Almost all the patients (57) had received de-addiction counseling at the time of initial admission for acute pancreatitis. The mean age of the patients included in the study was  $38 \pm 4.5$  yrs. 43.4 % (26) of the patients had at least a high school education. 30 % (18) of the patients were illiterate. Daily wage labor was the commonest occupation of the study group (53.3%) and the average monthly income of the study group was Rs.2125. Most of the patients were married (81.7%) and were from a rural background (83.3%).

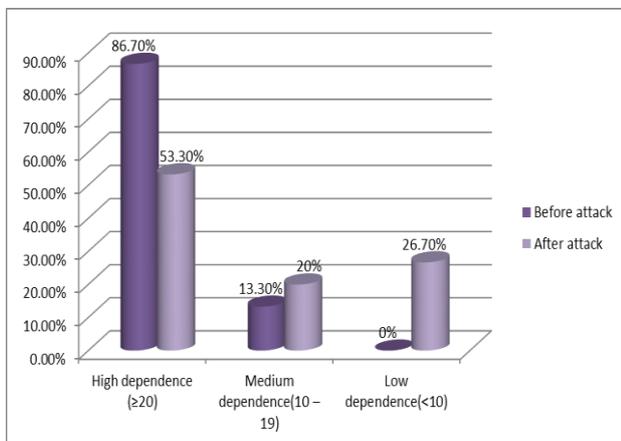
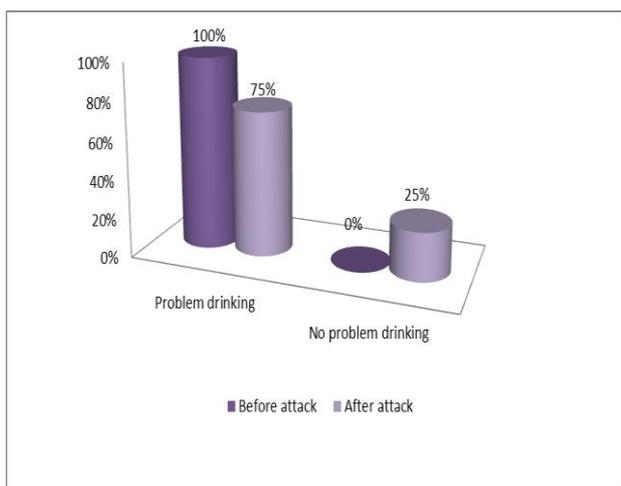
**Table 1: Factors influencing alcohol drinking behavior.**

Factors		Abstinence (n=14) n (%)	Persistent Drinking Behavior (n=46) n (%)	P value
Age	Mean	42 $\pm$ 3.2	37 $\pm$ 5.3	<0.01
Education level	$\leq$ High school	6(42.8)	21(45.5)	0.03
	>High school	8 (57.2)	25(55.5)	
Occupation	Daily laborer	10(71.4)	22(47.8)	0.06
	Non-daily laborer	4(28.6)	24(52.2)	
Income	<Rs 5000	9(64.3)	30(65.2)	0.4
	$\geq$ Rs 5000	5(35.7)	16(34.8)	
Locality	Rural	12(85.7)	38(82.6)	0.3
	Urban	2(14.3)	8(17.4)	
Marital status	Unmarried	1(7.2)	18(39.1)	.01
	Married	13(92.8)	28(60.9)	
Type of family	Nuclear	6(42.9)	20(43.5)	0.4
	Joint	8(57.1)	26(56.5)	
Age at first drink	<20yrs	4(28.6)	43(93.5)	<0.01
	$\geq$ 20yrs	10(71.4)	3(6.5)	
Family history	Yes	14(100)	41(89.1)	0.09
	No	0(0)	5(10.9)	

P value of <0.05 was taken as significant.

**Table 2: Reason for persistent drinking behavior.**

Reason for persistent drinking behavior	(%)
Poor motivation	5.7
Craving	28.57
Peer pressure	37.14
Social factors	28.57

**Figure 1: SADD score before and after an attack of acute pancreatitis.****Figure 2: AUDIT score before and after an attack of acute pancreatitis**

The average age of first drinking in the study group was  $19 \pm 2.5$  yrs. 91.7% of patients have a family history of drinking behavior. Locally made alcohol (Toddy) was the commonest single form of alcohol taken by the study population (23.3%) however 36.6% of the study group had the habit of drinking all forms of alcohol. 26.7% (16) of patients reached low dependence level SADD score at 3 months following attack of acute pancreatitis.

25% of patients attained "No problem drinking" status according to AUDIT score on follow up. Abstinence from alcohol was noted in 23.3% (14) patients. 37.14% patients gave peer pressure as the reason for their persistent drinking behavior. Previous hospital admission and acute illness were given as the reason for stopping alcohol in 82% of the patients. Concern about the family

was the reason for abstinence in 18% of the patients. Age, education status, marital status and age of first drinking were found to be associated with abstinence with p-value of  $< 0.05$ .

## DISCUSSION

Acute pancreatitis is an inflammatory condition of the pancreas with varying degrees of severity. Many of the patients undergo hospital admission during the acute episode. Admission to the hospital and the experience of an acute illness motivates the patients to reduce the risk factor for developing recurrent episodes.<sup>[8]</sup> Alcohol-induced pancreatitis patients have been found to have recurrent episodes of pancreatitis as a result of persistent drinking.<sup>[9]</sup> This study analyses the alcohol drinking behavior of the patients following admission for an acute attack of pancreatitis.

In the present study, we found that 77% of patients continued to drink or relapsed after a short abstinence at 3 months following an acute episode of pancreatitis. In our study, the average duration between the acute episode of pancreatitis and the follow up was 4 months. This is relatively a short duration of follow up and cannot reliably assess the abstinence of the patient from drinking alcohol. Studies have shown that relapse of alcohol drinking behavior usually happens during the first year following an acute attack.<sup>[2]</sup>

In a study done by Miller et al, it has shown that nearly 50% of detoxified alcohol users relapse within 3 months.<sup>[10]</sup> In a study done by Korlakunta in India found that at the end of 2-6 months, 44.7% of patients continued to drink alcohol after hospital admission for acute pancreatitis. They concluded that relapse was seen in the majority of patients within a year of follow-up.<sup>[6]</sup>

In the present study, all patients were under the category of problem drinking as per the AUDIT score before the attack of acute pancreatitis. At a mean duration of 4 months follow up, 25% of patients attained no problem drinking status. Similarly, the alcohol dependence pattern was also found to have shown a positive change. Compared to baseline there was 33% reduction in people who had a high dependency on alcohol on follow up. 26.7% of people attained low dependency state during the follow-up. This shows that though the patients could not continue to be abstinent following discharge from acute pancreatitis, there has been a moderate level of change in alcohol drinking behavior. This initial positive change in alcohol drinking behavior could be attributed to the severity of the acute illness. A study by Lappalainen-Lehto et al. done in Finland showed 40.5% patients succeeded in reducing their alcohol consumption under the preset moderate drinking level by the two-year follow-up. They showed that the number of hospitalization days related to the acute pancreatitis was the only significant parameter predicting moderation or abstinence.<sup>[4]</sup> In another study by Niccolo et al the difference in Mean value of AUDIT points and SADD

points at baseline and at 2 years follow up was 20 and 15 respectively.<sup>[11]</sup>

In the present study, we observed that age of the patient, educational status, marital status and age at first drinking were found to significantly influence the alcohol drinking behavior of the patient. We observed that people who achieved abstinence were of higher age as compared to patients who continued to drink. This can be explained probably due to social commitments and necessity to take care of the family as the age advances. Connors et al. reported that marital and family issues are potential stressors and are significantly influential in treatment outcome.<sup>[12]</sup>

In our study, the average age of first drinking was 19±2.5 yrs. Korlakunta et al showed that 41.6 % started their first drink at an age of 21-25 years. Compared to the western population the age of first drink in Indian population was found to be higher. A study done by Hingson showed that 28% had first drink before age 13 years and by age 17 years they were 7 times more likely to consume 5 or more drinks 6 or more times per month.<sup>[13]</sup> The culture and social factors in western countries may be the reason for early age of starting to drink among the western population. On analyzing the influence of this factor on the alcohol drinking behavior we found that patients who start drinking at an early age were prone to persistent drinking. This finding is also comparable to similar studies. A study by Hingson et al found that patients who began drinking at younger ages were more likely to be dependent and experience multiple relapse.<sup>[13]</sup> Duration of drinking has been found to be significantly related to the alcohol dependency.<sup>[6]</sup> Glenn and Parson showed that early age of onset of drinking is strongly associated with chronic relapsing dependence, multiple episodes, episodes of longer duration and a wider range of symptoms.<sup>[14]</sup>

Peer pressure was noted as the common cause of persistent drinking in our study. Peer pressure was mostly from the people in the workplace. Craving for drinking and social factors was identified as the second common cause of relapse. Stress in the family, poor economic status, and workplace stress were commonly quoted as the reason for persistent drinking behavior. Similar studies have shown that craving for alcohol increases the risk of relapse. Korlakunta et al found 44% patients indicated craving as the reason for relapse. Craving for alcohol has been found to be associated with worse outcome in alcoholism and a higher dropout rate during alcohol withdrawal.<sup>[6]</sup>

## CONCLUSION

Based on our study we conclude that a significant number of patients continue to drink following an acute attack of pancreatitis, though there is a reduction in the problem drinking and alcohol dependency. Effective motivation and addressing the social-economic problems during the de-addiction counseling at initial hospital

admission for acute pancreatitis will help to improve the abstinence.

**CONFLICT OF INTEREST:** None.

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