Original Research Article

A study on alcohol dependence and it's clinical implications among male patients attending a tertiary care hospital, Kolkata

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Received: 12-10-2021 / Revised: 03-12-2021 / Accepted: 13-12-2021

Abstract

Background: Alcohol intake is one of the major substance abuses and the problem of alcoholism is present throughout the world. It has been observed that alcohol dependence is associated with development of metabolic syndromes and chronic illnesses. **Aims & Objectives:** This study was conducted to find out the pattern of alcohol dependence and clinical features associated with different levels of alcohol dependence. **Materials & Methods:** It was a hospital based cross-sectional & observational study. Screening & assessment of alcohol dependence was done by using scales like AUDIT & ADS. Semi-structured questioner was used for assessing sociodemographic data for the total sample of 100 patients. 65 cases were selected finally after screening by AUDIT scale. Descriptive statistical analysis was done for obtaining results. **Results:** Findings suggests that among the patients a significant number of cases (41.5%) were in the category of substantial level of alcohol dependence. This study findings suggest that severity of alcohol dependence is directly associated with development of delirium ,physical comorbidities and sexual dysfunction.**Conclusion:** The burden of alcohol use is growing alarmingly in India and before it turns out to be a giant monster encroaching upon youths, we need to focus our attention in curbing this problem by diagnosing and treating alcohol dependent patients and using preventive measures, to not allow development of dependence at all.

Keywords: Alcohol dependence, AUDIT, ADS, Delirium, Sexual dysfunction.

Introduction

Alcoholism is a major problem of the modern world and it is a leading preventable cause of death around the world. In everyday life, alcohol refers to any beverage containing ethanol or ethyl alcohol. It is available in many forms with beer being the third most popular drink throughout the world next to water and tea. According to National health survey(NHS) 21.4% Indians have history of alcohol abuse. Excessive or harmful alcohol use is ranked as one of the top five risk factors for death and disability globally and results in 2.5 million deaths and 69.4 million annual disability adjusted life years. Meta-analysis of Reddy and Chandrasekhar revealed that prevalence rate of alcohol dependence is 6.9/1000 in our country [1].

Alcohol dependence is a cluster of behavioural, cognitive, and physiological phenomena that may develop after repeated alcohol use [2]. Typically these phenomena include , a strong desire to consume alcohol, impaired control over its use, persistent despite harmful consequences, a higher priority given to drinking than to other activities and obligations, increased alcohol tolerance and a physical withdrawal reaction when alcohol is discontinued.

The use of alcohol is increasing with time not only in developed countries but also in the developing countries. The increased consumption of alcohol specially in developing countries like India is mainly due to changes in socio-cultural and economic environment. A large number of people specially from younger age group are consuming alcohol in a frequent manner. Majority of the people are unaware about the harmful effects of excessive alcohol consumption on the human physiological system. As many as 80% men and 60% women in developed countries drink at some time in their lives. The life time risk for development of alcohol use disorder in male is more than 20%,with a risk of about 15% for alcohol abuse and 10% for alcohol dependence [3].

Alcohol is implicated in a wide variety of diseases and disorders and injuries, as well as social and legal problems. It is a major cause of oral cavity, esophagus, larynx and liver cancer. Liver cirrhosis and pancreatitis often result from long term excessive consumption of alcohol as it is a hepatotoxin. Moreover hypertension, diabetes, gastritis are aggravated by alcohol use [4]. Alcohol has an injurious effect upon several organs like brain and heart. Heavy drinking sometimes lead to severe cardiac arrhythmia and may result in development in cardiomyopathy. Severe anterograde amnesia of Wernicke-Korsakoff syndrome may develop in fewer than 1% of those who developed alcohol dependence [5].Mild anterograde amnesia and black outs are very common as are temporary cognitive deficits such as problem solving with abstraction, memory and learning. Also 15% of the patient of alcohol dependence develop alcoholic neuropathy [6].

Alcohol consumption during pregnancy may result foetal alcohol syndrome, low birth weight baby, premature delivery etc. Excessive alcohol consumption may induced immune dysfunction and can exacerbate the severity of hepatitis C infection.

Thus, those who begin drinking before age of 13 years are much more likely even in high school frequently drink to intoxication [7]. Compared with other students, the approximately 1 million frequent heavy drinkers more often exhibit behaviors that pose risk to themselves and others, such as riding with drinking drivers, driving after drinking, never wearing safety belts, carrying guns and other weapons, becoming injured in fights and suicide attempts, having unplanned and unprotected sex, using tobacco, marijuana, and other illicit drugs and earning mostly low grades in school .Automobile and pedestrian injuries and work related harm, falls frequently result from excessive alcohol consumption.

According to the Gateway Drug Theory/Gateway Hypothesis, use of less deleterious drugs like alcohol, tobacco and cannabis may lead to

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future risk of using more dangerous hard drugs like heroin, cocaine, and marijuana. Gateway substances prime the brain for addiction to other substances. It has been noticed that both alcohol and tobacco tend to precede cannabis and cocaine use. Lifetime drinkers are also six times more likely to be dependent on illicit drugs than non-drinkers.

Evidence suggests that the early age of onset is associated with aggression, problems with law, social role maladaptation, loss of behavioural control when drinking and childhood criminality. There is three to five fold increased risk of alcoholism in the relatives of alcoholics [8].Various international studies reported that individuals with a positive family history have shown to increased severity of alcohol dependence [9]. There is very few study about the development of alcohol dependence and associated clinical symptomatology in Indian context particularly in West Bengal. This study will help us to find out the exact severity pattern of alcohol dependence in clinical context and will aid us in developing appropriate strategies to prevent this problem for the benefit of society.

Aims & objectives

To study the pattern of severity of alcohol dependence in male patients as well as to identify the associated clinical features along with different stages of dependence.

Materials & methods

The study was conducted at R.G.Kar Medical College Kolkata after obtaining approval from Ethics committee. It was a hospital based cross-sectional study. Patients attending General Medicine, Gastroenterology, and Orthopaedics OPD and IPD with complications secondary to alcohol use are usually referred to Psychiatry OPD after medical/surgical intervention. Moreover some patients having alcohol use problems come directly to the Psychiatry OPD. Both these groups of patients with provisional diagnosis of disorders due to alcohol use according to ICD-10 and who fulfil the inclusion and exclusion criteria were included in the study. Purposive sampling was done for this study and data was collected for a period of 12 months.100 cases have been selected who were having history of alcohol intake and among the cases 35 cases have been excluded from the study as they are not qualifying either in AUDIT scale or having some comorbid substance abuse excluding the tobacco. The male patients who belong to the age group of 20 to 50 years were included in the study. Also the patients who were suffering currently from any other major psychiatric disorders were excluded from this study. A pretested and predesigned semi-structured proforma containing questionnaire for socio-demographic profile was used. For assessment of socio-economic status of the family, Kuppuswamy scale (based on education and occupation of head of the family and family income) was used.

Alcohol Dependence Scale (ADS) was used to evaluate the severity of dependence. The ADS (Alcohol dependence scale) provides a quantitative measure of the severity of alcohol dependence consistent with the concept of the alcohol dependence syndrome. It measures severity in 4 quartiles like:

1st quartile: Low level of alcohol dependence
2nd quartile: Intermediate level of alcohol dependence
3rd quartile: Substantial level of alcohol dependence
4th quartile: Severe level of alcohol dependence

For statistical analysis data were entered into a Microsoft excel spreadsheet and then analysed by SPSS 20.0.1 and Graph Pad Prism version 5. Data had been summarized as mean and standard deviation for numerical variables and count and percentages for categorical variables. Two-sample t-tests for a difference in mean involved independent samples or unpaired samples was done. A chi- squared test ($\chi 2$ test) was any statistical hypothesis test wherein the sampling distribution of the test statistic is a chi-squared distribution when the null hypothesis is true and was performed for data analysis. If the calculated p-value was below the threshold chosen for statistical significance (usually the 0.10, the 0.05, or 0.01 level), then the null hypothesis is rejected in favour of the alternative hypothesis. p-value ≤ 0.05 was considered for statistically significant.

Results

In final study sample the mean age was 39.40 years and majority of the cases were from urban area (83.1%). Among cases around 75% were married whereas around 15 % were unmarried and few were separated. The result suggests that significant number (78.5%) of patients were involved in unskilled activities. It had been found that around 49% patients had achieved secondary level education whereas 24.6% participants were illiterate. The mean income of the selected patients family was Rs.6350.

Among the patients a significant number of cases (41.5%) were also in the category of substantial level of alcohol dependence as shown in (Table:1, Fig:1) and 53.8% patients were in severe level of alcohol dependence.

Table 1: Distribution of ADS level in final study population

ADS level	Frequency	Percent
2nd quartile	3	4.6%
3rd quartile	27	41.5%
4th quartile	35	53.8%
Total	65	100.0%

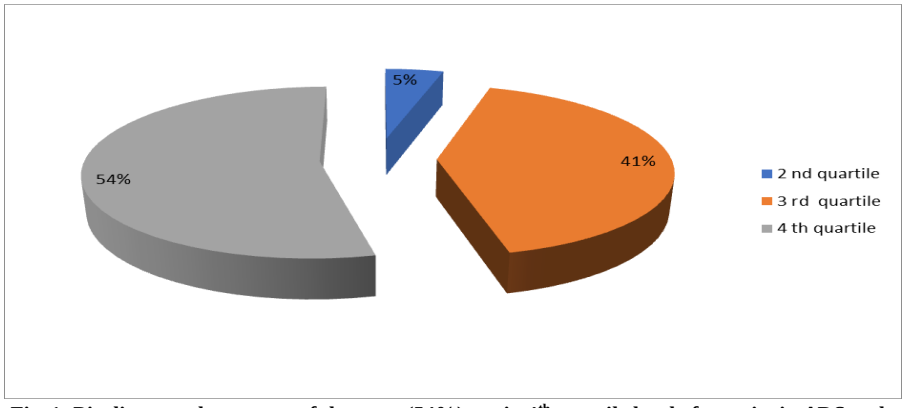

Fig. 1: Pie diagram shows most of the cases (54%) are in 4th quartile level of severity in ADS scale

This study findings also suggests that those patients who were suffering from co-morbidities were having severe level of alcohol dependence (Table:2, Figure:2) and showed statistically significant findings.

Table 2: Distribution of Physical comorbidity with ADS level

Physical comorbidity	2nd quartile	3rd quartile	4th quartile	TOTAL
No	3	20	0	23
Yes	0	7	35	42
TOTAL	3	27	35	65

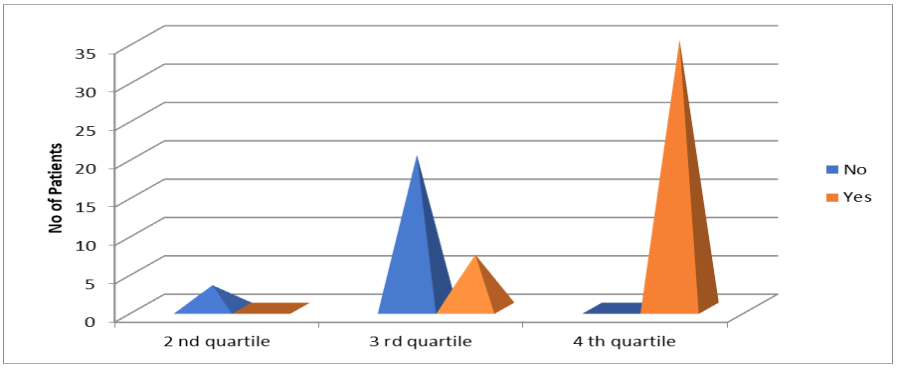

Fig. 2 : Bar diagram represents that physical comorbidities are very common when the severity of dependence increases

Most of the patients who were suffering from severe level of alcohol dependence had complained of difficulties in sexual performances (Table:3, Figure:3). It was also seen that history of hospitalisation is significantly more common for those patients who were suffering from severe level of dependence.

Table 3: Distribution of Sexual Problem with ADS level

Sexual Problem	2nd quartile	3rd quartile	4th quartile	TOTAL
No	3	16	0	19
Yes	0	11	35	46
TOTAL	3	27	35	65

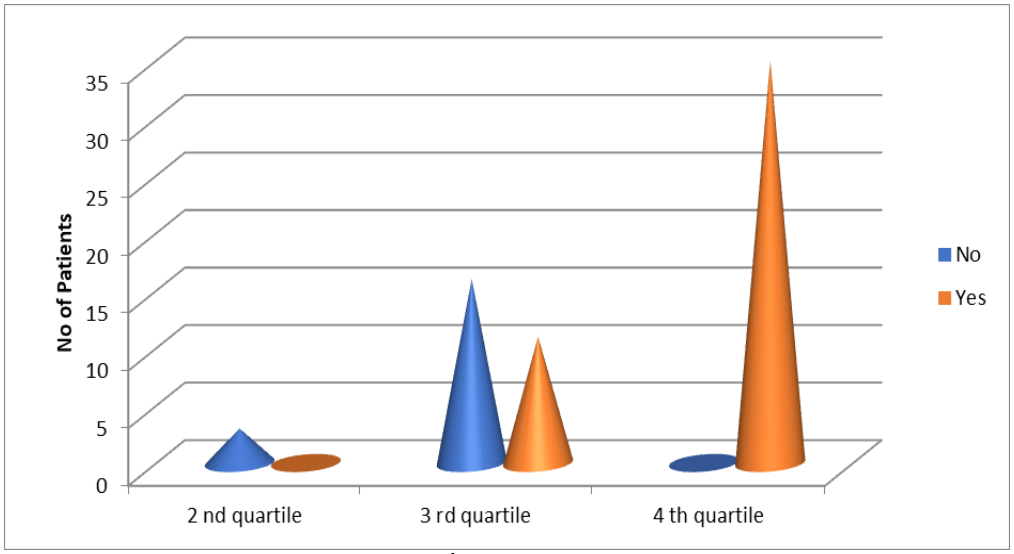

Fig. 3: Bar diagram shows the patients who are in 4th quartile stage of dependence are mostly complaining of sexual problem

This study findings also suggest that those patients who were having level IV alcohol dependence had a tendency regarding meeting accidents Also it can be stated from the results that those had severe level alcohol dependence had experienced more number of episodes of black-outs. Alcohol withdrawal delirium is commonly seen in patients of severe level of dependence (Table:4 and Fig:4) . Involvement in legal issues were common for the individuals having more severe level of alcohol dependence as well as difficulties in occupational life were observed for the patients of severe level of alcohol dependence

Table 4: Distribution of Delirium tremens with ADS level

DTs	2nd quartile	3rd quartile	4thquartile	TOTAL
No	3	27	13	43
Yes	0	0	22	22
TOTAL	3	27	35	65

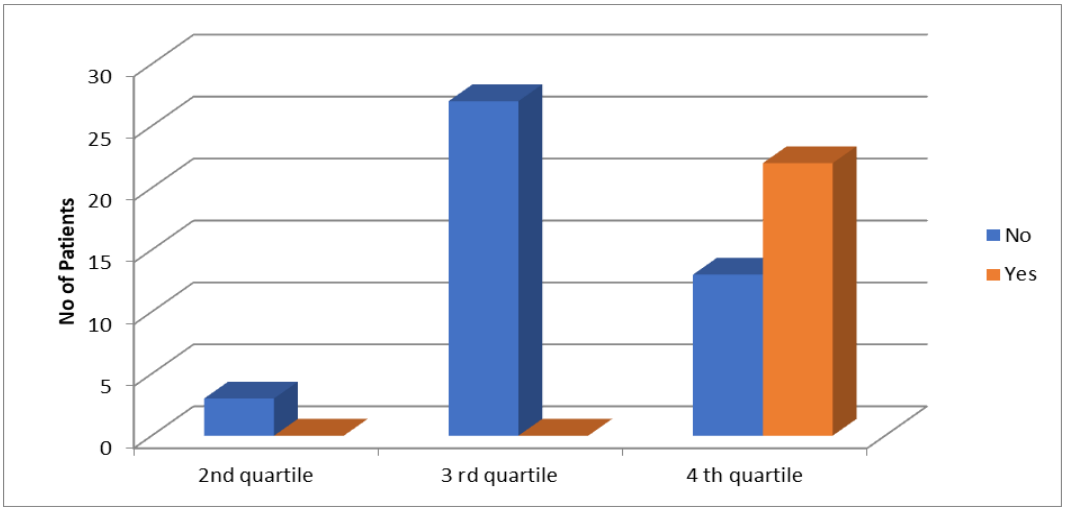

Fig. 4:Bar diagram represents Delirium tremens may happen in severe level of alcohol dependence cases

Discussion

In final study sample the mean age was 39.40 years and majority of the cases were from urban area. The significant finding of this is study more than half of the cases had developed severe level of alcohol dependence and there was no case in the category of low level of alcohol dependence. A significant number of cases (41.5%) were also in the category of substantial level of alcohol dependence. It can be opined from this finding that majority of cases who had developed intermediate and low level of alcohol dependence may not have attended the out-patient departments may be because of they had not developed significant impairment in daily life or deterioration in general health condition. It has been seen in previous studies that if severity of alcohol dependence increases patients developed numerous physical co-morbidities. Patients may suffer from hypertension, cardiac complications, neuropathic pain, ascites, hematemesis, pancreatitis, pain abdomen, cirrhosis of liver etc [10]. Earlier studies report that there is excess mortality and medical comorbidity in alcohol-dependent individuals

The physical harm related to alcohol use has been increasing in developed countries like United Kingdom. Deaths from alcoholic liver disease have doubled since 1980 (Leon & Mc Cambridge, 2006) compared with a decrease in other European countries. According to the American Liver Foundation in the USA alcoholism is the number one cause of cirrhosis and chronic liver disease, which combine to represent the twelfth most common cause of death in USA. Alcohol abuse for longer duration itself make the person much more susceptible for development of delirium [11].

In this study it has been found that patients who were having severe level of dependence had complained frequent black outs and delirium in comparison to those who were having less severe dependence. Patients with severe level of alcohol dependence had been complaining more of physical complications like chest pain, haemoptysis, severe abdominal pain, development of swelling in the abdomen. Those who were experiencing severe dependence had taken admission in hospitals due to physical complications. The history of hospital admission due to complication of alcohol abuse and development of physical comorbidities is showing statistically significant during comparison with level of alcohol dependence. In a simplified manner it can be said that severe level of alcohol dependence may lead to develop numerous complications. Data from Indian settings suggest that the prevalence rates of sexual dysfunction among alcohol-dependent patients vary widely [12]. This difference in the reported rates in sexual dysfunction might be due to the shame and stigma attached with disclosure of sexual problems particularly in countries like India. In our study, patients with alcohol dependence had greater sexual dysfunction in almost all areas like impaired desire, erection, orgasm as the severity of dependence increases and had shown statistical significance ($p<0.0001$).

This study is not devoid of limitations. The sample size was very small and previous studies about alcohol dependence involved large number of sample from hospital / clinic as well as from community. The patients who are attending for treatment in this Government hospital usually belong to low socioeconomic status and because of that the results cannot be generalised for entire community. The patients who were having comparatively lesser degree of alcohol dependence may not have been referred to or attended the Psychiatry out patient department and there is a possibility of selection bias. All subjects in this study were males and findings may differ with inclusion of female patients. Lastly, there is a possibility

of recall bias as history of alcohol consumption and it's complications were self-reported by the patients.

Conclusion

Alcohol menace is growing dangerously in our country and before it turns out to be a giant monster encroaching upon our youths that is a significant proportion of our population, we need to focus our attention in curbing this problem. It has been observed that development of severe level of alcohol dependence is increasing chronic physical illnesses and metabolic syndromes and as a result of that quality of life and productivity of the affected population is deteriorating. We should take appropriate measures to curb this problem not only by diagnosing and treating alcohol dependent patients by adequate interventions and also to take steps to tackle the promotion of alcohol for prevention development of dependence.

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Conflict of Interest: Nil
Source of support:Nil