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# Assessment of incidence and profile of neurological diseases in alcohol dependents

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**Abstract**
**Background:** Alcohol is known to produce toxic effects in all the systems of the body. Hence, understanding the effects of alcohol is necessary to plan perfect treatment strategies for management of alcohol dependent patient.
**Aim:** The present study was undertaken to assess the incidence and profile of neurological diseases in alcohol dependents.
**Materials and Methods:** The study recruited 50 alcohol dependence patients attended to the hospital OPD. The selection and assessment of the alcohol depended patients are using standard DSM-IV as mentioned in the literature. Demographic data was collected from the patients using standard methods. Neurological dysfunction was assessed through physical examination.
**Results:** Maximum number of patients belongs to age group of 31-40 years. All the participants were males. Majority are married men who were alcohol dependents. Majority of alcohol dependents are unemployed. Majority of the patients consume country liquor. Dementia and hand tremor are most commonly observed neurological symptoms in the alcohol dependents.
**Conclusion:** The present study adds to the existing knowledge about the neurological symptoms in the alcohol dependents. The most common features observed are hand tremors and dementia. There is a strong need to undertake further detailed studies in this area for better understanding and better planning of treatment strategies.

**Keywords:** Alcohol, drinking, neurology, dementia

## Introduction
Consumption of alcohol becomes a common practice in India. There is a drastic increase in the consumption yearly from all the states with highest rate of consumption in the state of Kerala [1]. The most common beverages used are beer, wine, whisky, brandy, vodka, gin and rum. Occasional drinking may be considerable but addiction to alcohol has deleterious effects on the body systems [2]. The consumption of alcohol increases stimulation on the reward system of the brain and it makes the person to drink again and again. The key neurotransmitter involved in this context is dopamine [3]. Alcohol dependence is very dangerous as these people completely depend on alcohol even for their daily functions. The effect of alcohol is very fast because it is directly absorbed from the stomach [4]. After getting absorbed, it is distributed to all organs and liver is the key organ that takes maximum alcohol [5]. Kidney is the organ that excretes the alcohol. There are direct and indirect effects of alcohol to body systems [6]. The key systems affected are brain, gastro intestinal system, reproductive system and muscular system. Alcoholic tremors are most common sign observed in alcohol dependents. It was reported that 20-30% of hospital admissions are due to direct or indirect effects of consumption of alcohol. Alcohol is known to produce toxic effects in all the systems of the body [7]. Hence, understanding the effects of alcohol is necessary to plan perfect treatment strategies for management of alcohol dependent patient. The present study was undertaken to assess the incidence and profile of neurological diseases in alcohol dependents.

## Materials and methods:
**Study design:** Observational study

**Sampling method:** Convenient sampling

**Study population:** The study recruited 50 alcohol dependence patients attended to the hospital OPD aged from 20-60 years. Participants who were willing voluntarily were included in the study with proper informed consent. Those unwilling were not recruited in the study. Those with severe complications were also not included in the study. Those, who were already under treatment also excluded from the study.

**Data collection:** The selection and assessment of the alcohol depended patients are using standard DSM-IV [8] as mentioned in the literature. Demographic data was collected from the patients using standard methods. Neurological dysfunction was assessed through physical examination.

**Ethical considerations:** The study proposal was approved by the institutional ethics committee after satisfying the queries adequately. The study followed all the guidelines as per the ICMR guidelines. Written informed consent was obtained from all the participants before the commencement of the study. Information related to the patients was kept confidential.

**Data analysis:** The statistical software SPSS 18.0 version was used to analyze the data. The significance of difference was tested using the Student t-test. The probability value less than 0.05 were considered significant.

## Results

Table no 1 presents the demographic data of the patient's age wise distribution. Maximum number of patients belongs to age group of 31-40 years. Table no 2 presents the demographic data of the patient's gender wise distribution. Table no 3 presents the demographic data of the patient's marital status wise distribution. Majority are married men who were alcohol dependents. Table no 4 presents the demographic data of the patient's employment wise distribution. Majority of alcohol dependents are unemployed. Table no 5 presents the type of liquor consumed. Majority of the patients consume country liquor. Table 6 presents the frequency and percentage of neurological problems. Dementia and hand tremor are most commonly observed neurological symptoms in the alcohol dependents.

**Table 1:** Demographic data of the patients age wise distribution

| S.no | Age in years | Number of patients (n=50) |
|---|---|---|
| 1 | 20-30 | 12 (24) |
| 2 | 31-40 | 20 (40) |
| 3 | 41-50 | 10 (20) |
| 4 | 51-60 | 8 (16) |

Data was presented as frequency and percentage

**Table 2:** Demographic data of the patients gender wise distribution

| S. no | Gender | Number of patients (n=50) |
|---|---|---|
| 1 | Males | 50 (100) |
| 2 | Females | 0 (0) |

Data was presented as frequency and percentage

**Table 3:** Demographic data of the patient's marital status wise distribution

| S.no | Marital status | Number of patients (n=50) |
|---|---|---|
| 1 | Married | 32 (64) |
| 2 | Un married | 8 (16) |
| 3 | Divorced | 10 (20) |

Data was presented as frequency and percentage

**Table 4:** Demographic data of the patient's employment wise distribution

| S.no | Employment status | Number of patients (n=50) |
|---|---|---|
| 1 | Employed | 22(44) |
| 2 | Un employed | 28 (56) |

Data was presented as frequency and percentage

**Table 5:** Type of liquor consumed

| S.no | Type of liquor | Number of patients (n=50) |
|---|---|---|
| 1 | Country | 30 (60) |
| 2 | Foreign | 20 (40) |

Data was presented as frequency and percentage

**Table 6:** Frequency and percentage of neurological problems

| S.no | Neurological problems | Number of patients (n=50) |
|---|---|---|
| 1 | Hand tremor | 12 (24) |
| 2 | Peripheral neuropathy | 8 (16) |
| 3 | Hallucinations | 2 (4) |
| 4 | Blackout. | 10 (20) |
| 5 | Dementia | 12 (24) |
| 6 | Cerebellar degeneration | 6 (12) |

Data was presented as frequency and percentage

**Discussion:** Alcohol is known to produce toxic effects in all the systems of the body. Hence, understanding the effects of alcohol is necessary to plan perfect treatment strategies for management of alcohol dependent patient. The present study was undertaken to assess the incidence and profile of neurological diseases in alcohol dependents. Maximum number of patients belongs to age group of 31-40 years. All the participants were males. Majority are married men who were alcohol dependents. Majority of alcohol dependents are unemployed. Majority of the patients consume country liquor. Dementia and hand tremor are most commonly observed neurological symptoms in the alcohol dependents. The consumption of alcohol not only deteriorates the health of the individual but also affects the family economically and socially. The alcohol act is up to the state government decision [9]. However, the governments are not banning as this is one of the prime income to them. In the body, every organ is affected by alcohol. Alcohol shows toxic effects on the cellular level in all the systems [10-12]. The vital organs are more affected by alcohol [13]. The symptoms of alcohol dependence range from minor to severe ranges. It may range head ache to the damage of the cerebellum which is a vital organ that regulates the muscle tone [14-17]. Tremor in the hand is the most common symptom explained in the earlier studies. The present study also does similar observation and supports the earlier views. All the participants were males hence the prevalence is more in males than females. As there are severe neurological effects, there is a need to take up a program to identify the patients of alcohol dependence and manage them by offering adequate de a\addiction treatment. The present study adds to the existing knowledge about the neurological symptoms in the alcohol dependents. The most common features observed are hand tremors and dementia. There is a strong need to undertake further detailed studies in this area for better understanding and better planning of treatment strategies. Proper training is required to the health workers involved in such a program that deals with the management of alcohol dependence.

## Conclusion

The present study adds to the existing knowledge about the neurological symptoms in the alcohol dependents. The most common features observed are hand tremors and dementia.

There is a strong need to undertake further detailed studies in this area for better understanding and better planning of treatment strategies.

**Conflicts of interest:** None declared

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**References**

1. Charness ME, Simon RP, Greenberg DA. Ethanol and the nervous system. N Engl J Med 1989;321(7):442-454.
2. Bosron WF, Li TK. Genetic polymorphism of human liver alcohol and aldehyde dehydrogenases, and their relationship to alcohol metabolism and alcoholism. Hepatology 1986;6(3):502-510.
3. Sellers EM, Naranjo CA, Peachey JE. Drug therapy: Drugs to decrease alcohol consumption. N Engl J Med 1981;305(21):1255-1262.
4. Wright C, Moore RD. Disulfiram treatment of alcoholism. Am J Med 1990;88(6):647-655.
5. Johnson RA, Noll EC, Rodney WM. Survival after a serum ethanol concentration of 1 1/2%. Lancet 1982;2(8312):1394-1394.
6. Lindblad B, Olsson R. Unusually high levels of blood alcohol? JAMA 1976;236(14):1600-1602.
7. Urso T, Gavaler JS, Van Thiel DH. Blood ethanol levels in sober alcohol users seen in an emergency room. Life Sci 1981;28(9):1053-1056.
8. Watanabe A, Kobayashi M, Hobara N, Nakatsukasa H, Nagashima H, Fujimoto A. A report of unusually high blood ethanol and acetaldehyde levels in two surviving patients. Alcohol Clin Exp Res 1985;9(1):14-16.
9. Branchey L, Branchey M, Zucker D, Shaw S, Lieber CS. Association between low plasma tryptophan and blackouts in male alcoholic patients. Alcohol Clin Exp Res 1985;9(5):393-395.
10. Lovinger DM, White G, Weight FF. Ethanol inhibits NMDA-activated ion current in hippocampal neurons. Science 1989;243(4899):1721-1724.
11. Lovinger DM, White G, Weight FF. NMDA receptor-mediated synaptic excitation selectively inhibited by ethanol in hippocampal slice from adult rat. J Neurosci 1990;10(4):1372-1379.
12. White G, Lovinger DM, Weight FF. Ethanol inhibits NMDA-activated current but does not alter GABA-activated current in an isolated adult mammalian neuron. Brain Res 1990;507(2):332-336.
13. Hawley RJ, Major LF, Schulman EA, Lake CR. CSF levels of norepinephrine during alcohol withdrawal. Arch Neurol 1981;38(5):289-292.
14. Kosobud A, Crabbe JC. Ethanol withdrawal in mice bred to be genetically prone or resistant to ethanol withdrawal seizures. J Pharmacol Exp Ther 1986;238(1):170-177.
15. Koppi S, Eberhardt G, Haller R, König P. Calcium-channel-blocking agent in the treatment of acute alcohol withdrawal--caroverine versus meprobamate in a randomized double-blind study. Neuropsychobiology 1987;17(1-2):49-52.
16. Little HJ, Dolin SJ, Halsey MJ. Calcium channel antagonists decrease the ethanol withdrawal syndrome. Life Sci 1986;39(22):2059-2065.
17. Harris RA, Burnett R, McQuilkin S, McClard A, Simon FR. Effects of ethanol on membrane order: fluorescence studies. Ann N Y Acad Sci 1987;492:125-135.