

PREVALENCE OF ALCOHOL RELATED HEALTH PROBLEMS- A PROSPECTIVE STUDY FROM A TERTIARY CARE CENTRE OF EASTERN INDIA

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ABSTRACT

BACKGROUND

Alcohol, a product that has been linked with human evolution is affecting almost all systems and altering nearly every biochemical process in human body. This drug is likely to exacerbate most medical problems. This study was conducted with an aim to study the prevalence of different diseases in the population as a whole due to intake of alcohol.

MATERIALS AND METHODS

This was a hospital-based, cross-sectional observational study from 1st January, 2016, to 31st December, 2016. Data regarding clinical, socioeconomic parameters, symptoms of the patients, 13 years or old, presented with alcohol-related problems were recorded and evaluated.

RESULTS

3,159 patients were assessed. Most of the patients were in the age group of 40-60 years. Males were 93.1%, 94.34% were married and 84.9% were from rural areas. They are mostly literate and 47.8% were from the lower middle socioeconomic class background. 35.6% patients were labour by occupation, 46.5% consumed country made liquors and 52.2% were in the group of 10-30g alcohol intake per day. All the systems were influenced by alcohol consumption out of which chronic liver disease, cerebrovascular accidents, acid peptic disorders and pancreatitis were found to be common.

CONCLUSION

Alcohol, affecting not only health, but also socioeconomic status is burden to society. So, its control of alcohol consumption should be regarded as an utmost need.

KEYWORDS

Alcohol, Health Problems, Chronic Liver Disease, Cerebrovascular Accidents.

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BACKGROUND

Alcohol is a product that has been linked with human evolution and throughout all its history, evolutionary and historical perspective have proved inadequate to fully understand the behavioural attraction and physiological dependence on ethanol.¹

Alcohol distributes throughout the body affecting almost all systems and altering nearly every neurochemical process in the brain. This drug is likely to exacerbate most medical problems, affect medications metabolised in the liver and temporarily mimic many medical (e.g. diabetes) and psychiatric (e.g. depression) conditions. The lifetime

risk for repetitive alcohol problems is almost 20% for men and 10% for women regardless of a person's education or income. Although, low doses of alcohol might have benefits, greater than three standard drinks per day enhances the risk for cancer and vascular disease and these alcohol use disorders decrease the life span by about 10 years.² In this study, we look at the health problems that may occur due to use of alcohol.

Effects of Alcohol in Human Bodies

Age-adjusted morbidity and mortality rates increase as a function of the amount and duration of alcohol consumption and these rates are increased two to threefold among chronic heavy drinkers. Alcohol consumption affects virtually every major organ system.

Gastrointestinal System

Heavy alcohol use is associated with acute abdominal pain, nausea and vomiting. With regular heavy alcohol use, oesophageal disorders like oesophagitis, oesophageal varices and oesophageal mucosal tears with bleeding can

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occur. Common upper gastrointestinal symptoms are pancreatitis, gastritis, duodenitis and ulcer disease.

Liver

Because the liver receives portal blood directly from the intestines and is the primary site of alcohol metabolism, liver damage is one of the most common health consequences of chronic heavy drinking. Two main types of alcohol-related liver injury are inflammation (alcoholic hepatitis) and progressive scarring (fibrosis or cirrhosis). Vulnerability to liver injury may result from genetic variations in the enzymes that metabolise alcohol (ADH and ALDH (aldehyde dehydrogenase)) and in cytochrome P4502E1 activity. Women experience higher rates of hepatic injury. Finally, other medical conditions including infection with hepatitis B and C viruses are known to increase the risk of liver damage in alcoholics.³⁻⁵

Cardiovascular

In healthy individuals, moderate alcohol use reduces mortality from atherosclerotic cardiovascular disease due in part to alcohol's effects of decreasing Low-Density Lipoprotein (LDL) and increasing High-Density Lipoprotein (HDL) cholesterol. By contrast, heavy drinking is associated with an increased risk for cardiac arrhythmias, cardiomyopathy and sudden cardiac death. Heavy alcohol consumption is also associated with systolic and diastolic hypertension, significantly increasing the risk of stroke by 250 to 450 percent. In those with established arrhythmias, hypertension or hyperlipoproteinaemia, even moderate alcohol use may aggravate symptoms.^{3,6}

Pulmonary

At high doses, alcohol decreases respiratory rate, airflow and oxygen transport, hence increasing pulmonary disease symptoms in affected patients. Alcohol also reduces key pulmonary defenses against infection including- mucociliary clearance; macrophage mobilisation and phospholipid metabolism. These actions directly contribute to the increased rates of pulmonary infections (e.g. pneumococcal and gram-negative pneumonias) in chronic heavy drinkers.³

Neuropsychiatric

Chronic, heavy alcohol consumption causes structural changes in the brain, particularly in the cerebellum, limbic system, diencephalon and cerebral cortex. Enlargement of the ventricles and widening of the fissures and sulci over the cerebral hemispheres suggest cortical atrophy. Severely dependent patients may experience a significantly decreased blood flow in the frontal, cortical and periventricular regions of the cerebral cortex.³

A variety of cognitive deficits have been associated with regular, heavy alcohol use, including slowed information-processing, poor attention, difficulties with abstraction, solving problems and learning new information and reduced visuospatial abilities. Chronic irreversible damage includes ataxia and gait disturbances, polyneuropathy, dementia and the Wernicke-Korsakoff syndrome.³

Endocrine

Endocrine abnormalities result from the direct toxic effects of chronic, heavy alcohol use and indirect effects associated with alcohol-related liver disease and malnutrition. Chronic alcohol exposure is particularly damaging to the gonadal axis resulting in gynaecomastia, impotence, testicular atrophy in males, menstrual abnormalities and infertility in females.²

Chronic, heavy alcohol use is also associated with activation of the Hypothalamic-Pituitary-Adrenal (HPA) axis, especially during acute alcohol withdrawal. Some alcoholics develop clinical and biochemical features of Cushing's syndrome. Owing to episodes of sustained hypercortisolism, alcohol may exacerbate osteoporosis, diabetes mellitus and hypertension as well as impairing growth, reproductive ability and immune function.^{3,7}

Hypertriglyceridaemia, hypocalcaemia, hypomagnesaemia, sodium retention are also associated with alcohol intake.

Cancers

Heavy alcohol consumption significantly increases the risk of oesophageal cancers through the local actions of alcohol-metabolising enzymes on oesophageal cells and by the increased production of cytochrome P4502E1 in the oesophageal mucosa. This risk is considerably increased by smoking, which has a strikingly high prevalence in heavy drinkers. Other cancers increased by chronic heavy alcohol use include breast, thyroid, skin, laryngeal and nasopharyngeal. Compromised immune function associated with heavy drinking may contribute to these elevated cancer rates.³

Injury

Accidental injuries are a major cause of increased morbidity and mortality among chronic, heavy drinkers. Alcohol use has been implicated in 15 to 63 percent of fall fatalities, 33 to 61 percent of burn fatalities and 44 percent of fatal traffic accidents. In a study of emergency room patients admitted for blunt or penetrating trauma, almost half had a positive blood alcohol level (as do half of all those who die from unintentional injuries).³

After all alcohol has multiple deleterious effect on almost all systems of the body. The huge economic burden and social hazardous aspects of alcohol are beyond the scope of this study.

Considering these factors, aim of the present study was determined as-

"To study the prevalence of different diseases in the population due to intake of alcohol."

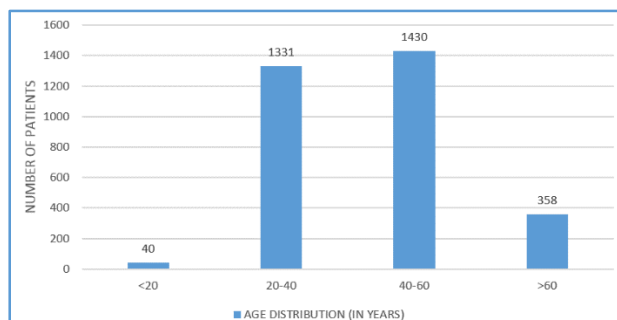
MATERIALS AND METHODS

This was a cross-sectional observational study carried out in the Department of Medicine, Assam Medical College and Hospital, for a duration of one year from 1st January, 2016 to 31st December, 2016. All patients irrespective of sex attending outpatient department and admitted in medicine ward due to alcohol-related problems were included after

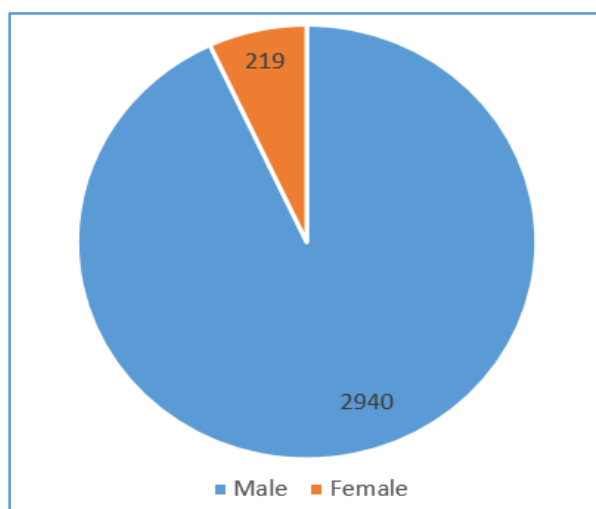
taking written informed consent. Age of the patients was more than 13. Data regarding clinical, socioeconomic parameters, symptoms of the patients, etc. were recorded in a predetermined proforma.

RESULTS

In this study, total 3,159 patients were assessed and age and sex distributions of them were as given in graphs 1 and 2.

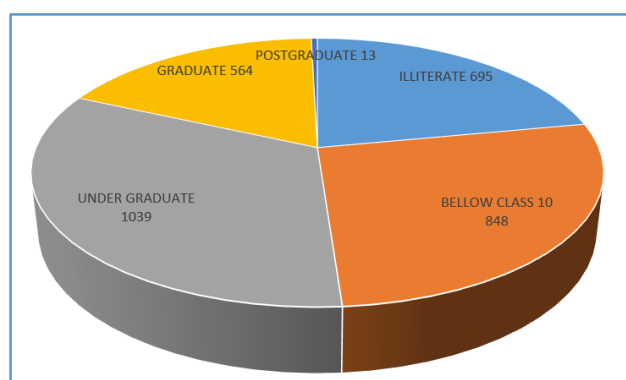


Graph 1. Age Distribution (In Years)

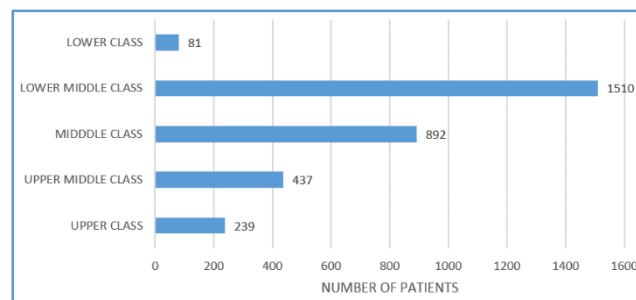


Graph 2. Sex Distribution

Out of 3,159, 1,052 were outdoor and 2,107 were admitted patients. 94.34% were married. 84.9% were from rural areas. Educational and socioeconomic status for the study population were shown in graph 3 and 4, respectively.



Graph 3. Educational Status

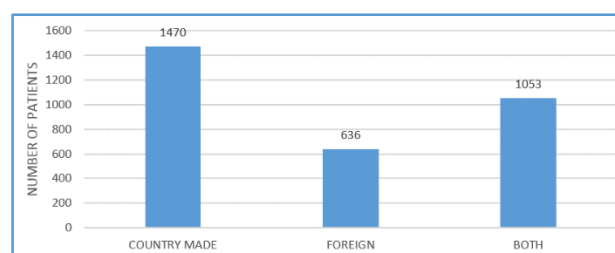


Graph 4. Socioeconomic Status According to Modified B G Prasad Socioeconomic Scale

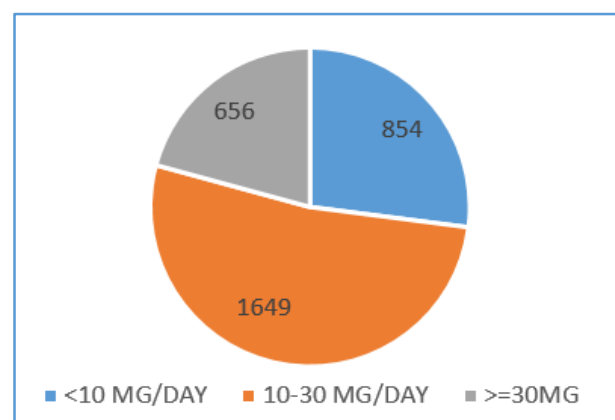
Occupation	Number of Patients	Percentage
Labour	1123	35.55
Farmer	509	16.11
Business	498	15.76
Service	305	9.65
Teacher	278	8.80
Housewife	165	5.22
Students	103	3.26
Driver	90	2.85
Unemployed	59	1.87
Tailor	16	1.17
Shopkeeper	13	0.96
Total	3159	100

Table 1. Occupation of the Patients were Distributed in the Table

Alcohol type, amount and duration of alcohol intake were elaborated in graphs 5, 6 and 7, respectively.



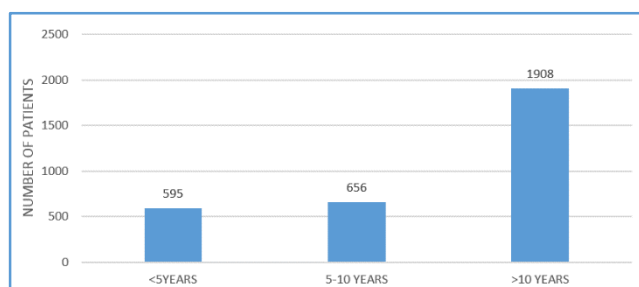
Graph 5. Type of Alcohol



Graph 6. Amount of Alcohol

Sl. No.	System Involved	Disease	OPD	IPD	Total
1.	Metabolic	Alcohol-induced hypoglycaemia		67	67
2.		Alcohol intoxication	1	42	43
3.		Alcohol withdrawal syndrome		51	51
4.	Neurological	Dyselectrolytaemia		13	13
5.		Cerebrovascular accidents (Haemorrhagic and infract)	3	421	424
6.		Headache	12		12
7.		Seizure	21	97	118
8.	Abdominal	Acid peptic disorders	26	354	380
9.		Anorexia	146		146
10.		Malabsorption syndrome	45	15	60
11.		Lower gastrointestinal bleed	2	23	25
12.		Acute gastroenteritis	5	40	45
13.		Chronic liver disease	216	549	765
14.		Hepatitis		23	23
15.		Pancreatitis		154	154
16.		Carcinoma oesophagus		1	1
17.		Abdominal tuberculosis		12	12
18.	Respiratory	Lower respiratory tract infections	105	46	151
19.		Pulmonary tuberculosis	11	23	34
20.	Cardiac	Hypertension	286	229	515
21.		Cardiomyopathy	20	63	83
22.	Others	Diabetes	21	134	155
23.		Generalised weakness	259		259
24.		Anxiety	37		37
25.		Poisoning		158	158
26.		Traumatic quadriplegia		1	1

Table 2. Different Diseases that the Patients Presented were Listed in Table



Graph 7. Duration of Alcohol Intake

CONCLUSION

Though there is scarcity of studies to compare, in this study, it was seen that most of the patients with alcohol-related health problems were in the productive age group of 40-60 years. Most of them were males mainly from rural area and married. They are mostly educated and from the lower socioeconomic class background.

Country made liquors consumption was common in the study group and most of them were in the group of 10-30g alcohol intake per day.

In the study, it was seen that the alcohol influenced all the systems in the human body in different proportions. Out of the different diseases, chronic liver disease, cerebrovascular accidents, acid peptic disorders and pancreatitis were found to be common.

Alcoholism is now a common practice in society. Not only health, but also socioeconomic status are also affected due to alcohol. Looking at its hazardous effects, control of alcohol consumption should be regarded as an utmost need. Along with health department, it needs a

multidirectional approach with involvement of political, economic, social sides to control health burden of alcohol.

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