



## Profile of Alcoholic Liver Disease in Patients Attending De-Addiction Tertiary Level Teaching Hospital Jharkhand

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#### KEYWORDS

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#### ABSTRACT

In a country like India, with a diverse population, alcohol consumption is acceptable in various societies, so it is important to understand drinking patterns. Alcohol consumption is associated with mental, physical, and socioeconomic problems. This study was performed on 1500 patients attending department radiology, central institutes of psychiatry, kanke, Ranchi, Jharkhand. The study was done to understand the Socio-Demographic Characteristics, type Of Alcohol and Number of Drinks per Day, Clinical presentation of alcoholic liver disease, Biochemical parameters of the patients, and complications occurring due to alcohol consumption. All the data was collected in tabulation format.

#### INTRODUCTION

In the context of India, the country's diverse population, comprising various castes, religions, races, and cultural groups, adds complexity to the understanding of alcohol consumption patterns. Alcohol consumption is prevalent in many societies globally, and in India, it has historical, cultural, and social dimensions. In some tribal cultures and social practices in India, alcohol consumption has been ingrained as a traditional or customary element. It is often associated with rituals, celebrations, and social gatherings. The prevalence of alcohol use in such settings can contribute to higher rates of alcohol-related issues, including dependency and health problems. The impact of alcoholism in India is not uniform across different regions or demographic groups. Factors such as socioeconomic status, education, and cultural practices influence the prevalence and consequences of alcohol use. Additionally, efforts to address alcohol-related

problems may need to consider the cultural context and tailor interventions accordingly. Health consequences of alcoholism can include liver disease, cardiovascular issues, mental health disorders, and social problems such as family disruption and legal troubles. The need for effective prevention, intervention, and treatment programs is crucial in mitigating the negative effects of alcoholism on both individuals and society. It's worth noting that awareness, education, and destigmatization are essential components in addressing alcoholism. Mental health professionals, policymakers, and community leaders play vital roles in implementing strategies to reduce the burden of alcohol-related issues and promote overall well-being.<sup>1</sup>

Prevalence of country-made alcohol, specifically Hadiya and mahua, in the states of Jharkhand, Orissa (now Odisha), and West Bengal. These alcoholic beverages are deeply rooted in the tribal societies of these regions



and are socially accepted. However, the consumption of alcohol, including country-made varieties, is associated with public health issues and significant socioeconomic consequences. Hadiya, a fermented rice beer, is made using Karahani and Gora rice as a substrate. Fermentation involves using ranu, a herbal root mixture of 21 herbs and polished rice. The resulting mixture is shaped into pebbles and dried for four days. On the other hand, mahua is derived from the flowers of the Mahua tree (*Madhuca longifolia*), a tropical tree native to India<sup>2</sup>.

Though it is accepted culturally, alcohol has been recognized as a health hazard. Alcohol drinking leads to injury to liver cells, leading to cellular dysfunction in synthesis, metabolism, and storage. This cellular dysfunction due to alcohol causes hepatic steatosis, hepatitis, fibrosis, and cirrhosis. The under-reporting and under-recognition of alcohol-related issues have been challenging to society and the medical fraternity, as less than half of the population suffering seeks medical help. There has been increasing demand for public awareness, health services access, and improved health services to curb this issue. To make a striking impact on alcohol consumption in individual and community health, strict implementation is also needed<sup>3</sup>.

Clinicians play a vital role in identifying and managing cases of alcoholism.

With early detection and intervention, one can help prevent the progression of alcohol-related liver diseases and other associated health issues. Public health initiatives, education programs, and community engagement efforts are essential components of a comprehensive strategy to address the challenges posed by alcohol consumption in these regions<sup>4</sup>.

#### MATERIALS AND METHOS

This study was conducted in the Department of Radiology, Central Institute of Psychiatry, Kanke, Ranchi, Jharkhand, India, as a prospective analysis of

retrospectively collected data from 3 years. The purpose of the study was clearly explained, the participants were assured of confidentiality, and informed consent was obtained. Ethical Approval:

#### Case Definition:

The diagnosis of alcoholic liver disease diagnosis was based on the following criteria. History of significant alcohol intake. Physical signs of liver disease. Supporting laboratory investigations.

#### Inclusion Criteria:

History of significant chronic alcohol intake.

Presence of physical signs of liver disease (e.g., jaundice, portal hypertension, complications of portal hypertension).

Positive laboratory and radiological findings.

#### Exclusion Criteria:

Post-necrotic cirrhosis.

Documented seropositivity for HIV.

Any other form of chronic liver disease (e.g., Wilson's disease, Hemochromatosis).

Co-morbid illnesses such as cardiac, respiratory, and renal diseases, hypertension, and hepatic injury

#### Data Collection:

Patient details were collected, including occupation, socioeconomic status, risk factors, clinical features, complications, and relevant laboratory and radiological investigations.

#### Laboratory Investigations:

All patients underwent a comprehensive set of laboratory investigations, including a liver chemistry profile (serum albumin, bilirubin, transaminases - AST/ALT), complete blood count, and prothrombin time.

Imaging and Procedures: Ultra sonogram

Data Management: Microsoft Excel sheet was used for data collection, organization, and analysis.

#### RESULTS

A total of 1500 patients were included in the study.

Table- 1: Socio Demographic Characteristics of the Present Study

		N	PERCENTAGE
age	Less than 20 yrs.	50	3.33
	20-30	237	15.8
	30-40	754	50.26
	40-50	195	13
	50-60	183	12.2
	Above 60	81	5.4
education	illiterate	125	8.3
	matriculation	841	56.06



	Higher secondary	426	28.4
	graduation	108	7.2
religion	Hinduism	945	63
	Christianity	555	37
Communities	tribal	945	63
	Non-tribal	555	37
Domicile	urban	315	21
	Semi urban	300	20
	rural	885	59
Marital status	married	953	63.53
	unmarried	547	36.46
sex	Males	1231	82.06
	females	269	17.9
Occupation	unemployed	331	22.06
	labour	637	42.4
	farmer	159	10.6
	Self employed	168	11.2
	job	205	13.6

Table 2-Type Of Alcohol And Number Of Drinks Per Day

VARIABLE	N	PERCENTAGE
TYPE OF ALCOHOL		
BEER	153	10.2
WHISKY, RUM, GIN	235	15.6
LOCAL SPIRITS	710	47.33
MIXED DRINKS	402	26.8
NUMBER OF DRINKS/DAY (1 drink=14gm alcohol)		
</=3 (42gm.)	170	11.33
</= 6 (84 gm.)	264	17.6
</= 9 ( 126gm )	386	25.73
>9 (168 gm.)	680	45.33

Table 3: Clinical presentation of alcoholic liver disease

Presentaion	No. of Patients	Percentage (%)
Jaundice	1262	84.13
Melena	150	10
Weight loss	1329	88.6
Hepatomegaly	1426	95.06
Anorexia	1378	91.86
Pedal oedema	764	50.93
Hepatic Encephalopathy	10	0.66
Hematemesis	116	7.7
Oliguria	17	1.3
Fever	42	2.8



Spider naevi	13	0.86
Ascites	117	7.8
Anemia	1149	76.6

Table 4: Biochemical parameters of the cases

Biochemical parameters	Mean $\pm$ SD
Serum Bilirubin	<b>4.3 +/- 2.1</b>
AST	<b>239+/-69.5</b>
ALT	<b>115+/-33.7</b>
ALP	<b>298 +/- 86.9</b>
Total protein	<b>6.01 +/- 1.71</b>
Serum Albumin	<b>2.8 +/- 0.9</b>

Table 5: Complications observed in ALD patients

Complication observed	Number of patients	Percentage
Chronic liver disease	879	58.6
Portal HTN	117	7.8
Hepatic Encephalopathy	10	0.6
Upper GI bleed	116	7.7
Hepatic coma	3	0.22
Renal Failure	4	0.26
Psychotic syndrome	376	25.06
Spontaneous Bacterial Peritonitis [SBP]	12	0.8

## DISCUSSIONS

The study focused on all communities of Jharkhand state, including tribal and non-tribal groups. Domicile varied among urban, semi-urban, and rural areas. The marital status of participants was categorized into married and unmarried. Alcohol is associated with high mortality and morbidity; 3.7% of the global deaths and 4.4% of the global DALYs lost in the year 2002 could be attributed to this exposure<sup>5</sup>

The maximum number of people consuming alcohol belonged to the thirty to forty-year-old age group. There was male preponderance seen. It was seen that females preferred hadiya (rice beer), but the males preferred other countries' liquor; it is quite astonishing and alarming that the most common age group being affected is the most productive group, which contributes to the maximum GDP of our country. A significant portion of the participants were matriculated by education. More than half of the patients were from rural areas and were labourers by profession, followed by unemployed youth. Half of the patients consumed country liquor, followed by mixed drinks in one-fourth of the patients.

The most common reason for alcoholism was influenced by peer group drinking. Easy availability of alcohol in

the locality, Recreational use of alcohol in leisure time, Social acceptance of drinking alcohol, and 'Hadiya' (rice beer). The cultural reasons were Cultural acceptance of 'Hadiya' as food, the Use of alcohol and 'Hadiya' in ritualistic practices, and Serving alcoholic beverages for hospitality. The family factors were Brewing alcohol in tribal families, older family members drinking alcohol and 'Hadiya' together, and Serving alcoholic beverages at family gatherings. The occupational factors were brewing 'Hadiya' and 'mahuadaru' to earn money, serving alcohol, and 'Hadiya' during farming work and local workplaces. The majority of participants in the study were married. A significant proportion of the tribal community was engaged in labour, self-employment, farming, or unemployment. Few participants were in jobs. The study highlighted the association of substance use (alcohol and tobacco) with ethnic group, religion, age, education, occupation, and marital status among different tribal communities.

This detailed information provides insights into the complex interplay of socio-demographic factors, cultural practices, and occupational influences on alcohol consumption within the studied tribal community<sup>6,7</sup>.



Some researchers state that Hadiya is consumed in moderate amounts, which is expected to have medicinal and nutritive value.<sup>9</sup> but in our study, moderate and large alcohol drinking had detrimental effects on hepatocyte health<sup>8</sup>.

The factors predisposing to this development may include the amount, type, and duration of alcohol consumed along with certain less obvious facts like a person's genetic predisposition, race, sex, and other comorbid conditions. Alcoholic cirrhosis is diagnosed in patients with H/o alcohol consumption > 80 g/dl in men and 40 g/dl in women and with at least one or more clinical sign of hepatocellular failure and one of the signs of portal hypertension along with at least three ultrasound findings of cirrhosis of the liver.<sup>9</sup> This rising trend of alcohol-related staged liver damage has been explained by an earlier age of acquiring alcoholism, an increasing per capita intake of alcohol, and increasing trends of "at risk" drinking.<sup>10</sup> Some studies from eastern India, especially. West Bengal and north-eastern states have shown patients attending medical health care for some or other liver-related health issues started alcohol consumption before the legal age of drinking<sup>11,12</sup>

Suthar HN et al. studied 50 patients with alcoholic liver disease; all were male, and 58 % belonged to the age group 40-49 years. 60 % of patients have chief complaints of abdominal distension and melena. The commonest findings were Jaundice (60%) and ascites (60%). All patients had raised SGPT, SGOT, S.AIPO4, and S. bilirubin, suggesting liver damage. Prolonged PT and reduced S. albumin suggested reduced protein synthesis because of liver disease. Alcoholic hepatitis was in 24% of cases, while 40% had fatty liver and 36 % had alcoholic cirrhosis. The overall mortality rate was 20 %. The most common causes are encephalopathy (40%), coagulopathy leading to DIC (40%), and hepatorenal syndrome (20%). Alcoholic liver disease was seen among the productive age group with high morbidity and mortality. Similar findings were noted in the present study<sup>13</sup>

In the Jeewan Kumar et al. study, the mean age of the study group was  $46.93 \pm 8.83$  years. Country liquor was the most commonly consumed alcoholic beverage amongst the males (34.93%), while 95% of the females consumed Hadiya (traditional rice beer) explicitly. ALD developed earlier in those consuming country liquor and Hadiya together ( $6.16 \pm 1.49$ )<sup>1</sup>.

In the Biradar SM et al. study, 14 of the affected was males with an age group of 41-50 years. 43.8% of

patients had Fatty Liver disease, 23.1% had Alcoholic Hepatitis, and 33.1% had Liver cirrhosis. The secondary effects of ALD were portal hypertension (13.8%) followed by Ascites (10.8%) and Hepatitis (10%). Alcohol itself was the major risk factor involved in ALD (52.3%). Alcohol, along with smoking, exaggerates the disease condition. Periodic alcohol consumption (61.5%) and regular basis alcohol consumption (38.5%) for a chronic period of time may result in ALD.

In our study, most of the patients presented in the hepatitis stage with clinical features of hepatomegaly, anorexia, and jaundice, and biochemical features of altered liver function test. Patients presented with end-stage liver diseases were mostly in the compensated stage. Hepatic decompensation in the form of ascites, haematemesis, Melena, and hepatic encephalopathy was seen in less than 5% of patients. Patients attending the emergency department with decompensated stage were referred to other higher centres due to a lack of gastroenterology services, which was the major limitation of this study.

## CONCLUSION

Alcoholism has been a disease of antiquity. It causes collateral damage to human physical, mental, and socioeconomic health. The types of alcohol, amount, and duration of consumption have been related to the degree of liver damage. The findings in this study are based on the hospital-based population. However, it has been seen that drinking behaviour is the result of various reasons, including personal and cultural. Clinical interventions should focus on early detection by screening and timely treatment in the initial reversible stages. Urgent measures need to be taken to address and handle this rising problem in society.

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