



## A RETROSPECTIVE STUDY: INCREASE TREND OF ALCOHOLIC HEPATITIS AMONG GARHWALI POPULATION OF UTTARAKHAND

### PHYSIOLOGY

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### ABSTRACT

**Introduction:** Alcohol is the most commonly abused drug worldwide causing liver injury. There is high prevalence of alcohol use in the society particularly in the developed and developing nations. Alcohol affects all systems ranging from central nervous system, cardio-vascular system and genitourinary system. The World Health Organization estimates that there are 140 million people with alcoholism worldwide. In this study, we have focused on alcoholic hepatitis among the Garhwali population of Uttarakhand.

**Materials & Methods:** The study was carried out upon 680 Garhwali subjects, of which 124 patients were suffering from alcoholic hepatitis at the hepatology clinic, during the period from January 2015 to December 2018 at H.N.B. Govt. Base Hospital of Veer Chandra Singh Garhwali Govt. Medical Science & Research Institute, Srinagar, Uttarakhand. Medical laboratory tests and statistical tools were applied.

**Results:** Out of 680 subjects, incidence of alcoholic hepatitis was found 124 (18.2%) cases in this study. There was occurrence of alcoholic hepatitis only among the males and was found highest in the age group between 40-50 years, 69.4% belong to urban class while 30.6% belong to rural class society. It was also found that the incidence of alcoholic hepatitis was highest in the district of Pauri, followed by the district of Chamoli, Uttarkashi and Tehri in the Garhwal region of Uttarakhand.

**Discussion/Conclusion:** Increase incidence of alcoholic hepatitis seen among the male was mainly due to addiction of alcohol and increased socio-economic conditions of this region. Nowadays, consuming alcohol has also become a symbol of status in the society. We also found that the incidence of alcoholic hepatitis was increasing year after year from 8.9% in 2015 to 45.1% in the year 2018, was really a matter of concern. Mortality and morbidity associated with this disease is matter of serious economic loss to the nation and grief for the society.

### KEYWORDS

Alcoholic hepatitis, Garhwali population, Uttarakhand.

### INTRODUCTION

Alcohol is the most commonly abused drug worldwide causing liver injury with respect to dose, duration, type of alcohol consumption and drinking patterns and gender with diverse ethnicity and social customs. Today, there is high prevalence of alcohol use in the society particularly in the developed and developing nations. Mankind is using alcohol since ages for central nervous system stimulation, aphrodisiac etc. Even in Hindu mythology, it has been referred as "Somaras". Alcohol itself acts as a behavioural stimulant at lower blood levels but with higher blood levels it acts as a central nervous system depressant. Alcohol affects all systems ranging from central nervous system, cardio-vascular system and genitourinary system. The World Health Organization estimates that there are 140 million people with alcoholism worldwide. Alcoholism is called a "dual disease" since it includes both mental and physical components. The biological mechanisms that cause alcoholism are not well understood. Social environment, stress, mental health, family history, age, ethnic group and male, all influence the risk for condition<sup>1</sup>. Alcohol is consumed at some time in their life by 80% of the population<sup>2</sup>. Alcohol is associated with high morbidity and mortality: 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>3</sup>. Alcoholic liver disease encompasses a spectrum of injury, ranging from simple steatosis to frank cirrhosis<sup>4,5</sup>. It may well represent the oldest form of liver injury known to mankind. Evidence suggests that fermented beverages existed at least early as the Neolithic period (10,000 BC)<sup>6</sup>. Chronic and excessive alcohol ingestion is one of the major causes of liver disease in western world<sup>7,8</sup>. Alcohol remains one of the most common cause of liver disease in India as well. Alcoholic liver disease encompasses a clinical histological spectrum, including fatty liver, alcoholic hepatitis and alcoholic cirrhosis. Fatty liver is a benign condition but progression to alcoholic hepatitis and cirrhosis is life threatening. Alcoholic hepatitis is diagnosed predominantly on clinical history, physical examination and laboratory findings. The possible factors that can affect the development of liver injury include the dose, duration and type of alcohol consumption, drinking patterns, gender, ethnicity, and associated risk factors, including obesity, iron overload, nutritional deficiency especially proteins, pregnancy, concomitant infection with viral hepatitis and genetic factors<sup>9</sup>. In our present study, we have focused on alcoholic hepatitis among the

Garhwali population in the Indian state of Uttarakhand using laboratory and radiological investigations.

### MATERIALS & METHODS

The study was carried out upon Garhwali subjects suffering from liver diseases at the hepatology clinic, with the co-operation using laboratory and radiological investigations during the period from January 2015 to December 2018 at H.N.B. Govt. Base Hospital of Veer Chandra Singh Garhwali Govt. Medical Science & Research Institute, Srinagar, Uttarakhand. Data were also available at Medical Record Department (MRD) of HNB Base Hospital, Srinagar (Garhwal), Uttarakhand. Patient's details including occupation, socio economic status, risk factors, clinical features, complications, laboratory and radiological investigations were carried out. Patients with a history of significant chronic alcohol intake with physical signs of liver disease (jaundice, portal hypertension, complications of portal hypertension) and positive laboratory and radiological finding are included in study. Patients with viral hepatitis, cirrhosis, were also documented. Patients with any other form of chronic liver disease, Wilson's disease, Hemochromatosis etc.; and patients with other co-morbid illness such as cardiac, respiratory and renal illness are excluded. Alcoholic liver disease is diagnosed in patients with history of significant alcohol intake, physical signs of liver disease, and supporting laboratory investigations<sup>8</sup>. Alcoholic hepatitis is diagnosed in a patients with H/o alcohol consumption > 60ml/day in men and 40ml/day in female and at least one clinical sign of hepatocellular failure and one of the sign of portal hypertension<sup>6</sup>. All laboratory investigations including a liver chemistry profile (S. albumin, Bilirubin and transaminases, AST/ALT etc) were done. In this study, those patients are considered who had visited the hospital clinic more than three times in a year during the study period.

### Statistically Analysis

Collected data were entered in Microsoft Excel and analyzed using software Statistical Package for Social Sciences (SPSS) version 21.0. Descriptive statistical measures such as percentage, frequency were applied.

### RESULTS

Table 1 showed the distribution of study subjects, it was found that out

of 680 subjects incidence of alcoholic hepatitis was found 124 (18.2%) cases, incidence of cirrhosis was 120 (17.6%) cases, incidence of viral hepatitis was 340 (50%) and incidence of normal subjects was 96 (14.1%) respectively in this study.

Table 2 showed the gender wise distribution of the study subjects was found that 38.1% were females and 61.9% were males.

Table 3 showed that there was occurrence of alcoholic hepatitis only among the males and was found highest in the age group between 40-50 years followed by in the age group between 50-60 years.

Table 4 showed that out of 124 alcoholic hepatitis subjects, 69.4% belong to urban class while 30.6% belong to rural class society. In present study, it was also found that 60% patients belonged to middle class population, 18% were higher class while the rest of 22% belonged to the lower socio economic class. These is compatible with Sarin et al. study were 70% were middle class, 10% higher class and 20% lower socio economic status<sup>10</sup>. Jaundice was found in 64% of patients which was comparable with Pathak et al. in which it was 57.5%<sup>11</sup>.

Table 5 showed the year and district wise distribution of alcoholic hepatitis patients, in which it was found that the incidence of alcoholic hepatitis was increasing as year progresses. The incidence of alcoholic hepatitis in the year 2015 was 11 (8.9%), followed by in the year 2016 was 24 (19.4%), in the year 2017 the number increased to 33 (26.6%) and finally in the year 2018 the number of alcoholic hepatitis cases increased to 56 (45.1%). It was also found that the incidence of alcoholic hepatitis was highest in the district of Pauri, followed by in the district of Chamoli, Uttarkashi and Tehri in the Garhwal region of Uttarakhand.

## DISCUSSION

In India, particularly in Uttarakhand because of cultural and traditional value, females are not indulging in alcoholism. This was one of the main reason why we didn't get a single patient of alcoholic hepatitis in our study. Increase incidence of alcoholic hepatitis seen among the male was mainly due to addiction of alcohol and increased socio-economic conditions of this region. Nowadays, consuming alcohol has also become a symbol of status in the society.

## Conclusion

In our study, 57.3% patients belonged to age group 20-50 years, young and middle age population, which is active and productive mass for the society, was effected with alcoholic hepatitis. We also found that the incidence of alcoholic hepatitis was increasing year after year from 8.9% in 2015 to 45.1% in the year 2018, was really a matter of concern. High morbidity of alcoholic liver disease required frequent hospitalization adding to burden for health care system and loss of man-hours at work. Mortality and morbidity associated with this disease is matter of serious economic loss to the nation and grief for the society. We recommended screening for alcohol abuse among all adult patients presenting to the hospital as early detection of alcoholic liver disease can decrease both morbidity and mortality due to alcoholic liver disease.

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## Conflicts of interest

Nil.

Study subjects	Frequency	Percentage (%)
Normal	96	14.1
Alcoholic Hepatitis	124	18.2
Cirrhosis	120	17.6
Viral Hepatitis	340	50
Total	680	100

Sex	Frequency	Percentage (%)
F	259	38.1
M	421	61.9
Total	680	100

Age group (Yrs)	Alcoholic Hepatitis	
	Male	Female
<20	2	0
20-30	11	0
30-40	24	0
40-50	36	0
50-60	32	0
60+	19	0
Total	124	0

Social Status	Frequency	Percentage (%)
Urban	86	69.4
Rural	38	30.6
Total	124	100

Year	Alcoholic Hepatitis subjects						Total
	District						
	Chamoli	Haridwar	Pauri	Rudraprayag	Tehri	Uttarkashi	
2015	2	3	3	1	1	1	11
2016	6	4	4	3	2	5	24
2017	5	4	8	3	7	6	33
2018	9	5	17	8	9	8	56
Total	22	16	32	15	19	20	124

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