



## SOCIODEMOGRAPHIC PROFILE OF ALCOHOLIC LIVER DISEASE AMONG CHRONIC ALCOHOLICS IN SOUTH CENTRAL INDIA.

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### ABSTRACT

**Introduction:** Alcohol is a causal factor in more than 200 disease and injury conditions including chronic diseases such as alcohol dependence and liver cirrhosis to end stage liver disease in 10% cases and more commonly acute health problems.

**Objective:** To study the socio-demographic profile and prevalence of alcohol related liver diseases amongst chronic alcoholics.

**Methodology:** This study was conducted on 115 patients with history of chronic alcohol consumption, attending the opd/ipd in department of Medicine in a tertiary care centre in a region of south-central India for a span of 2 years (November 2008- November 2010). Data of 115 patients was obtained by complete history of alcohol intake including type, duration and amount of alcohol, thorough examination, blood parameters assessing presence of liver disease and abdominal USG was put to excel sheet and appropriate statistical tests were applied using IBM SPSS version 21. The questionnaire used, was predesigned and pretested semi structured, obtained by personal interview method.

**Results:** The prevalence of alcohol related diseases in this study was found to be 36(31.3%) fatty liver, 17 (14.7%) alcoholic hepatitis, 54(46.95%) alcoholic cirrhosis.

Amongst the 115 patients, only one was a female. The mean age of the study subjects was 43.98 (SD  $\pm$ 10.93). Most predominant age group was 30-49 years (64.4%). Most of the patients 68(59.1%) consumed country made liquor, the duration of alcohol use was at least three years for all the patients, 72(62.61%) of them had consumed it for more than ten years and the mean amount of alcohol consumption was 130 $\pm$ 17.42 gms/day. The type, duration and amount of liquor intake was found insignificant (at  $p < 0.05$ ) with respect to the alcohol related diseases. The history regarding diet, in terms of calories and protein, after alcohol consumption revealed that almost half of the patients (n=59, 51.3%) were taking inadequate diet.

**Conclusion:** The liver diseases in chronic alcoholics commensurate with the intake of alcohol and are not related to the amount, duration and type of alcohol intake.

**KEYWORDS :** Alcoholic Liver Disease, Chronic Alcoholics, Alcoholism.

### INTRODUCTION:-

Alcohol is deeply embodied in the modern society comprising of 208 million alcoholics amongst 7.8 billion world population<sup>2</sup>. Dating back to 10000 BC<sup>3</sup>, the discovery of king of ol's ethanol from barley, the production was place specific and addiction was adherent to upper class and royal families.

In recent years, some constraints on production, trade and consumption of alcohol have been weakened by increasing availability and accessibility of alcoholic beverages, leading to changes in drinking patterns across the globe. Public health problems associated with alcohol consumption have reached alarming proportions, and alcohol has become one of the most important risks to health globally, causing 3 million deaths every year that represents 5.3% of all deaths worldwide<sup>4</sup>.

Alcohol is a causal factor in more than 200 disease and injury conditions<sup>5</sup> including chronic diseases such as alcohol dependence and liver cirrhosis to end stage liver disease in 10%<sup>5</sup> cases and more commonly acute health problems. The 5 year survival rate of alcoholic cirrhosis is 26% -50 %<sup>6</sup> where the prognosis is worse than non-alcoholic cirrhosis. The risk of developing alcoholic cirrhosis is related to both the average daily intake of alcohol and duration of drinking<sup>7, 8</sup>. The variation in individual susceptibility to the hepatotoxic effects of alcohol varies at least ten folds<sup>8</sup>.

Patterns of alcohol drinking vary in each individual sociodemographic factor, hence the present study was done to elicit the effect of socio demographic variables on alcoholic liver diseases. Alcoholism was said to be chronic (chronic heavy drinker) when a person is drinking alcohol daily in excess for more than 5yrs,<sup>20</sup> until 2008 when it was rectified by division of mental health, WHO, Geneva as average daily ethanol consumption more than or equals to 75 gms in previous 2 years<sup>21</sup>.

### AIM AND OBJECTIVE:

To study the socio-demographic profile and prevalence of alcohol related liver diseases amongst chronic alcoholics.

### MATERIAL AND METHODS

The present cross-sectional study was conducted on patients who have history of chronic alcohol consumption attending the opd/ipd in department of Medicine in a tertiary care centre in a region of

south-central India for a span of 2 years (November 2008- November 2010).

Patients suffering from liver disease due to Chronic viral hepatitis, Drug induced hepatitis and Autoimmune hepatitis and those who were critically ill or with decompensated cirrhosis or who failed to produce a written consent were excluded.

All patients were subjected to oral pre-tested semi-structured questionnaire. History regarding alcohol intake in detail, a thorough general examination was done. The approximate amount of alcohol consumed by patient in grams/day was calculated on the basis of milliliters of alcohol per/day. One glass of alcohol was considered to be 200ml. calculations were done with the help of following conversions:

Country liquor 100ml = 23-36.1 gm. of alcohol

Whisky 30 ml = 10 gm. of alcohol

Wine 100 ml = 10 gm. of alcohol

Beer 250 ml = 10 gm. of alcohol

All the patients were subjected to investigations like abdominal ultrasonography (to elicit fatty liver, alcoholic hepatitis and alcoholic cirrhosis) and upper gastro-intestinal endoscopic examination, complete blood count, renal function test and liver function test including Sr. bilirubin, SGOT, SGPT, HCV & HBsAg, alkaline phosphates, total albumin, total globulin, A/G ratio, prothrombin time & INR.

Those who were negative for HCV & HBsAg were enrolled in the present study.

Liver biopsy was done in those patients who required and gave consent for the procedure. As this paper is a part of big study the clinical profile details are included in the following paper.

**Ethical clearance:** An informed written consent was obtained from the study participants. Ethical clearance was obtained prior from the institutional ethical committee.

### Statistical Analysis:

Data as entered in Ms Excel Sheets and presented as mean and percentages. Appropriate statistical measures are applied as required. Data was analyzed by using Statistical Software IBM

SPSS Version 21 and P<0.05 was considered as statistically significant.

**RESULTS:-**

The prevalence of alcohol related diseases in this study was found to be 36(31.3%) fatty liver,17(14.7%) alcoholic hepatitis,54(46.95%) alcoholic cirrhosis.

**Table 1:** -Table showing Socio Demographic Factors Distribution among Study Population

SOCIO DEMOGRAPHIC FACTOR		NO. OF PATIENTS(N)	PERCENTAGE (%)
GENDER	Male	114	99.1
	Female	1	0.9
AGE GROUPS IN YEARS (43.98 ±10.93)	20 – 29	9	7.8
	30 – 39	37	32.2
	40 – 49	37	32.2
	50 – 59	22	19.1
	60 – 70	10	8.7
DIETARY INTAKE AFTER ALCOHOL CONSUMPTION	Adequate Diet	56	48.7
	Inadequate Diet	59	51.3

**Table 2:** - Table showing Alcohol Related Factors Distribution among Study Population.

ALCOHOL RELATED FACTORS		NO. OF PATIENTS (N)	PERCENTAGE (%)
TYPE OF ALCOHOL	Country liquor	68	59.13
	Indian-made foreign liquor	20	17.39
	Both	27	23.48
DURATION OF ALCOHOL CONSUMPTION ( IN YEARS ) (11.64±3.71)	3 – 5	4	3.48
	6 – 10	39	33.91
	More than 10	72	62.61
AMOUNT OF ALCOHOL (Grams /Day) (130±17.42)	80 – 100	7	6.09
	100 – 120	10	8.7
	>120	98	85.21
USG LIVER	Normal	8	6.9
	Fatty Liver	36	31.3
	A. Hepatitis	17	14.8
	Cirrhosis	54	47

**Table 3:** - Comparison between Alcohol Related Factors withLiver Abnormality (USG) among study population.

		NORMAL LIVER (USG)	ABNORMAL LIVER (USG)	P VALUE
TYPE OF ALCOHOL	COUNTRY LIQUOR	7	61	0.49 (Yates corrected) (Not Significant)
	INDIAN-MADE FOREIGN LIQUOR	0	20	
	BOTH	1	26	
DURATION OF ALCOHOL CONSUMPTION ( IN YEARS )	3 – 5	1	3	0.9 (Yates corrected) (Not Significant)
	6 – 10	3	36	
	More than 10	4	68	
AMOUNT OF ALCOHOL	80 TO 120 ML	1	16	FISHER EXACT TEST VALUE 1 (Not Significant)
	>120 ML	7	91	

Table 3 shows no significant difference between type, amount and duration of alcohol with the liver disease patterns.

**DISCUSSION:**

Among 115 study participants,the mean age of the patients was 43.98 (±10.93) yrs which was similar to the mean age in a study by Roy K et al<sup>9</sup> in Punjab,average lied in 5<sup>th</sup> decade in the study by Hislopetal<sup>10</sup>,Hourigan K. J.et al<sup>11</sup>andOm K. Pathak et al<sup>12</sup>.The recent the study, involvement of a lower age group is found which may show a shift in future, where binge drinking is an additive factor in westernization.<sup>1</sup>

The study population was predominantly male (only one female) which was similar to that reported in a study done by Roy Ketal<sup>9</sup> in 1985,Hourigan K. J.<sup>11</sup> and Karasawa Tetal<sup>13</sup>.This may be as drinking alcohol is social taboo for females in India supported by NFHS-4data<sup>14</sup>where only 1% women drink alcohol in India.In contrast, studies done by S. Bellentanietal<sup>15</sup>,Om K. Pathak et al<sup>12</sup>,Saunders J B etal<sup>16</sup>,andBhathal P S etal<sup>17</sup>, who had enough female patients in their study in order to deduce conclusions. This is a limitation to our study.

Table 1 shows,Amongst the 115 patients, only one was a female. The mean age of the study subjects was 43.98 (SD ±10.93). Most predominant age group was 30-49 years (64.4%). The history regarding diet, in terms of calories and protein, after alcohol consumption revealed that almost half of the patients (n=59, 51.3%) were taking inadequate diet.

Table 2 shows, Most of the patients 68(59.1%) consumed country made liquor, whereas only 20(17.4%) consumed Indian-make foreign liquor. About 27(23.5%) patients consumed both types of liquor. The duration of alcohol use was at least three years for all the patients, 72(62.61%) of them had consumed it for more than ten years. 39 patients (33.91%) had consumed it for a period ranging between 6-10 years and 4 (3.48%) had taken it for 3-5 years. The mean duration of alcohol consumption was 11.64±3.71 (range was 3-22 years). Maximum number of patients 98 (85.21%) consumed more than 120 gms of alcohol/day. 7 (6.09%) patients consumed 80–100 gms. and 10 (8.70%) patients consumed 100 – 120 gms. of alcohol / day. The mean amount of alcohol consumption was 130±17.42 gms/day. Ultrasound of abdomen showed only 8 cases of (6.9%) normal liver, and rest 93.7% of them showed abnormal results, with Cirrhosis predominance (47%), followed by fatty liver (31.3%) and alcoholic hepatitis (14.8%).

In the present study, more than half of the patients (n=68, 59.13%) consumed country liquor as it was readily available and inexpensive. Similar observation in studies, conducted by Sarin SK etal<sup>18</sup> and Roy K etal<sup>9</sup> where 60% and 42.6% were found.

The mean amount of alcohol consumption was 130±17.42 gms/day and duration being 11.64±3.71 (range was 3-22 years) which was almost similar to that in the study conducted by Hourigan KJ at al<sup>11</sup>(131 gms) and Roy K etal<sup>9</sup>. Even amongst the 32 chronic alcoholic patients that were studied by Roy K etal<sup>9</sup>in 1985, 4 (12.5%) consumed alcohol more than 1000gms per day and 17 (53.25) consumed more than 200gms per day. In a study by Xiolanlu etal<sup>19</sup> revealed that < 20 gms alcohol when taken daily for a duration of 5 years, can cause no ALD which is not similar to our study, in which even after an intake of 120 gm/day for <5 yrs or more,we cannot be sure of not having an ALD .This points towards varied HLA typing and genetic predisposition to effect of alcohol on hepatic cells, their pathogenesis, recovery and mortality. This may demand for further research in HLA and associated genes.

Hence, in any case drinking alcohol is injurious to health in varied

aspects and spectrum of alcoholic liver disease being a subtle part of it.

In the present study, there were 59 patients (51.3%) who were taking inadequate diet after consumption of alcohol whereas 56 patients (48.70%) took adequate diet after alcohol consumption. Similar results were obtained by S. Bellentani<sup>et al</sup>4.

#### CONFLICT OF INTEREST:

No conflict of interest, external funding was involved in the present study.

#### CONCLUSION:

The liver diseases in chronic alcoholics commensurate with the intake of alcohol and are not related to the amount, duration and type of alcohol intake. Drinking alcohol being injurious to health at any age, beginning at an early age and binge drinking can cause alarming mortality in chronic alcoholics.

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