



"PREVALENCE OF ALCOHOLISM AMONG TRIBALS OF JHARKHAND WITH CHEST DISCOMFORT"

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ABSTRACT

AIMS: Cross sectional observational comparative study in a tertiary care hospital on "Prevalence of Alcoholism among tribals of Jharkhand with Chest discomfort".

MATERIAL AND METHODS: 102 tribal subjects (53 male and 49 female) from Jharkhand, India were selected for the study, who had presented with chest discomfort with history of alcoholism.

RESULTS: The prevalence rate of Alcoholism among tribal males, 71.69% were moderate drinkers, 18.86% were heavy drinkers. Whereas among tribal females 57.14% were moderate drinkers and 10.20% were heavy drinkers.

CONCLUSION: The prevalence of Alcoholism among tribal patients of chest discomfort was found to be 50% and 39.21% among male and female tribal's of Jharkhand, India respectively.

KEYWORDS : Alcoholism, Chest discomfort, Tribal of Jharkhand.

INTRODUCTION

Several studies have indicated that moderate drinkers have a lower risk of both nonfatal myocardial infarction and fatal heart disease than do abstainers [1]. To determine whether alcohol truly prevents coronary heart disease or whether other factors may contribute to this observed relationship, researchers conducted a systematic literature review and a combined analysis (i.e., meta-analysis). This analysis found that consumption of up to two drinks per day can promote changes in the levels of molecules that reduce the risk of heart disease while also increasing the levels of certain molecules that promote heart disease. Alcohol also may affect the risk of heart disease by acting on other various molecules involved in a variety of physiological processes related to heart disease. Finally, the relationship between alcohol consumption and heart disease may be modulated by genetic factors [2]. Jharkhand with its rich culture and heritage is also in increasing pace of development, urbanization, changing trends in life style, with growing modernization and is also facing increased risk to I.H.D. The risk factors like diabetes, hypertension, and obesity for I.H.D. and are frequently seen in hospitals.

The rural tribes are thin built, physically fit and have dwelling in hilly terrain of Jharkhand, down the centuries. They are hard workers engaged in cultivation in hilly land, wood cutting etc, and Migrate to nearby- town to work as unskilled laborers during non cultivation season. Their traditional way is slowly changing, but still they are leading a life segregated from modern civilization, in contrast to urban tribes who have easy access to modernization and lead a more or less sedentary life and various harmful habits like smoking and alcoholism. Prevalence of Ischaemic heart disease is low in rural in contrast to urban population [3]. Hence a low prevalence IHD is expected among tribals; however in a recent data collected over five years at Jharkhand reveals alarming prevalence showing 47% population are substance abuser [4].

The Objective of present study is to determine the prevalence of Alcoholism among patients of chest pain in Tribal population in a tertiary care centre of Jharkhand, India.

Methodology:

The study is a part of a major study entitled "A study on prevalence of ischaemic heart disease in tribes of Jharkhand" was conducted in

Rajendra institute of Medical sciences, Ranchi, in department of Medicine. This hospital is responsible for catering medical services to tribal as well as non tribal coming from all walks of life. The target of present study is those tribes of Jharkhand hailing from rural as well as urban background and who attend medical outdoor patient's department with complain of chest pain and palpitation.

Procedure:

Quantity of alcohol and duration of alcohol consuming habit were noted. The tribes were grouped into following categories according to their drinking habit: Heavy drinker: A person who partakes of more than 3 drinks daily. Moderate drinker: A person who consumes up to 3 drinks daily. Occasional drinker: A person who drinks occasionally, e.g. on festivals.

Statistical Analysis:

The collected data of all patients was statistically analyzed, using Statistical Package for Social Sciences (SPSS, Inc., Chicago, Illinois) version 10.0. Frequency analysis was used for categorical data wise and percentage calculated.

RESULTS:

In present study among tribal males, Out of 53 male subjects studied 38 (71.69%) were moderate drinkers, 10 (18.86%) were heavy drinkers. The occasional drinkers was 3 (5.66%) and non-alcoholics were 2 (3.77%) they belonged to age group 60 and above. Out of total 12 urban subjects 4 (7.54%) were heavy drinker. 2 belonging to age group 30-39 and 2 to age group 40-49, 8 (15.09%) of them were moderate drinker, 2 belonged to age group 30-39, and 3 belonged to 40-49 and 3 subjects > 60.

Out of 49 female subjects studied 28 (57.14%) were moderate drinkers. Heavy drinkers constituted 5 (10.20%) they belonged to age group >50 years. 9 subjects were non alcoholic; half of them belonged to 50-59 years age group. Out of 10 female subjects living in urban area none of them admitted to alcohol abuse. In this study on tribal population of Jharkhand, the percentages of heavy drinker's moderate drinkers, occasional drinkers and non drinkers in male tribal were 18.86 percent, 71.69 percent and 5.66 percent, and 3.77 percent respectively. In females, percentage of heavy, moderate, occasional drinker and non drinkers were 10.20 percent, 57.14 percent, 14.28 percent and 18.36 percent respectively. The

percentages of moderate drinkers in both male (71.69 percent) and female (57.14 percent) were highest.

The current study shows 1 E.C.G features of left ventricular hypertrophy in electrocardiogram compatible with or predictive of coronary heart disease was found. The questionnaire regarding exertional chest pain did not elicit a positive response from even a single subject.

The prevalence rate of Alcoholism among tribal males, 71.69% were moderate drinkers, 18.86% were heavy drinkers. Whereas among tribal females 57.14% were moderate drinkers and 10.20% were heavy drinkers.

DISCUSSION:

In present study it has observed that the pattern of alcoholism is the contributor to the cardiovascular complications. Among tribal males, Out of 53 male subjects studied 38 (71.69%) were moderate drinkers, 10 (18.86%) were heavy drinkers. The occasional drinkers were 3 (5.66%) and non-drinkers were 2 (3.77%) and they belonged to age group >60. Out of total 12 urban subjects 4 (7.54%) were heavy drinker. 2 belonging to age group 30-39 and 2 to age group 40-49, eight (15.09%) of them were moderate drinker, 2 belonged to age group 30-39, and 3 belonged to 40-49 and 3 subjects to >60.

Out of 49 female subjects studied 28 (57.14%) were moderate drinkers. Heavy drinkers constituted 5 (10.20%) they belonged to age group >50 years. 9 subjects were non alcoholic; half of them belonged to 50-59 years age group. Out of 10 female subjects living in urban area none of them was alcohol abuser.

In this study on tribal population of Jharkhand, the percentages of heavy drinkers moderate drinkers, occasional drinkers and non alcoholics in male tribal were 18.86 percent, 71.69 percent and 5.66 percent, and 3.77 percent respectively, and in females, percentage of heavy, moderate, occasional drinker and non alcoholic were 10.20 percent, 57.14 percent, 14.28 percent and 18.36 percent respectively. The percentages of moderate drinkers in both male (71.69 percent) and female (57.14 percent) were highest.

The evidence from prospective studies in general are more consistent, showing that risk of death from C.H.D is higher in non alcoholics than in those who drinks moderately [5]. This is true both of questionnaire based studies and those involving personal examination. Excessive alcohol consumption has long been associated with cardiovascular disorders, including cardiomyopathy, hypertension, coronary artery disease, and stroke. However, recent evidence suggests that moderate alcohol intake can actually provide a measure of cardio protection, particularly against coronary heart disease and ischemia-reperfusion injury [6]. Moderate drinking is defined as no more than one drink/day for women and two drinks/day for men (U.S. Department of Health and Human Services/U.S. Department of Agriculture Dietary Guidelines 2005). In the U.S., one drink is usually considered to be 12 oz of beer, 5 oz of wine, or 1.5 ounces of spirits. A standard drink contains 0.6 oz (15 g) of ethanol [7].

There have been several reports that non drinkers have a higher mortality from coronary heart disease than people, who consumed moderate amount of alcohol [5]. A meta-analysis of the relationship between moderate alcohol intake and risk of developing CHD showed that, compared with abstinence, moderate alcohol consumption (as much as 30 g/day) is causally related to a 20% to 45% reduction in the risk of developing CHD [8]. The proportion of reduced risk not accounted for by increased HDL-C may be attributable to alcohol-induced increased insulin sensitivity, lower levels of inflammatory markers such as interleukin (IL)-6, C-reactive protein, and tumor necrosis factor-alpha, constituents of beverages other than alcohol, and polymorphisms among alcohol metabolizing enzymes, which reduce toxic metabolites, primarily acetaldehyde [2,9]. The pattern of alcohol consumption as it relates

to clinical outcomes and changes in cardiovascular risk has been examined in the Framingham cohort [10], in which most adult men and women, approximately 80% and 67%, respectively, consume alcohol. The proportion of individuals consuming alcohol decreases with age, a trend that may relate to adverse clinical outcomes.

The presence of risk factors such as diabetes mellitus type 2, hypercholesterolemia, and smoking exacerbate the progression of atherosclerotic disease and trigger atherothrombotic complications [11], these risk factors are all modified by alcohol.

Thus it may be concluded that tribal population of Jharkhand has very little prevalence of coronary heart disease and appears to be relatively free of the factors known to put people at risk of Ischaemic heart disease. The prevalence of I.H.D. is 1.41% among tribal population of Jharkhand. The prevalence was found exclusively in tribal female living in urban area mostly due to adopting sedentary pattern of life style.

Conclusion:

The prevalence of alcoholism among tribal male subjects of chest discomfort was 18.86 percent for heavy drinkers 71.69 percent for moderate and 5.66 percent for occasional drinker, and 3.77 percent for non alcoholic and among female subjects 10.20 percent for heavy drinkers. 57.14 percent for moderate drinkers, 14.28 percent for occasional drinkers and 18.36 percent for non alcoholics.

TABLE NO -1: Sex ratio of the population examined

SEX	NO OF SUBJECTS		PERCENTAGE
	Urban	Rural	
MALE	12 (11.76%)	41 (40.19%)	51.96%
FEMALE	10 (9.80%)	39 (38.23%)	48.03%
TOTAL	22 (21.56%)	80 (78.43%)	102

Table No-1: In this study 102 subjects were examined. Male patient constituted (53) 51.96% of total study Subjects. (12) 11.76% were males residing in urban area and (41) 40.19% in rural area. Female subject studied constituted (49) 48.03% out of which (10) 9.80% resided in urban area and (39) 38.23% in rural area.

TABLE -2: Age Wise Distribution of male subjects

AGE GROUP	NO. OF SUBJECTS	PERCENTAGE OF THE TOTAL POPULATION EXAMINED
30-39 Yrs	08	07.84%
40-49 Yrs	22	21.56%
50-59 Yrs	16	15.68%
60 Yrs AND ABOVE	07	06.86%
TOTAL	53	51.96%

Table-2: The maximum number of males examined belonging to age group 40-49 in which total Numbered was 22 (21.78% of total population examined). The age group 60 and above was 7 i.e. 6.93% of total subjects examined.

TABLE-3: Age Wise Distribution of Female Subjects

AGE GROUP	NO. OF SUBJECTS	PERCENTAGE OF POPULATION EXAMINED
30-39 Yrs	08	07.84%
40-49 Yrs	08	07.84%
50-59 Yrs	21	20.58%
60 Yrs AND ABOVE	12	11.76%
TOTAL	49	48.03%

The maximum number of female subjects belonged to the age group of 50-59, and numbered 21 i.e. 20.58% of total population. The population of female subjects above 60 years was 12 i.e. 11.76%.

TABLE-4: Habit of Alcoholism among Male Subjects

AGE GROUP	NO. OF SUBJECTS	HEAVY DRINKER	MODERATE DRINKER	OCCASSI ON DRINKER	NON ALCOHO LIC
30-39Yrs	12	4	08	0	0
40-49Yrs	20	4	14	2	0
50-59Yrs	14	1	12	1	0 i
60Yrs AND ABOVE	07	1	04	0	2
TOTAL	53	10	38	3	2
PERCENTAG E OF MALE STUDIED		18.86%	71.69%	5.66%	3.77%

Table-4: Out of 53 tribal males 38(71.69%), 10(18.86%), 3(5.66%) and 2(3.77%) were moderate drinkers, heavy drinkers, occasional drinkers and non- alcoholics respectively.

TABLE-5: Habit of Alcoholism among Female Subjects

AGE GROUP	NO. OF SUBJEC TS	HEAVY DRINKER	MODERAT E DRINKER	OCCASSI ONAL DRINKER	NON ALCOHOL IC
30-39Yrs	08	0	04	1	3
40-49Yrs	08	0	06	1	1
50-59Yrs	21	2	12	3	4
60Yrs AND ABOVE	12	3	06	2	1
TOTAL	49	5	28	7	9
PERCENTAGE OF MALE STUDIED		10.20%	57.14%	14.28%	18.36%

TABLE-5: Out of 49 female 28 (57.14%), 5(10.20%), 7(14.28%) and 9(18.36%) were moderate drinkers, heavy drinkers, occasional drinkers and non alcoholic respectively.

REFERENCES

1. Jackson R, Scragg R, Beaglehole R. Alcohol consumption and risk of coronary heart disease. *BMJ*. 1991 Jul 27;303(6796):211-6
2. Mukamal KJ, and Rimm EB. Alcohol's Effects on the Risk for Coronary Heart Disease. *Alcohol Research & Health* 2001 Vol. 25, No. 4, pg 255-261.
3. Oommen AM, Abraham VJ, George K, Jose VJ. Prevalence of coronary heart disease in rural and urban Vellore: A repeat cross-sectional survey. *Indian Heart J*. 2016 Jul-Aug;68(4):473-9
4. Soren S, Hembrom M, Prasad S, Bakhla AK. Prevalence and Pattern of Substance Abuse in Patients Attending District Mental Health Programme (DMHP) Dumka (Jharkhand). *Global journal of research analysis*, 2017; 6(6);144-145.
5. Yano K, Reed DM, McGee DL. Ten-year incidence of coronary heart disease in the Honolulu Heart Program: relationship to biologic and lifestyle characteristics. *Am J Epidemiol*. 1984;119:653-666.
6. Diane LL, Brown RA, Wassef M, Giles TD, et al. Alcohol and the Cardiovascular System: Research Challenges and Opportunities. *Journal of the American College of Cardiology* 45(12):2005;1916-1924.
7. Djousse L, Ellison RC, Beiser A, Scaramuccii A, D'Agostino RB. Et al Alcohol consumption and risk of ischemic stroke: the Framingham Study. *Stroke* 2002;4:907-12.
8. Rimm EB, Williams P, Fosher K, Criqui M, Stampfer MJ. Moderate alcohol intake and lower risk of coronary heart disease: meta-analysis of effects on lipids and haemostatic factors. *Br Med J* 1999;319: 1523-8.
9. Durrington PN, Mackness B, Mackness MI. Paraoxonase and atherosclerosis. *ArteriosclerThrombVasc Biol* 2001;21:473-80.
10. Walsh CR, Larson MG, Evans JC, et al. Alcohol consumption and risk for congestive heart failure in the Framingham Heart Study. *Ann Intern Med* 2002;136:181-91.
11. Libby P. Vascular biology of atherosclerosis: overview and state of the art. *Am J Cardiol* 2003;91:3A-6A.