



ORIGINAL RESEARCH PAPER

General Medicine

“PREVALENCE OF DYSLIPIDEMIA AMONG TRIBALS OF JHARKHAND WITH CHEST DISCOMFORT”

KEY WORDS: Dyslipidemia, Chest discomfort, Tribal of Jharkhand.

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ABSTRACT

AIMS: Cross sectional observational comparative study in a tertiary care hospital on Prevalence of dyslipidemia among tribals of Jharkhand with chest discomfort.
MATERIAL AND METHODS: 102 subjects (53 males & 49 females) were selected for the study, who had presented with chest discomfort and history of dyslipidemia.
RESULTS: In this study result shows that in males, the mean serum cholesterol level had a rise, but not much significant from the age groups 30-39 to 50-59 years followed by a significant fall in age group 60 and above. Whereas in females there was a significant rise in mean serum cholesterol level from age group 30-39 to 50-59, followed by a significant fall in age group 60 and above, which was still higher than that age groups 30-39 and 40-49.
CONCLUSION: The prevalence of dyslipidemia in patient with chest discomfort is 1.41% among tribal population of Jharkhand and the prevalence was found exclusively in tribal female living in urban area.

INTRODUCTION

Dyslipidemia is recognized as a prominent risk factor for cardiovascular (CV) disease [1]. South Asians have a higher prevalence of cardiovascular risk factors, type-2 diabetes mellitus (T2DM) and earlier onset of cardiovascular disease (CVD) despite a normal body mass index (BMI) by international standards [2,3]. It is expected that individuals of Indian Asian ethnicity will account for 40-60% of global CVD burden within the next 10-15 years.[4] It has been hypothesized that higher risk observed in this ethnic group can be due to underlying genetic susceptibility[5] unmasked by environmental factors and excess accumulation of visceral body fat in adult life [6]. The metabolic abnormalities associated with increased visceral fat; raised triglycerides (TG) and low high density lipoprotein (HDL) cholesterol are more prevalent in individuals of South Asian origin [2,7-9] 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 dyslipidemia. The risk factors like diabetes, hypertension, and obesity for dyslipidemia and are frequently seen in hospitals. Dynamic improvement has been made in management of dyslipidemia and its complication, the reduction in case fatality is marginal, and far more expensive to reach of major population. It is fact that myocardial infarction, angina are manifestation of late atherosclerosis, and secondary prevention would not be as effective as primary prevention.

The studies that have been undertaken in India so far, only few studies have been done in the tribal population of Jharkhand. The rural tribes are thin built, physically fit and have dwelling in hilly terrain of Jharkhand, down the centuries. Their staple diet is rice followed by maize, madua, bazra, wheat, lentils. They partake in locally brewed liquor. The diet is strikingly lacking in animal protein and fat. 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. Different epidemiological studies have given divergent results as regards to relation between smoking and coronary heart disease. Thus we planned this study to assess the prevalence of dyslipidemia among tribals of Jharkhand with chest discomfort

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. All consenting patients were asked about their socio demographic and clinical information. The blood was collected for serum cholesterol measurement. The collection procedure included 2ml of venous fasting blood in morning in a dry autoclaved syringe. Serum cholesterol was measured by the Biodynamic Cholesterol method utilizing Lieberemann-Burchard reaction with Biodynamic Digitik system Kits.

RESULTS:

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-1). The maximum number of males examined belonging to age group 40-49 in which total Numbered was 22 (21.56%) of total population examined. The age group 60 and above was 7 (6.86%) of total subjects examined (Table-2). The maximum number of female subjects belonged to the age group of 50-59, and numbered 21(20.58%) of total population. The population of female subjects above 60 years was 12(11.76%) (Table-2).

Maximum mean cholesterol level in male subjects was observed in age group 50-59. The serum cholesterol level remained almost static in all age groups except in age groups 60 and above, where there was significant fall. The mean difference between age group 50-59, and 60 and above was significant. The mean serum cholesterol in 60 and above was 143 +/- 4.00 mg/dl. There was no significant difference between males residing in urban as well as rural areas (Table-3).

Maximum mean serum cholesterol level in female subjects observed was 178.61+/-2.71 mg/dl. There was a significant rise in serum cholesterol with advance in age except in age group 60 and

above, where significant fall in serum cholesterol level was observed. The mean differences between age group were significant. The serum cholesterol level was similar in both rural and urban area (Table-4).

The mean serum cholesterol level in the present study was found to be 164.4 mg/dl and 170.1 mg/dl among males and females respectively. In males Serum cholesterol had a rise from the age group 30-39 to 50-59 followed by a significant fall in the age group 60 and above. In females there was a significant rise in the age group 60 and above. In females there was a significant rise in mean serum cholesterol level from age group 30-39 to 50-59 followed by a significant fall in the age group 60 and above, still the mean cholesterol level in this age group in higher than that in age group 30-39 and 40-49.

DISCUSSION:

The maximum mean cholesterol level in male was observed in age group 50-59. The serum cholesterol level remained almost static in all age groups except in age groups 60 and above, where there was significant fall. In female there was a significant rise in serum cholesterol with advance in age except in age group 60 and above, where significant fall in serum cholesterol level was observed. The serum cholesterol level was similar in both rural and urban areas for both males and females.

The low serum cholesterol level in tribes of Jharkhand in comparison to more developed communities may be attributed to the striking lack of fat especially saturated fat, in their diet. Their items of food as ascertained from the questionnaire were found to consist of as follows: rice, maize, mahua, wheat, a little lentils, and edible roots. Their food especially of rural tribes is strikingly lacking in fat and animal protein. The intake of raw fruits and vegetables might have some antioxidant property. A serum cholesterol level varies widely from one community to another. In other part of India the study done, but the result is same as the current study.

The prevalence of high TG (28-72.2%), high LDL cholesterol (23.3-44.5%), low HDL (27-72.2%) and high total cholesterol (19-38.7%) were observed from north, west and southern part of India [3, 10-14]. In a study done in India (Delhi) in young (below 40 years) CAD patients, had high prevalence of raised TG (72.2%), low HDL (72.2%) and low prevalence of raised total cholesterol (29%), which is similar to our study.[14] In this study, atherogenic dyslipidemia was present in 41.3% of patients. In a study carried out in Italy is also similar, subjects with atherogenic dyslipidemia had comparable total cholesterol levels compared with those without atherogenic dyslipidemia. [15]

In an another study it has shown that in regard to triglycerides, observational data from the National Health and Nutrition Examination Survey (NHANES) found that the percentage of adults aged 60 years or more with elevated triglycerides (≥ 150 mg/dl) increased more than 5-fold over the period 1976–2006. [16]. In males, the mean serum cholesterol level had a rise, but not much significant from the groups 30-39 to 50-59 followed by a significant fall in age group 60 and above.

In females there was a significant rise in mean serum cholesterol level from age group 30-39 to 50-59, followed by a significant fall in age group 60 and above, which was still higher than those age groups 30-39 and 40-49.

Most of these low pressure groups showed low blood lipid pattern. In present study the mean serum cholesterol levels were 164.42 mg /dl and 170.1 mg/dl in male and female tribes respectively. The mean serum cholesterol level in male subjects of the age 60 and above was lower than the earlier age groups. This may be another factor contributory to lower systolic and diastolic blood pressures in older age groups in male tribal.

So, this study suggests that ethnicity may be responsible for these variations. The study has addressed specific population of tribal, which is very less studied, future studies should include larger sample size, and specific diagnosis with other ethnic group, socio

culture and biological parameters.

Conclusion:

Thus it may be concluded that prevalence of dyslipidemia among the patient with chest discomfort was found to be 1.41% among tribal population of Jharkhand, exclusively in tribal female living in urban area with sedentary pattern of life style.

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%)	100

TABLE -2: Age Wise Distribution of Male and Female Subjects.

Age group	Male		Female	
	n	Percentage	n	Percentage
30-39 Yrs	08	07.84%	08	07.84%
40-49 Yrs	22	21.56%	08	07.84%
50-59 Yrs	16	15.68%	21	20.58%
60 Yrs +	07	06.86%	12	11.76%
TOTAL	53	51.96%	49	100%

TABLE-3: Serum Cholesterol level in Male Subjects.

Age Group	Total no of subjects	Range	Mean +/-s.e	S.d	Coefficiant Of Variation
30-39Yrs	08	149-181	160.87+/- 3.76	10.59	6.59
40-49Yrs	22	141-192	166.59+/- 2.50	11.43	06.9
50-59Yrs	16	157-203	172.62+/- 3.00	11.99	06.9
60Yrs and above	07	131-161	143.00+/-4.00	10.58	07.3

TABLE-4: Serum Cholesterol level in Female Subjects

Age Group	Total no. Of subjects	Range	Mean +/-s.i	S.d	Coefficiant of Variation
30-39Yrs	8	139-161	149.75+/-2.60	7.32	4.9
40-49Yrs	8	148-181	160.87+/-4.11	11.16	6.9
50-59Yrs	21	159-201	178.61+/-2.71	12.43	6.9
60Yrs and above	12	144-205	166.58+/-4.57	15.82	9.5

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