

Original Research Article

Prevalence of hypertension among tribals of Jharkhand with chest discomfort

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ABSTRACT

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

Methods: 102 subjects (53 male and 49 female) were selected for the study, who had presented with chest discomfort and history of Hypertension.

Results: In the current study total 102 subjects were taken, 53 were males. Among tribal males prevalence rate of hypertension, using (J.N.C.-7) criteria majority of them (41subjects 77.35%) were Prehypertensive. 8 subjects (15.09%) had normal blood pressure, 3 subjects (5.66%) had stage -I hypertension and only 1 subject (1.88%) had stage-2 hypertension. In females out of 49 subjects 28 subjects (57.14%) were pre hypertensive, 17 subjects (34.69%) were Normotensive and only 2 subjects (4.08 %) had stage -1 hypertension, as well as 2 subjects (4.08 %) had stage-2 hypertension.

Conclusions: The prevalence of Hypertension among tribal patients of chest discomfort was found to be prehypertensive in 40.19% and hypertensive in 3.92% among male and among female tribal's prehypertensive in 27.45% and hypertensive in 3.92%.

Keywords: Chest discomfort, Hypertension, Tribal of Jharkhand

INTRODUCTION

Ischemic Heart Disease (IHD) accounts for approximately 1.2 million deaths annually and is the commonest cause of death globally. There are approximately 60 deaths per 100,000, giving rise to standardized mortality rate of 200 per 100,000, and continues to be a major cause of morbidity and mortality. It is a major cause of death and disability in developed countries. Although the mortality for this condition has gradually declined over the last decades in western

countries, it still causes about one-third of all deaths in people older than 35 years.¹⁻³ Our state Jharkhand has the risk factors like diabetes, hypertension, and obesity for I.H.D. and is frequently seen in hospitals. It is a fact that myocardial infarction and angina are manifestation of late atherosclerosis, and secondary prevention would not be as effective as primary prevention.

The studies are scanty, that have been undertaken IHD and Hypertension in the tribal population of Jharkhand, India. However, prevalence of Ischaemic heart disease is

low in rural tribal in contrast to urban tribes who have adapted to urbanized way of life. Their staple diet is rice followed by maize, madua, bazra, wheat, lentils. The diet is strikingly lacking in animal protein and fat. 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.⁴ The evidence from prospective studies in general are more consistent, showing that risk of death from I.H.D is higher in non alcoholics than in those who drinks moderately.⁵ In a study by Hendrix et al, found that 11% of hypertensives had a chest pain syndrome.⁶ Of these patients, 66% (5284) were diagnosed with chest pain only, 15% (1204) with angina, and 19% (1508) with Ischemic Chest Syndrome (ICS). More men than women were diagnosed with angina (18% v 4%) and ICS (21% v 10%).⁷ Hypertension doubles the risk of cardiovascular disease and accelerates significantly the development of atherosclerosis

The objective of present study is to determine the prevalence of hypertension among patients of chest discomfort in tribal population of Jharkhand.⁸ For severe disease ($\geq 75\%$ stenosis in all three major arteries or of the left main coronary artery obstruction) the following variables were significant predictors; age, gender, chest pain (type, frequency, course, nocturnal, length of time present), diabetes, smoking, hyperlipidaemia, hypertension, peripheral or cerebral artery disease, carotid bruit, prior MI, and significant Q waves and ST-T wave changes. Coronary heart disease (CHD) is the greatest contributor to CVD and risk factors such as cigarette smoking, elevated cholesterol levels, high blood glucose, high blood pressure, physical inactivity and obesity are the driving forces behind the disease burden.^{9,10} Over 90% of CHD events occur in individuals with at least 1 risk factor. We planned this cross sectional observational study in a tertiary care hospital to measure the prevalence of hypertension among tribal population of Jharkhand with chest discomfort.

METHODS

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

Blood pressure of each subject is measured by sphygmomanometer with a cuff measuring 12.5cm, in

supine position when patient was completely relaxed. The cuff was applied 2.5cm above the antecubital fossa. Hypertension was considered to be present according to J.N.C-7 criteria, patients having blood pressure 120/80 was considered normal. Those having Blood pressure ranging 120-139 systolic and diastolic pressure from 80-89mm of mercury were considered pre-hypertensive. Patients having systolic pressure ranging from 140-159 and diastolic pressure ranging 90-99 were considered to be having hypertension stage I and those having blood pressure greater than 160/100 were kept under stage II hypertension.

RESULTS

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 (6.93%) of total subjects examined (Table 1).

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).

Table 1: 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 and above	07	06.86%
Total	53	51.96%

Table 2: Age wise distribution of female subjects.

Age group	No. of subjects	Percentage of population examined
30-39yrs	08	07.84%
40-49yrs	08	07.84%
50-59yrs	21	20.58%
60yrs and above	12	11.76%
Total	49	48.03%

In the current study, total 102 subjects were taken. Among 102 subjects 53 were males and 49 were females. The prevalence rate of hypertension among tribal males, using (J.N.C.-7) criteria depicts that out of total (53) male subjects examined majority of them (41 subjects 77.35%) were prehypertensive (Table 3).

Most of them belonged to age group 40-49 year (14 cases) and 50-59 years (15 cases). 8 cases (15.09%) of subjects had normal blood pressure. 3 subjects (5.66%) had stage-I hypertension, belonging to age group >50. Only 1 subject (1.88%) had stage-2 hypertension and belongs to age group >60 years.

In females out of 49 subjects 28 subjects (57.14%) were pre hypertensive, 17 subjects (34.69%) were Normotensive, most of them belonged to age group 30-49 years. Only 2 subjects (4.08 %) had stage-1 hypertension, as well as 2 subjects (4.08 %) had stage-2 hypertension, in age group >50. The prevalence of IHD in tribal population among 53 male subjects only 4 subjects were

hypertensive (3 subjects were stage I and 1 had stage II HTN) and only 2 subjects (3.77%) were presented with chest discomfort. Among 49 female subjects, 4 subjects were hypertensive (2 subjects in both stage I and II HTN), only 1 (2.04%) subject had chest discomfort. In both study group age group was 60 years and above.

Table 3: Hypertension in male subjects.

Age group	Normal	Prehypertension	Hypertension stage-1	Hypertension stage-2
30-39yrs	04	07	0	0
40-49yrs	02	14	0	0 1
50-59yrs	01	15	1	0
60yrs and above	01	05	2.	0
Total	08	41	3	1
% of male studied	15.09%	77.35%	5.66%	1.88%

Table 4: Hypertension in female subjects.

Age group	Normal	Prehypertension	Hypertension stage-1	Hypertension stage-2
30-39yrs	07	08	0	0
40-49yrs	05	08	0	0
50-59yrs	03	06	1	0
60yrs and above	02	06	1	2
Total	17	28	2	2
% of female studied	34.69%	57.14%	4.08%	4.08%

Table 5: Prevalence of IHD in hypertensive tribal population.

Age group	Male (n=4)	Female (n=4)
30-39	0	0
40-49	0	0
50-59	0	0
60 and above	2	1
Total	2	1
% of IHD in HTN	50%	25%
% of IHD in Tribal (n=53 in male, n=49 in female)	3.77%	2.04%

The Table 4 shows the number of females having hypertension using (J.N.C.-7) criteria depicts that out of total female subjects examined nearly majority of them were pre hypertensive (57.14%), 34.69% were Normotensive, most of them belonged to age group 30-39years and 40-49 years. 4.08 % of women had stage -1 hypertension, as well as stage-2 hypertension, exclusively in age group 50-59 and 60 and above.

The Table 5 shows the prevalence of IHD in tribal population among 53 male subjects 4 were hypertensive (3 subjects were stage I and 1 was in stage II HTN), only

2(3.77%) were presented with chest discomfort, while among 49 female subjects 4 were hypertensive (2 subjects in both stage I and II HTN), only 1 (2.04) had chest discomfort. In both study group age group was 60 years and above.

DISCUSSION

In the current study, it has observed that hypertension was perhaps the most universal contributor to all forms of cardiovascular disease. However, it has emphasized that it never been possible to produce atherosclerosis unless cholesterol levels were raised by feeding cholesterol rich diets.

In this study, total 102 subjects (53 male and 49 female) were selected for the study, who had presented with chest discomfort and history of hypertension. Prevalence of hypertension using (J.N.C.-7) criteria among total 53 male subjects majority of them were pre hypertensive (77.35%), in the age group of 40-59 years. Whereas 15.09%, 5.66% and 1.88% had normotensive, stage-1 hypertension and stage-2 hypertension respectively in age group >50. Ours finding is in concordance to other studies showing similar prevalence of hypertension in coronary artery disease or chest discomfort of other etiology.^{2,3}

Among 49 females 28 (57.14% subjects were pre hypertensive, mostly in the age group 30-49 years age group. A 17 subjects (34.69%) were normotensive, 2 subjects (4.08 %) had stage-1 hypertension, as well as 2 subjects (4.08 %) had stage-2 hypertension, in age group >50. This finding implicates male preponderance for hypertension, whereas female subjects shown higher normotensive and pre hypertensives. Similar to ours finding gender disparities in hypertension (12% vs. 27%) reported by Everett and Zajacova.⁷ Among all the subjects (102) studied the prevalence of IHD in tribal male population (53) subjects only 4 were hypertensive (3 subjects were stage I and 1 had stage II HTN). In 4 hypertensive subjects only 2 (3.77%) were presented with chest discomfort, while among 49 female subjects 4 were hypertensive (2 subjects in both stage I and stage II HTN), only 1 (2.04%) had chest discomfort. So, in both male and female study group the total subjects those who were presented with chest discomfort, the age group was >60.

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 study has addressed specific population of tribal, which is very less studied, future studies should include larger sample size, and specific diagnosis with other socio culture and biological parameters.

CONCLUSION

The prevalence of hypertension among tribal patients of chest discomfort was found to be prehypertensive in 40.19% and hypertensive in 3.92% among male and among female tribal's prehypertensive in 27.45% and hypertensive in 3.92%.

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