



A CROSS SECTIONAL COMPARATIVE STUDY ON THE PATTERN OF BLOOD PRESSURES, PREHYPERTENSION & HYPERTENSION BETWEEN TRIBAL & NON TRIBAL RESIDENTS IN A RURAL BLOCK

Community Medicine

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ABSTRACT

Introduction: Significant differences in hypertension prevalence were noted between rural and urban parts. Isolated studies carried out in these populations like among Lepchas of Sikkim Himalayas, tribes of Andhra Pradesh, Rajasthan, and Orissa have documented the hypertension prevalence in the range of 15 to 42 per cent. In India, there is no composite estimate on prevalence of hypertension among indigenous tribes, but the increasing prevalence of hypertension across the time among tribes has been observed by independent researchers.

Methods: A cross sectional study was conducted in Narayananj block of Mandla Tribal District of MP. Multistage random sampling method was used to select the study subjects. The sample size was drawn by applying calculation method for quantitative data with 25 % prevalence rate came out to be 288 that was rounded to 300, hence 300 tribal & 300 non tribal subjects were chosen for study. A pre- designed questionnaire was filled & clinical examination was done with house to house method. Blood pressure of the study subjects was recorded at the time of interview by using calibrated BP Measuring Instrument. It was classified according to JNC 7 Criteria.

Results: The Magnitude of hypertension was found at 22.0% in tribal subjects & 20.3 % in Non Tribal subjects. The distribution of Blood pressure & Hypertension among Tribals Vs Non Tribals wasn't Significant. It was contrary to the popular belief that Tribals might have significantly lesser magnitude than Non Tribal population.

Conclusion: In this Tribal / Rural Block also Hypertension is emerging as a significant health problem among both the Tribals & Non Tribals equally. The disorder is mostly silent and needs to be addressed at this incipient stage to prevent its long term detrimental effects

KEYWORDS

Tribal, Non Tribal, Hypertension, Rural block

INTRODUCTION

Primary or Essential hypertension accounts for 95% of all cases of hypertension.¹ It has been identified as a leading risk factor for mortality and ranked third by WHO as a cause of disability adjusted life-year (DALY's).² It is one of the major risk factors for cardiovascular mortality, which accounts for 20 – 50% of all deaths in the world. As per world health statistics 2012 report, one in three adults worldwide has raised blood pressure – a condition that causes around half of all deaths from stroke and heart disease.³ One in three adults worldwide has high blood pressure with the proportion going up to one in two for people aged 50 and above.³ Overall Rural plus Urban prevalence for hypertension in India was 29.8%. Significant differences in hypertension prevalence were noted between rural and urban parts 27.6% and 33.8% respectively.³

Isolated studies carried out in these populations like among Lepchas of Sikkim Himalayas, tribes of Andhra Pradesh, Rajasthan, and Orissa have documented the hypertension prevalence in the range of 15 to 42 per cent.⁴

Monika Saini et al, 2015 found 25.8% Gond males were Hypertensive.⁵ These studies suggested that the prevalence of hypertension in these aboriginals is high.

Narayananj Tribal block of Mandla District of MP, India Which is entirely rural is one such region where the tribal population of mostly Gonds & Baigas lives. So we intended to explore the burden of this silent killer disease in these people along with the Non Tribals People living in the same region. Epidemiological studies to assess the magnitude of hypertension & its associated risk factors are urgently needed to determine the baseline against which future trends in risk factor levels can be assessed and preventive strategies planned to promote health among the population. Aims & Objectives were To find out the pattern of Blood Pressures & magnitude of Hypertension cases

among Tribal and Non-tribal population with in Narayananj Block of Mandla District of MP & To compare the magnitude among Tribals and Non-Tribals.

METHODOLOGY

This study plan has got Ethical clearance from the Institutional Ethical Committee of NSCB Medical College & Hospital Jabalpur, Madhya Pradesh, India. Informed & written consent was taken from each participating subjects and in case of any illiterate subjects this consent was read out to him/her.

A cross sectional study was conducted in Narayananj block of Mandla Tribal District of Madhya Pradesh during 1st October 2014 to 30th September 2015. Multistage random sampling method was used to select the study subjects. The sample size was drawn by applying calculation method for quantitative data with 25 % prevalence rate came out to be 288 that was rounded to 300, hence 300 tribal & 300 non tribal subjects were chosen for study.

A pre- designed questionnaire was filled & clinical examination was done with house to house method Having chosen the block on first stage, 20 villages were selected randomly and lastly from every village 15 tribal subjects & 15 non tribal subjects were chosen randomly by house to house visit method where pre designed questionnaire were filled containing information about socio demographic profile and addiction habits of the subjects along with anthropometric measurements & clinical examination.

Blood pressure of the study subjects was recorded at the time of interview by using calibrated BP Measuring Instrument. It was classified according to JNC 7 Criteria.⁶ Measurement was taken only when the persons were seated quietly for at least 5 min in a chair and who avoided caffeine, exercise and smoking at least 30 min prior to measurement. Blood pressure measurements were made on the

subject's left arm using a cuff of appropriate size at the level of the heart. Altogether, two measurements were made and the average was recorded. In case where the two readings differed by over 10 mm of Hg, a third reading was obtained, and the three measurements were averaged.

Inclusion criteria

All the tribal subjects above 18 years of age who are permanent resident.

Exclusion criteria

1. Pregnant females, lactating others, post-partum females.
2. Adults not willing to be the part of study/those who denied.
3. Patients of hypertension on medication.

Operational definition of hypertension

The operational definition of hypertension was taken from The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure.⁵

Statistical analysis-Analysis was done using SPSS (Version 20, IBM, USA).

RESULTS

The Magnitude of hypertension was found at 22.0% in tribal subjects & 20.3 % in Non Tribal subjects . The distribution of blood pressure levels between Tribals and Non Tribals were not Significant.

The distribution among Tribals Vs Non Tribals was not Significant as P value is >0.05 . $\chi^2 = 2.88$, $df=3$, $P= 0.08$; Mean systolic and diastolic BP (SBP and DBP) among the study subjects was 123.07 ± 14.09 and 77.43 ± 10.33 mmHg, respectively. Mean SBP and DBP were significantly higher with increase in age and .Mean SBP among Tribal was 123.0 ± 16.03 & Mean DBP was 79.92 ± 9.86 . **In the categories of Prehypertension & Stage II hypertension tribal showed more magnitude than Non Tribal Counterparts.**

In The distribution of Stage I Hypertension among non tribals there were slightly more cases of Hypertension as compare to Tribals, the probable cause may be due to high prevalence of Overweight in Non Tribals among others.(Table 1)

DISCUSSION

NNMB Tribal Survey - 2008-09 conducted by National Institute of Nutrition , ICMR , Hyderabad also found the overall prevalence of Hypertension among Tribal adult men & women as 24% (men 25%, women 23%), which are near to our findings.⁷

Kokiwar Prashant et.al (2012) also found Prevalence of hypertension was 19.04% in rural central India.⁸

S. A. Rizwan et al;(2014) in a study 'Prevalence of Hypertension in Indian Tribes: A Systematic Review and Meta-Analysis of Observational Studies' found The pooled estimate of hypertension prevalence was 16.1% .⁹

NNMB in its survey of 2006³ found the prevalence of Hypertension in Rural Madhya Pradesh was 16.8% .

Basavanagowdappa, et al.: Hypertension among JenuKuruba Tribe (2013) also found overall prevalence of hypertension was 21.7% .¹⁰

Study by Sachdev et al. (2011) among tribal population of Rajasthan showed 16% to 30% prevalence of hypertension among different tribes.¹¹

Sanjay Kumar et al; (2015) found The overall prevalence of hypertension was found to be 20.38%. Stage I and stage II hypertensive were 17.59% and 2.78%, respectively.¹² NNMB in its repeat rural Survey 2011-2012 conducted in 10 states found the overall Prevalence of Hypertension to be 22.2%.¹³

CONCLUSION

The Magnitude of hypertension was found at 22.0% in Tribal subjects & 20.3 % in Non Tribal subjects. **In the categories of Prehypertension & Stage II hypertension tribal showed more magnitude than Non Tribal Counterparts.** The distribution of blood pressure levels between Tribals and Non Tribals were not Significant.

It is already recognized widely in a study by Nayak A et al (2003) that both tribes & Non Tribal living in the Tribal / Rural Blocks of the country face newer emerging health problems, in addition to the conventional diseases.¹⁴ Tribals are also facing the brunt of emerging Non Communicable diseases as the general Non tribal people . In this Tribal / Rural Block also Hypertension is emerging as a significant health problem among the both the Tribals & Non Tribals. The disorder is mostly silent and needs to be addressed at this incipient stage to prevent its long term effects. A major limitation of the study was that the blood pressure measurements were taken during a single visit & repeated measurements on different occasions could not be taken

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Ethical approval: The study was approved by the Institutional Ethics Committee

Table no. 1: Distribution of blood pressure levels among the study subjects

Blood Pressure Categories	Tribal (n=300)	Non Tribal (n=300)	Total (n=600)
Normal	136 (45.3%)	155 (51.66%)	291 (48.5%)
Pre-Hypertension	98 (32.7%)	84 (28%)	182 (30.33%)
Stage I hypertension	45 (15.0%)	53 (17.66%)	98 (16.33%)
Stage II hypertension	21 (7.0%)	8 (2.66%)	29 (4.83%)
TOTAL	300 (100%)	300 (100%)	600 (100%)

SBP= Systolic Blood Pressure in mm of Hg, DBP= Diastolic Blood pressure in mm of Hg) $\chi^2 = 2.88$, $df=3$, $P= 0.08$ }

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