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Original Research Article

Prevalence of hypertension amongst spouses in urban area of Nagpur city, Maharashtra, India

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ABSTRACT

Background: Students of human biology share an interest in studies of family clusters of heart disease and its antecedents. The recent inclusion of husband and wife pairs (spouse pairs) has added a new dimension to earlier studies of first degree relatives. Blood pressure is influenced by environmental factors operating within genetic limits. Since married couples share a similar environment, the study can identify environmental factors. This study was done to find out prevalence and control of hypertension among spouses in urban area of Nagpur.
Methods: This was a community based cross sectional study conducted in urban area of Nagpur city. 260 couples in whom both husband and wife were of age 30 or more were included. Blood pressure was measured and classified as per WHO guidelines.
Results: Prevalence of hypertension was found to be 51.9% among husbands and 40.8% among wives. 57.8% husbands and 50.9% wives were unaware of their hypertensive status. Among those who were aware, 35.1% husbands and 15.4% wives had their blood pressure.
Conclusions: The observation suggests need for targeting married couples as a unit of intervention for hypertension awareness and control. This study also emphasizes the need to increase the knowledge of current guidelines for detection and treatment of hypertension among physicians.

Keywords: Prevalence, Hypertension, Spouses, Urban area

INTRODUCTION

Clinicians, epidemiologists and other students of human biology share an interest in studies of family clusters of heart disease and its antecedents. The recent inclusion of husband and wife pairs (spouse pairs) has added a new dimension to earlier studies of first degree relatives.[1] Blood pressure is influenced by environmental factors operating within genetic limits. The study of cohabiting couples can identify environmental factors.[2]

Hypertension is one of the leading cardiovascular disorder and an important risk factor for coronary artery disease, cerebrovascular diseases and cardiac failure in elderly subjects. Early detection and treatment of hypertension can significantly reduce cardiovascular and cerebrovascular related mortality along with improvement in quality of life.[3] Accordingly, we performed a cross sectional survey to find out prevalence and control of hypertension among spouses.

METHODS

This cross sectional, community based study was conducted from May 2004 to April 2005, in Jaripatka, which is an urban area under Municipal Corporation of Nagpur, Maharashtra. This area was selected for the feasibility. The ethics committee approved the study. The

findings are a part of 'concordance' study which was done to find out factors associated with concordance of blood pressure among married couples. Based on the proportion of concordance in pilot study, the sample size was estimated to be 260 couples. Study subjects were married couples in whom both husband and wife were of 30 years or more. Couples in whom the wife was pregnant and those in whom either or both spouses had secondary hypertension were excluded. A house to house survey was carried out. It was decided to start from the first house and covered all houses till the required sample was reached. It was ensured that there was no vigorous physical activity was done till 30 min prior to blood pressure measurement. Blood pressure was measured using mercury sphygmomanometer, in the right arm, with subject in sitting position. Two readings were taken over a period of three minutes; both were recorded and mean value considered for analysis.[4]

The hypertension status of the subjects was assessed on the criteria formulated by the WHO- International society of hypertension (WHO-ISH).[5] And the US sixth joint national committee (JNC VI) report.[6] On the prevention, detection, evaluation and treatment of high blood pressure: systolic BP(3) 140mm of Hg or diastolic BP(3) 90 mmHg or the use of antihypertensive medication. Recently published US guidelines (INC VII) maintain the same definition of hypertension.[7] This definition excludes hypertensive's whose blood pressure has reduced to a non-hypertensive range solely by the use of non pharmacologic measures. A subject was said to be aware' of hypertensive status if he/she reported a prior diagnosis of hypertension (or elevated blood pressure) made by a health care provider. Treatment for hypertension was defined as current use of a prescription medication or lowering the elevated blood pressure. Control of hypertension was defined as anti-hypertensive treatment associated with systolic BP and diastolic BP less than 140 mmHg and 90 mmHg respectively.[7] Percentage, mean and standard deviation were calculated wherever applicable and required.

RESULTS

Two hundred and eighty seven families were visited in the survey, of which 25 were not willing to participate (afraid of getting positive diagnosis), 14 were not eligible and 10 were not available even after frequent visits. 260 couples were obtained in 238 families. All the couples were of Hindu religion. 75% husbands were businessmen, mostly shop owners; wives were housewives. The maximum and minimum age among husbands was 78 years and 31 years respectively and that among wives were 70 years and 30 years respectively. 146 (56.2%) husbands and 95 (36.6%) wives were educated at least upto 12th standard. Maximum (80.8%) couples belonged to higher socioeconomic strata (Table 1).

Table 1: Socio-demographic characteristics of study population.

Socio-demographic characteristics	Husband (n=260) (%)	Wives (n=260) (%)
Age group (in years)		
30-40	48 (18.5)	92 (35.4)
40-50	89 (34.2)	100 (38.5)
50-60	75 (28.9)	52 (20)
60-70	37 (14.2)	14 (5.4)
>70	11 (4.2)	2 (0.7)
Educational status		
Illiterate	2 (0.8%)	11 (4.2)
Upto middle	40 (15.4)	68 (26.1)
Upto hsc	118 (45.3)	122 (46.9)
Graduate and above	100 (38.5)	59 (22.8)
Socioeconomic status		
Upper	16 (6.2)	16 (6.2)
Upper middle	194 (74.6)	194 (74.6)
Lower middle	35 (13.4)	35 (13.4)
Upper lower	15 (5.8)	15 (5.8)

Table 2: Prevalence of hypertension among husbands and wives according to age.

	Husbands		Wives	
Age (in yrs)	**No.**	**Hypertension (%)**	**No.**	**Hypertension (%)**
30-39	48	18 (37.5)	92	13 (14.1)
40-49	89	40 (44.9)	100	43 (43.0)
50-59	75	43 (57.3)	52	36 (69.0)
60-69	37	26 (70.2)	14	12 (85.7)
>70	11	08 (72.7)	2	02 (100)
Total	260	135 (51.9)	260	106 (40.7)

$X^2 = 6.4$, df= 1, $p<0.05$.

Table 3: Awareness and control of hypertension among husbands and wives.

Hypertension	Husbands (%)	Wives (%)
Total hypertensive	135 (51.9)	106 (40.8)
Aware*	57 (42.2)	52 (49.1)
Controlled**	20 (35.1)	8 (15.4)

Figures in parenthesis indicate percentage; *Percentage out of total hypertensives; **Percentage out of those aware.

It was observed from Table 2 that the overall prevalence of hypertension was found to be 46.4%. The prevalence was found to be 51.9% in husbands and 40.7% in wives and this difference was found to be statistically significant. This appears to be the general sex difference rather than one between husbands and wives. With advancing age, proportion of subjects having hypertension also increased. Upto 50 years of age, proportion of wives with hypertension was less as compared to husbands. Subsequently the proportion of wives with hypertension increased.

It was seen from Table 3 that the awareness of hypertensive status was strikingly very less. More than half subjects, among both husbands and wives were unaware of their hypertension among those who were aware; few of them had their blood pressure under control.

Table 4: Distribution of new cases of hypertension according to classification of hypertension.

Classification of hypertension	Husband (n=78) (%)	Wives (n=54) (%)
Mild hypertension	66 (84.6)	52 (96.3)
Subgroup: borderline	24 (30.6)	28 (51.9)
Moderate and severe hypertension	12 (15.4)	3 (3.7)
Isolated systolic HT	8 (10.3)	10 (18.5)
Subgroup: borderline	6 (7.7)	9 (16.7)

Most of the subjects who were new cases had mild hypertension (Table 4).

DISCUSSION

As expected, husbands were older as compared to wives. The difference between prevalence of hypertension among males and females appears to be the general sex difference rather than one between husbands and wives.[8,9] Increase in prevalence of hypertension among females with advancing age specially after 50 years suggests the rise of blood pressure in postmenopausal stage of life.[10] Gilberts ECAM et al found prevalence of hypertension greater in men than in women until the fifth decade, after which the pattern was reversed.[11] Similar pattern was observed in the present study. Awareness of hypertensive status was less. Similar findings have been reported by Zachariah et al majority among them were of mild hypertension.[12] This suggests that most of the cases of mild hypertension remain undiagnosed, probably due to lack of awareness among health care providers regarding current guidelines for diagnosis and management of hypertension. A previous study has suggested that risk factor manipulation in men with risk factor manipulation in men with high risk of coronary heart disease can produce a significant benefit in risk factor reduction in their wives- a so called spin of effect. This suggests that intervention to change health behaviour could be targeted at both the patient and their spouse in order to improve risk factor in both.

CONCLUSION

The high prevalence of hypertension and low levels of awareness and control indicate hypertension as an important public health problem in the area surveyed. Thus, there is a need for hypertension awareness and control programs in which married couples should be the unit of intervention. Such programs should be coupled with continuing medical education programs for health care providers to promote awareness of current guidelines for the diagnosis and treatment of hypertension.

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REFERENCES

1. Sackett DL, Anderson GD, Milner R, Feinleib M, Kannel WB. Concordance for coronary risk factors among spouses. Circulation. 1975;52(4):589-95.
2. Hippisley-Cox J, Coupland C, Pringle M, Crown N, Hammersley V. Married couples' risk of same disease: cross sectional study: BMJ. 2002;325(7365):636.
3. Agarwal H, Baweja SR, Haldiya K, Mathur A. Prevalence of Hypertension in Elderly Population of Desert Region of Rajasthan. J Indian Acad Geriatrics. 2005: 14-17.
4. WHO TRS: Hypertension control, 1996: 862.
5. World Health Organisation- International society of hypertension. Guidelines for management of hypertension. Guidelines subcommittee. Hypertens. 1999;17:151-83.
6. The sixth report of the joint National committee on prevention, detection, evaluation and treatment of high blood pressure. Arch Intern Med. 1997;157:2413-22.
7. Chobanian AV, Bakris GL, Black HR, Cushman WC, Green LA, Izzo JL jr, et al. National Heart, lung and blood institute joint national committee on prevention, Detection, evaluation and treatment of hypertension. National High blood pressure education and coordinating committee. The seventh Report of the joint national committee on prevention, Detection, evaluation and treatment of high blood pressure: the JNC 7 report JAMA. 2003;289:2560-72.
8. Everett B, Zajacova A. Gender Differences in Hypertension and Hypertension Awareness Among Young Adults. Biodemography Social Biol. 2015;61(1):1-17.
9. Choi HM, Kim HC, Kang DR. Sex differences in hypertension prevalence and control: Analysis of the 2010-2014 Korea National Health and Nutrition Examination Survey. Spracklen CN, ed. PLoS ONE. 2017;12(5):e0178334.
10. Lima R, Wofford M, Reckelhoff JF. Hypertension in Postmenopausal Women. Current Hypertension Reports. 2012;14(3):254-60.
11. Ericus CA, Gilberts M, Marinus JC, Arnold WJ, Diederick E. Hypertension and Determinants of Blood Pressure with Special Reference to Socioeconomic Status in a Rural South Indian Community. J Epidemiol Community Health. 1994;48(3):258-61.

12. Zachariah MG, Thankappan KR, Alex Sc, Sharma PS, Vasan RS. Prevalence, correlates, awareness, treatment and control of hypertension in a middle aged urban population in Kerala. Indian Heart J. 2003;55:245-51.

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