STUDY OF HYPERTENSION AND ITS RISK FACTORS AMONG WOMEN OF REPRODUCTIVE AGE GROUP

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ABSTRACT

Objectives: 1. To find out the proportion of hypertension among women of reproductive age group. 2. To find the association between various socio-demographic factors and hypertension.

Material and Methods: A cross-sectional study conducted among ever married women of reproductive age group who have attended the urban health training centre during the study period of six month. Data was collected by direct interview through prestructured questionnaire and examination for measuring blood pressure and anthropometry.

Results: Among the 244 women studied 8.6% of the women were hypertensive and 25% of the women were pre-hypertensive. Overweight and obesity (p = 0.02) and family history (p =0.001) were having significant association with presence of hypertension. There was no statistically significant association between type of work and type of diet consumed.

Conclusion: Hypertension is a growing problem among the women of reproductive age group. Being overweight or obese and having a family history are the major risk factors for the hypertension among women.

Key words: Hypertension, women, reproductive age.

INTRODUCTION

Hypertension is defined as a state of chronically elevated arterial blood pressure, as compared to what is normally expected. Hypertension is often referred to as a silent killer. During most of its course, it produces hardly any signs/symptoms by itself; however, it damages the end organs substantially.[1] It is the commonest cardiovascular disorder, posing a major public health challenge to population in socio-economic and epidemiological transition.[2] In developing countries, high blood pressure is one of the risk factors for cardiovascular diseases, and the estimated 7.1 million deaths especially among middle, and old-age adults is due to high BP.[3] India in a process of rapid economic development and modernization with changing lifestyle factors has an increasing trend of hypertension, especially among the urban population.[4]

Raichur is one of the underdeveloped districts of Karnataka having poor performance in many of the health related indicators. Many of studies previously have clearly highlighted about the higher burden of the communicable diseases. But as the prevalence of non-communicable diseases including hypertension has increased everywhere in the recent period it was essential to have a data regarding this region about hypertension and more so of females as they are often neglected. Hence a study was conducted with the objective of assessing the proportion of women having hypertension among women of reproductive age group and also to know the factors influencing the occurrence of hypertension.

MATERIAL & METHODS:

A cross sectional study was carried out at the Urban Health Training Centre (UHTC), Amtalab, Raichur, which is part of the department of Community medicine, Raichur Institute of medical sciences. Study was conducted among the ever married women in the reproductive age group (15-45 years) who have attended the UHTC during the study period of 6 months (January 2012 to June 2012). Women who were pregnant during study and those women who did not give consent for the study were excluded from the study. Oral consent for participation in the study was obtained from all the participants after informing about the study and its purpose. Data was collected about socio-demographic profile and some risk factors for hypertension through prestructured questionnaire by interview method.

The blood pressure was recorded by sphygmomanometer and taken in sitting posture. The first appearance of sound [phase I] was used to define systolic blood pressure and the disappearance of sound [phase V] was used to define diastolic blood pressure. Reading was repeated after 5 minutes. If the first two readings differ by more than 5 mm of Hg, additional readings were obtained and averaged. Classification of hypertension was done as per the JNC-VII guidelines. Anthropometric measurement like weight and height were also recorded. BMI was calculated using height and weight and it was used for classifying women as normal weight, overweight and obese. Data was analyzed using SPSS 16 software. Data is expressed as proportion or percentage, association between various factors and hypertension was assessed using chi-square test and p value of <0.05 was considered as significant.

RESULTS

A total of 244 women were studied during the period. Among them 65.6% were belonging to Hindu religion, 33.2% were Muslims and rest 1.2% were belonging to other religion. Majority of the women (62.7%) were of the age-group 26-35 years, where as 33.2% were of the age group 15-25 years and 4.1% were belonging to the age group of 36-45 year. Mean age of the study group was 27.85 years. (Refer table 1)

Among the studied women 66.8% were illiterates, 5.3% were studied up to primary school, 12.3% middle school, 11.9% high school and only 3.7% were studied PUC or above. Majority (65.6%) of the women were belonging to the nuclear family and 34.4% were belonging to the joint family. 66.4% of the women were house wives and 33.6% were working women. Among the working women 18% of the women were involved in the work which require moderate level of physical activity (tailor, cook, house maid, shop keeper etc) and 15.6% of the women were involved in the work which require heavy work (manual labourer). Majority (75.8%) of the women were belonging to the upper lower class (IV) of socioeconomic status according to modified Kuppuswamy classification (modified for the year 2012).[10] 20.9% were belonging to lower middle class (III), 2.9% belonging to the upper middle class, 0.4% to lower (V) class and none of them were belonging to upper class(I). (Refer table 1)

As shown in the table 2, 8.6% of the studied women were hypertensive and 25% of the women were having pre-hypertension. 66.4% of the women were having normal blood pressure. Occurrence of hypertension increased with the age even though it was not statistically significant. There was no association between the hypertension and type of family, religion, number of living children, literacy and socioeconomic status. (Refer table no.3)

Occurrence of hypertension was more among moderate workers compared to heavy workers and also more among those consuming junk foods but the association was not significant statistically. There was no association between type of diet and hypertension. Presence of overweight and obesity was significantly associated with the occurrence of hypertension. Hypertension occurrence was

significantly higher among those having family history of hypertension. (Refer table no.4)

DISCUSSION

Various studies have shown that prevalence of hypertension among women as from 20% to 40%. In a study conducted by Yadav et al[5] prevalence of hypertension among women was 32.2%, whereas in a study conducted by Bharati DR et al[6] it was found to be 28%. In a study conducted by Kannan et al[7] it was found to be 27.4%. But in the present study proportion of women having hypertension was found to be 8.4%. The reason for low prevalence was age group considered for the study, as all other studies were conducted among the women above 30 years of age group and included the elderly women also in whom prevalence was more. As present study was restricted to the women of reproductive age group only hence prevalence was low in the present study. Our study highlights the fact that even though prevalence of hypertension is relatively low among reproductive age group but the prevalence is not negligible.

In the present study there was no difference in the prevalence of hypertension among women with respect to the literacy as in both the literates and illiterates it was 8.6%. But in a study conducted by Sidhu et al[8] hypertension was significantly more among literates compared to illiterates. As the literacy influences the type of occupation usually literates involved in more of sedentary work compared to illiterate that may be the cause in the study of sidhu et al but in the present study occupation pattern was near similar in both literate and illiterates hence there was no difference of hypertension with respect to the literacy.

In the present study there was no significant difference in the prevalence of hypertension with respect to the parity status and the finding was similar to the study done by PSS Rao et al in Vellore.[9] In the present study there was no significant difference in the prevalence of hypertension with respect to the type of diet (vegetarian or non-vegetarian) and findings were similar to the study done by Bharati DR[6] *et al* and Madhukumar S *et al*[10].

Our study observed that the prevalence of hypertension increased with age. More prevalence was observed among higher age group, findings were similar to the study conducted by Thawornchaisit P et al[11] in which hypertension incidence was associated with age and it increased with age.

In the present study hypertension was more prevalent among those who eat junk food regularly compared to those who ate occasionally or never eat. But the findings were statistically not significant. The relation may be more of indirect one as the junk food eating will lead to overweight or obesity and which in turn is a risk factor for hypertension.

In the present study as it was seen that being overweight or obese is significantly associated with the hypertension findings were similar to the study conducted by D J Raina *et al*[12] and Madhukumar S et al[10] which showed that there is highly significant association between BMI and hypertension.

In the present study it was seen that having a family history of hypertension significantly increases the risk of hypertension and the findings were similar to the study conducted by Janet WH *et al*[13] in which among those with a family history there were 2.54 times more risk of development of hypertension.

CONCLUSION

Hypertension is a disease not just restricted to old age it is a growing problem even among the women of reproductive age group. Being overweight / obese and having a family history are the major risk factors for the hypertension among women. Increasing age, type of work, eating junk food also influence the occurrence of hypertension but religion, literacy status, parity status are not a risk factor for hypertension among women of reproductive age group.

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Table 1: Table showing the Socio-demographic profile of the study Women

Socio –demographic characters of women		Frequency	Percentage
Religion	Hindu	160	65.6
	Muslim	81	33.2
	Others	3	1.2
Age group	15-25	81	33.2
	26-35	153	62.7
	36-45	10	4.1

Education	Illiterate	163	66.8
	Primary school	13	5.3
	Middle school	30	12.3
	High school	29	11.9
	PUC and above	9	3.7
Type of family	Nuclear	160	65.6
	Joint	84	34.4
Occupation	House wife	162	66.4
	Working women with moderate physical work	44	18.0
	Working women with heavy physical work	38	15.6
Socioeconomic status (Modified Kuppuswamy 2012)	Upper middle(II)	7	2.9
	Lower middle (III)	51	20.9
	Upper lower (IV)	185	75.8
	Lower (V)	1	0.4

Table 2: Classification of women based on blood pressure

Blood pressure	Frequency	Percent
Normal (<120/80 mm Hg)	162	66.4%
Pre-hypertension (120-139/80-89)	61	25.0%
Hypertension ($\geq$140/90)	21	8.6%
Total	244	100%

Table 3: Association between socio-demographic factors and hypertension

Socio demographic factors		Non-hypertensive	Hypertension	P value
Age group	15-25	76 (93.8%)	5 (6.2%)	
	26-35	139 (90.8%)	14 (9.2%)	0.31
	36-45	8 (80.0%)	2 (20.0%)	
Type of family	Nuclear	145 (90.6%)	15 (9.4%)	
	Joint	78 (92.9%)	6 (7.1%)	0.55
Religion	Hindu	145 (90.6%)	15 (9.4%)	
	Muslim	76 (93.8%)	5 (6.2%)	0.39
Literacy	Illiterate	149 (91.4%)	14 (8.6%)	
	Literate	74 (91.4%)	7 (8.6%)	1.00
No. of living children	1-2	103 (91.9%)	9 (8.1%)	
	3-4	108 (90%)	12 (10%)	0.47
	5-6	12 (100%)	0(0%)	
Socioeconomic status	Upper-middle (II)	7(100%)	0(0%)	0.68
	Lower middle (III)	46 (90.2%)	5 (9.8%)	
	Upper lower (IV)	169 (91.4%)	16 (8.6%)	
	Lower (V)	1 (100%)	0(0%)	

Table 4: Table showing the association between other factors and hypertension

Other factors		Normal /pre-hypertension	Hypertension	P value
Type of diet	Vegetarian	16 (88.9%)	2 (11.1%)	0.659*
	Mixed diet	207 (91.6%)	19 (8.4%)	
Type of work	Moderate worker	187 (90.8%)	19 (9.2%)	0.54*
	Heavy worker	36 (94.7%)	2 (5.3%)	
Consuming Junk foods	No/ occasionally	183 (92.9%)	14 (7.1%)	0.14
	Yes regularly	40 (85.1%)	7 (14.9%)	

Body mass index	Normal	179 (93.7%)	12 (6.3%)	0.02*
	Overweight/obese	44(83.1%)	9 (16.9%)	
Family history	Yes	12 (66.6%)	6 (33.3%)	0.001
	No	211(93.4%)	15 (6.6%)	

* Fisher exact test   S- significant   HS – Highly significant