Original Research Article

Study of Epidemiological Factors Affecting Patients of Hypertension Attending Urban Health Training Centre of Community Medicine of Tertiary Care Hospital, Maharashtra

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Abstract

Introduction -Hypertension is a chronic condition causing coronary heart disease, stroke and other vascular complications. **Aim and objective**- To study epidemiological factors affecting patients of hypertension attending urban health training centre of community medicine department of tertiary care hospital, Maharashtra. **Material and Methods**- The study was a hospital based observational descriptive study carried out in urban health training centre of community medicine department of tertiary care hospital from April 2016 to September 2016 including all known cases of hypertension which was around 450. **Result**- Maximum cases were from age group 40-59 years (53.71 %) and 40.77 % were males and 59.23 % were females.Whereas 43 % and 14 % of study subjects were having BMI of 25-29.9 and ≥ 30 respectively, 35 % were having family history of hypertension, 72% were having salt intake of > 5 gram, 67% were having mixed diet, 55 % men were having waist-hip ratio > 0.9 and 67% women were having waist-hip ratio >0.8, 45 % of total male subjects and 08 % female subjects were having habit of alcohol intake. Whereas 42 % of total male subjects and 28 % of female subjects were having habit of tobacco intake. **Conclusion**- For the control of hypertension decreased salt intake, physical activity, cessation of habits such as alcohol and tobacco intake and early detection and treatment are need of the hour.

Keywords *- Epidemiological factors, Hypertension, Tertiary care hospital.*

Introduction

Hypertension is a chronic condition of concern due to its role in the causation of coronary heart disease, stroke and other vascular complications. It is the commonest cardiovascular disorder, posing a major public health challenge to population in socio-economic and epidemiological transition. It is one of the major risk factors for cardiovascular mortality, which accounts for 20-50 percent of all deaths[1]. The global prevalence of hypertension is estimated to be 1.13 billion in 2015. The overall prevalence of hypertension in adults is around 30-40 per cent, with a global age standardized prevalence of 24 and 20 per cent in men and women respectively. It is estimated that the number of people with hypertension will increase by 15-20 per cent by year 2025 [2]. Elevated blood pressure is a leading cause of premature death in 2015, accounting to almost 10 million deaths and over 200 million DALYs. Despite advances in diagnosis and treatment over the past 30 years, the DALYs have increased by 40 per cent since 1990. Systolic blood pressure >140 mmHg accounts for most of the mortality and disability burden. The largest number of systolic blood pressure related deaths per year are due to IHD (4.9 million), haemorrhagic stroke

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(2 million)and ischaemic stroke (1.5 million) [2].

Population-based epidemiological studies have reported that prevalence of hypertension has increased by two to five times in the urban and rural regions of India over the past 50 years[3]. Prospective studies from all parts of the world have reported that hypertension is an important cause of mortality and that higher the blood pressure (BP) greater the mortality[4,5]. Prospective studies in India have also reported a significant correlation of increasing BP with greater CVD mortality[6,7].

Although the urban health training centre (UHTC) under community medicine department of tertiary care hospital caters to the urban slum population, this hospital based observational descriptive study was undertaken in all known cases of hypertension coming to UHTC to study the epidemiological factors associated with hypertension in them.

Aim and Objective

To study epidemiological factors affecting patients of hypertension attending urban health training centre of community medicine department of tertiary care hospital, Maharashtra.

Material and Methods

The study was a hospital based observational descriptive study carried out in urban health training centre of community medicine department of tertiary care hospital. It is a duration based study carried out from April 2016 to September 2016 i.e. for total 6 months. All the known cases of hypertension attending the UHTC during the study period willing to participate in the study procedure were included in the study which was around 450. While patients unwilling to participate in the study procedure and pregnant women were excluded from the study.

The hypertension was defined according to Seventh report of Joint National Committee on prevention, detection, evaluation and treatment of high blood pressure. Accordingly the Hypertension is defined as systolic blood pressure (SBP) of 140 mm Hg or more, diastolic blood pressure (DBP) of 90 mm Hg or more or taking antihypertensive medication[8].

Data collection- After explaining the purpose of study and obtaining verbal informed consent from the patients, all patients were interviewed with the help of preformed structured questionnaire comprising of questions related to epidemiological and clinical details of the subject, age, sex, address, height, salt consumption, physical activity, addictions and history of hypertension amongst their parents and siblings. A clinical examination was conducted on all the participants by trained department faculty/LMO/MO/ interns of the centre of department of Community Medicine. Blood pressure measurements were taken using mercury Sphygmomanometer in sitting posture. The individuals were labeled as known cases of hypertension only when they showed the reports and evidence of antihypertensive medication or previous medical examination reports. Records of all patients were studied and data regarding their clinicosocial profile was analyzed. Data was entered in Microsoft excel sheet and it was analyzed with Epi info software. Statistical analysis was done by using simple proportions and percentages. Throughout the study anonymity of all patients was maintained and privacy as well as confidentiality of the data was assured.

Results

The present hospital based observational descriptive study was carried out among 450 known cases of hypertension who attended Urban Health Training Center of the Department of Community Medicine during the study period.

Table No. 1: Distribution of study subjects according to age and sex

Age group in years	Males (%)	Females (%)	Total (%)
20-29	18 (45%)	22 (55%)	40 (09.01%)
30-39	42 (41.58%)	59 (58.41%)	101 (22.23%)
40-49	50(39.68%)	76 (60.31%)	126 (28.16%)
50-59	45 (39.13%)	70 (60.86%)	115 (25.55%)
≥60	29 (42.64%)	39 (57.35%)	68 (15.05%)
Total	184 (40.77%)	266 (59.23%)	450 (100%)

The distribution of total 450 study subjects according to age and sex showed that 40.77 % were males and 59.23 % were females. The maximum numbers of individuals were from age group 40-59 years (53.71 %) followed by age group 30-39 years (22.23 %) and the minimum numbers of individuals from age group 20-29 years (09.01 %).

Table No. 2: Distribution of study subjects according to clinicosocial factors-

Marital status	Number (n=450)	Percentage
Married	140	31
Unmarried	180	40
Widowed	99	22
Divorcee	31	07
B.M.I		
< 18.5	50	11
18.5-24.9	144	32
25-29.9	193	43
≥ 30	63	14
Family history of hypertension		
Yes	158	35
No	292	65
Salt intake per day		
≤ 5 gram	126	28
> 5 gram	324	72
Physical activity		
Sedentary	90	19.90
Moderate	324	72.08
Heavy	36	08.02
Dietary pattern		
Mixed	302	67
Vegetarian	148	33

Distribution of study subjects according to marital status shows that 31 % were married, 40 % were unmarried, 22 % were widowed and 07 % were divorcee.

Distribution of study subjects according to Body Mass Index shows that 11% study subjects were having their BMI below 18.5 while 32 % study subjects were having their BMI in normal range [18.5-24.9], 43 % and 14 % of study subjects were having BMI of 25-29.9 and ≥ 30 respectively.

Distribution of study subjects according to family history of hypertension shows that amongst 450 study subjects, 35 % were having family history of hypertension and 65 % were not having family history of hypertension.

Distribution of study subjects according to their salt intake shows that 28 % and 72% study subjects were having salt intake of ≤ 5 gram and > 5 gram respectively.

Out of total 450 study subjects, 19.90% were having sedentary activity, 72.08 % were having moderate activity and 8.02 % were having heavy activity.

Distribution of study subjects according to dietary pattern shows that 67% of total study subjects were having mixed diet and 33 % of total study subjects were having vegetarian diet.

Table No. 3: Distribution of study subjects according to other high risk factors-

Waist hip ratio	Male	Female
Normal	82[45%]	87[33%]
Abnormal	102[55%]	179[67%]
Alcohol intake		
Yes	82[45%]	22[08%]
No	102[55%]	244[92%]
Tobacco intake in any form		
Yes	78[42%]	75[28%]
No	106[58%]	191[72%]

Table no. 3 shows distribution of study subjects according to other high risk factors.Waist hip ratio was calculated as waist circumference divided by hip circumference. The cut-off used for the waist-hip ratio (WHR) for males was 0.9 as normal and for females it was 0.8 as normal.

Out of 184 males in study, 55 % men were having waist-hip ratio > 0.9 and 45 % men were having waist-hip ratio ≤ 0.9.Amongst 266 females in study, 67 % women were having waist-hip ratio > 0.8 and 33 % women were having waist-hip ratio ≤ 0.8.

Considering alcohol intake, 45 % of total male subjects were having habit of alcohol intake, while 08 % female subjects were having habit of alcohol intake. Whereas 42 % of total male subjects were having habit of tobacco intake in any form as compared to 28 % of female subjects who were having habit of tobacco intake in any form.

Discussion

This study was a hospital based observational descriptive study carried out in urban health training centre of community medicine department of tertiary care hospital from April 2016 to September 2016 i.e. for total 6 months considering all the known cases of hypertension attending the UHTC during the study period which was around 450.

The distribution of total 450 study subjects according to age and sex showed that 40.77 % were males and 59.23 % were females. The maximum numbers of individuals were from age group 40-59 years (53.71 %) followed by age group 30-39 years (22.23 %). In a study done Dr. Siraj Ahmad, out of 388 hypertensive patients,57.7% were males and 42.3% were females. Majority of patients 42.8% were in the age group of 50 – 59 years[9].

While 31 % in our study were married, 40 % were unmarried, 22 % were widowed and 07 % were divorcee.In contrast to our studies, Midha T et al [11] found no significant association between marital status and hypertension (p = 0.213). Distribution of study subjects according to Body Mass Index shows that 11% study subjects were having their BMI below 18.5 while 32 % study subjects were having their BMI in normal range [18.5-24.9], 43 % and 14 % of study subjects were

having BMI of 25-29.9 and ≥ 30 respectively. The study findings were parallel to other studies done by Gore Chaitali et al and Om Prakash Das et al [12,13]. Family history of hypertension was present in 23.3% participants in urban slums of Tirupathi in a study done by SS Reddy et al [14] and 26.8% in urban slums of Bangalore in a study done by Gore Chaitali et al [12] whereas in the present study it was found in 35 % participants. Higher salt intake was associated with hypertension in a study done by Om Prakash et al in urban slums of Belgaum [13], whereas in our study 72% study subjects were having salt intake of > 5 gram. In our study, 72.08 % of the study subjects were having moderate physical activity and 67% of total study subjects were having mixed diet. The study findings are in contrast with the study done by Mehmood SE et al [10]in which prevalence of hypertension did not differ significantly between non vegetarians and vegetarians.

Out of 184 males in our study, 55 % men were having waist-hip ratio > 0.9 while 67 % women were having waist-hip ratio > 0.8. While 45 % of total male subjects were having habit of alcohol intake, while 08 % female subjects were having habit of alcohol intake. The study findings were similar to the study done by Mahmood SE et al [10].

Limitations of the study-

1. As it was a hospital based study, the study findings can not be generalised to the whole population.

2. Controversial findings found in the study need further in-depth epidemiological studies.

Conclusion

Hypertension is a silent killer which is an iceberg phenomenon. Large numbers of hypertensive are in increasing age group with female preponderance and having family history of hypertension which shows a genetic predisposition to this disease. Other predisposing factors noted are obesity, increased salt intake, alcohol intake, tobacco intake in any form. Therefore, for the control of hypertension, health education awareness programmes on healthy lifestyle namely control and prevention of obesity, decreased salt intake, physical activity, cessation of habits such as alcohol and tobacco intake as well as early detection and treatment are need of the hour. Also, strengthening of health services should be done in the form of health education camps and educating people through mass media on hypertension and its risk factors.

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

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Conflict of Interest - All authors declare that there are no conflicts of interest in this study.

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