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BLOOD PRESSURE CONTROL: A NEED OF PRIMARY CARE

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ABSTRACT

Background: The most common cause of mortality in geriatric patients is cardiovascular disease (CVD). Hypertension (HTN), a risk factor for CVD and the number one reason for primary care visits in the India, affects 20-50% of geriatric population.

Methodology: A community based cross sectional study was carried out in the field practice area of Urban health training center (UHTC), dept. Of community medicine, NKP Salve Institute of Medical Sciences and Research Center, Nagpur. A total of 400 subjects aged ≥ 60 years were screened for hypertension. Diagnosis of hypertension was based on the JNC-VII.

Results: Author observed that prevalence of hypertension was 34.75%. Family history of Hypertension, BMI ≥ 25 & Stress as risk factors were highly significant with hypertension (p<0.001,) while Diabetes, Lack of exercise & Alcohol factors were significant with hypertension (p<0.05)

Conclusion: Routine screening of geriatric subjects and counseling of diagnosed cases were suggested for behavioral change.

Key words: Prevalence, Hypertension, JNC-VII, Body mass index, Risk factor

INTRODUCTION

High blood pressure – also known as raised blood pressure or hypertension – increases the risk of heart attacks, strokes and kidney failure. If left uncontrolled, high blood pressure can also cause blindness, irregularities of the heartbeat and heart failure. The risk of developing these complications is higher in the presence of other cardiovascular risk factors such as diabetes. One in three adults worldwide has high blood pressure[1]. So that in this prospect of more increases number of hypertensive & its challenges, WHO declared the WHO day theme for 2013 as high blood pressure.

Hypertension is the commonest cardiovascular disorder, posing a major public health challenge to population in socioeconomic and epidemiological transition. It is one of the major risk factor for cardiovascular mortality, which accounts for 20-50% of all deaths[2].

Hypertension is fast emerging as a modern epidemic in the world. Developed countries are considering it as a leading cause of death but even developing countries do not lag behind in being affected by it.[3]

In a meta-analysis of 34 epidemiological studies from rural and urban populations of India, it was observed that hypertension is emerging as a major public health problem in India and is more prevalent among urban people compared to those of rural area[4].

It is evident that the urban poor living in slums and slum like areas have the worst of both worlds- they adopt a more urbanized lifestyle which places them at a higher risk for NCDs and have poor access to healthcare, partly related to their poor purchasing ability. Lack of knowledge about the morbidity, complications and the method of control of hypertension contributes to a large percentage of undetected and untreated hypertensive subjects in the community[5].

This study attempts to find out extent of hypertension among elderly in slums of Nagpur city.

OBJECTIVES

The study was conducted with objectives to study the prevalence of hypertension among geriatric population and to study the associated risk factors for hypertension among geriatric population.

METHODOLOGY

The cross sectional study was conducted from Nov 2009 to March2011 in urban slum areas of UHTC, covering a population of 20342, which is an adopted area under the administrative control of dept. of community medicine, NKP Salve Institute of medical sciences & research centre, Nagpur. A minimum sample size of 400 elderly people (≥60 yrs) were selected for study by house to house visits and worked out assuming 'p' of 50% and precision of 10% at 95% confidence interval. The first house was selected by lottery method and then every 3rd house was selected by systematic random sampling method. Information about study was given to all study subjects, rapport was developed and then subjects were called at UHTC for detailed history and examination.

Inclusion criteria: Age sixty years and above.

Exclusion Criteria: Age less than sixty years, Chronic and seriously ill person.

Sample size estimation: Based on the prevalence (50%), a sample of 400 was calculated with allowable error of 10% by using this formula: N = (1.96×1.96) pq /L×L, where N=Sample size, P is the prevalence of hypertension among geriatric subjects, q is (100-p) and L is allowable error.

Following Operational definitions were put to use in the present study.

Hypertension: Blood pressure was recorded by using standardized mercury sphygmomanometer in right upper arm in sitting position and if high BP detected in 1st instance, two more readings were taken on different occasions to confirm hypertension. A person was labeled as hypertensive if the systolic BP ≥ 140 mmHg and/or diastolic BP ≥ 90 mmHg.[6] Already diagnosed cases taking anti-hypertensive were also considered for prevalence study. Hypertension was categorized according to the report of JNC-VII for detection and evaluation of blood pressure[7].

Diabetics: Diabetes was diagnosed based on drug treatment for diabetes (insulin or oral hypoglycemic agents) and/or criteria laid by the ADA in 2004 i.e. fasting plasma glucose (FPG) 126 mg/dl or 2 hr post-glucose value 200 mg/dl. Impaired glucose tolerance (IGT) was diagnosed if FPG was <126 mg/dl and 2 hr post- glucose value (140 mg/dl and <200 mg/dl)[8]

Current alcoholics- Who consumed 30 ml or more of any type of alcohol per day for last six months preceding the survey

Current smoking: Someone who at the time of survey, smoked in any form either daily or occasionally for the last six months

Current smokeless tobacco use- Reported consumption of smokeless tobacco in any form at the time of survey either daily or occasionally for the last six months.

Stress: According to Homes and Rahe stress inventory scale, those subjects have score ≥ 150 were included under stress.

RESULTS

In the present study, the total population ≥60 yrs of the age were 400. Out of these, 165 (41.25%) were males and 235 (58.75%) were females.

Table-1 Distribution of study subjects according to level of Blood pressure. (n=400)

Stages	Total (n=400) (%)
Normo-tensive	101 (25.25)
Pre hypertensive	160 (40.0)
Hypertensive Stage-1	96 (24.0)
Hypertensive Stage-2	43 (10.75)

Overall prevalence of hypertension was found to be 34.75% and among them, female hypertensive were 80(20%) more than the male 59 (14.75%). Gender difference in hypertension prevalence was found statistically non significant (p>0.05),{Table 2}.

Total diabetics among study subjects were (18.25%) and among hypertensive, diabetics were 37 (9.25%) and non- diabetics were 37 (9%). Association between diabetes and hypertension was statistically significant (p>0.05).

Majority of the study subjects were non obese (79.25%), while obese were 20.75%. Among hypertensive, 40 (28.78%) were obese, it was highly statistically significant (p<0.001). Females were 2 time more overweight than Males.

The life style profile of study subjects shows that majority of the subjects had no addictions (57.75%) and among them majority were females (66.23%). Among addicts, alcoholics were 8.5% and smokers were 4%, while among hypertensive, alcoholics were 17 (12.23%) & smokers were 18 (12.95%). Here association of hypertension with alcohol was statistically significant (p>0.05), while with smoking, it was not statistically significant.

The subjects were taking non-veg diet 54.75%, subjects were not doing exercise 52.25% and sedentary type physical activities were 51.00% of the total study subjects. Non-vegetarians, lack of exercise and sedentary habit subjects among hypertensive were 75 (53.96%), 61(43.89%) & 67 (48.20%) respectively. Here association of hypertension with non-veg. diet and sedentary habit factors were not statistically significant, while association of hypertension with lack of exercise was statistically significant.

241(60.25%) study subjects belongs to stressed group (60.25%). Males and Females were near equally stressed (61% & 60% respectively). Among the stressed subjects, hypertensive & non hypertensive subjects were 71.22% & 54.41% respectively. Here association of hypertension with stress factor was statistically highly significant (p<0.001).

Table 2: Association of risk factors with Hypertension

Risk factors	Hypertension (139)	Non-HT (261)	P-Value
Sex-M	59	106	0.723
F	80	155	
Diabetes	37	36	0.0015†
Family H/O‡ HT	11	79	0.0000*
BMI ≥ 25	40	218	0.0000*
Sedentary habit	67	137	0.41
Lack of exercise	61	148	0.01†
Non-veg. diet	75	145	0.76
Alcohol	17	17	0.05†
Smoking	18	121	0.084
Stress	99	142	0.0010*

* Highly significant (p<0.001), † Significant (p<0.05), ‡ H/O- History of; HT=Hypertension

DISCUSSION

Hypertension is an important cause of morbidity and mortality in geriatric population and is a risk factor for many other diseases. The present study was conducted to analyze the epidemiological factors, along with risk factors for all the hypertensive subjects. Out of 400 subjects examined and investigated, the overall prevalence of hypertension was found to be 34.75 %. The prevalence of hypertension was 35.76% in males and 34.04% in females among the total study subjects, and among the hypertensive subjects 59(42.45%) were males and 80 (57.55%) were females. This is nearly similar to earlier study of A. Khokhar[9] study and lower than, an urban area study by Rahul Prakash et al[10]. The lower prevalence could be because of more awareness towards health & better health care facilities.

BMI more than or equal 25 was found to be highly significantly associated with hypertension. Similar findings were observed by a cross sectional study conducted among laborers in Madhya Pradesh[11].

In the present study the prevalence of diabetes mellitus was 18.25%. Result shows that diabetes was highly significantly associated with hypertension.

Type of diet (vegetarian verses non vegetarian) was not found to be significant associated to hypertension in this study. Diet and nutrition have been linked to high blood pressure. Composite diets have been demonstrated to reduce the risk of hypertension[12].

We did not find any relationship of smoking with hypertension. Possibly majority of our respondents did not use smoke. This result is not

consistent with that of the Gujarat study,ie. Smokers have a significantly higher BP than non smokers[13].

This study revealed that relationship between alcohol consumption and hypertension was found to be statistically significant. Alcohol consumption has been consistently related to high blood pressure in cross- sectional as well as prospective observational studies in several populations[14].

Moderate alcohol consumption was agreed to be an important life style measure recommended to lower blood pressure.

Stress factor was found to be highly significantly associated to hypertension in this study (p<0.001). This finding favors that stress itself might be a risk factor, or it could be that high levels of stress make other risk factors (such as high cholesterol or high blood pressure) worse. For example, if you are under stress, your blood pressure goes up, you may overeat, you may exercise less, and you may be more likely to smoke.

According to JNC-VII hypertension criteria - Among the elderly respondent in this study normal subjects were (25.25%), pre hypertension (40.0%), stage-1 hypertension (24.0%), and stage-2 hypertension (10.75%) and this study is more closure to the study of Rajshree Bhatt et al[15] (normal-16.5%, pre hypertension-43.1%, stage-1 hypertension-30.7%, and stage-2 hypertension-9.6%).

CONCLUSION

The overall prevalence of hypertension was 34.75%. The higher prevalence of pre-hypertensive subjects points out that, it should be prevented from advancing towards hypertension by comprehensive preventive strategy. This could reduce burden on health systems for their management at tertiary care institutes. This study recommends to encouraging self-care for prevention of high blood pressure and modification or elimination of the risk factors.

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