Original Research Article

Prevalence of Hypertension Among Adults – A Cross Sectional Study

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Abstract

Background: Hypertension is a silent, invisible killer that rarely causes symptoms in the early stages and many people go undiagnosed. Hypertension prevalence is lower in the rural Indian population, although there has been a steady increase over time here as well. In fact, the life patterns of people residing in proximity of cities are atypical in the sense that these are neither rural nor urban. Those who are diagnosed may not have access to treatment and may not be able to control their illness over the long term. **Objectives**: To the prevalence assess of hypertension and health seeking behaviour among adults. **Materials and Method**: The present cross sectional study was conducted in the Medicine OPD and Department of Physiology, Nalanda Medical College and Hospital, Patna. This study was conducted for a period of 2 years from January 2016 to January 2018. Prevalence of hypertension was assessed by adopting a community based cross sectional research design. Data thus generated was analyzed manually as well as with the help of personal computer in Microsoft Office Excel and Statistical association of different parameters in study subjects were tested by using chi-square. **Results:** Total 596 people in the age group 15-60 years were examined. 310 were male and 286 were female. In the present study, prevalence of hypertension among study subjects was 21.5%. In male it was 26% while in female it was 17%. The results reveal that only 26.5% were aware of their hypertension status and 73.5% did not know that they are hypertensive.**Conclusion:** There is an increasing trend of hypertension problem in India in the near future

Key Words: Prevalence, Rural, Awareness, Health Seeking.

Introduction

Hypertension is a silent, invisible killer that rarely causes symptoms in the early stages and many people go undiagnosed. Normal blood pressure is defined as levels < 120/80 mmHg, systolic blood pressure of 120-139 mmHg or diastolic blood pressure 80-89 mmHg is classified as prehypertension (based on the mean of two or more readings on two or morevisits).Hypertension in adults aged 18 years and older is defined as systolic blood pressure (SBP) of 140 mm Hg or greater and / or diastolic blood pressure (DBP) of 90 mmHg or greater or any level of blood pressure in patients taking antihypertensive medication diagnosed earlier[1].

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Among all WHO regions, the prevalence of raised blood pressure was highest in the African region (46%) and lowest in the region of the America (35%). In the South-East Asia Region, 36% of adults have hypertension. In India, raised blood pressure increased from 5% in the 1960s to nearly 12% in 1990s, to more than 30% in 2008[2]. Non communicable diseases accounted for 63% of global deaths in 2008, nearly 80% of these deaths occured in low income countries. In the South East Asia Region, approximately 35% adult population has hypertension which account for nearly 1.5 million deaths annually; 9.4% of total death are attributed to hypertension[3].In India, hypertension is the leading NCD risk and estimated to be attributable to nearly 10 per cent of all deaths. Adult hypertension prevalence has risen dramatically over the past three decades from 5 per cent to between 20-40 per cent in urban areas and 12-17 per cent in rural areas, The number of

hypertensive individuals is anticipated to nearly double from 118 million in 2000 to 213 million by 2025. It is estimated that16 per cent of ischemic heart disease, 21 per cent of peripheral vascular disease, 24 per cent of acute myocardial infarctions and 29 per cent of strokes are attributable to hypertension. The huge impact effective hypertension prevention and control can have on reducing the rising burden of cardiovascular disease (CVD)[4] Essential hypertension, a grossly under estimated condition in rural communities, is likely to be an important public health problem due to changing socio-cultural context under urban influence.

Hypertension prevalence is lower in the rural Indian population, although there has been a steady increase over time here as well. In fact, the life patterns of people residing in proximity of cities are atypical in the sense that these are neither rural nor urban. Those who are diagnosed may not have access to treatment and may not be able to successfully control their illness over the long term. With this background, this study was undertaken to assess the prevalence and explore the health seeking behaviour among adults.

Materials and method

The present cross sectional study was conducted at Medicine OPD and Department of Physiology, Nalanda Medical College and Hospital, Patna. This study was conducted for a period of 2 years from January 2016 to January 2018.The study was approved by Institutional research and ethical committee. An informed and written consent was taken from all the participating subjects prior to the commencement of the study. The study was primarily directed towards estimating the prevalence of essential hypertension, and health seeking behavior. Prevalence of hypertension was assessed by adopting a community based cross sectional research design. The sample size for estimating magnitude of systemic hypertension has been estimated by taking a prevalence of hypertension at 43.3%, a study conducted by Rao C *et al.*, at costal Karnataka with permissible level of error as 10.0%. A total of 596 subjects reporting to the medicine OPD of our institution, in age group 18 to 60 years were included in the study. The sample was drawn through simple random sampling.Blood pressure of each study subject was recorded by mercury sphygmomanometer. The diagnosis of hypertension was made only after elevation was noted after two readings. Subjects were categorized based on their blood pressure as per JNC – VII classification. Data thus generated was analyzed manually as well as with the help of personal computer in Microsoft Office Excel and Statistical association of different parameters in study subjects were tested by using chi-square.

Results

The present study was conducted to estimate the prevalence and understand the health seeking behaviour among adults in pawapuri. Prevalence of hypertension found in our study was 21.5%. Total 596 people in age group 15-60 years were examined. 310 were males and 286 were females. (Figure-1) In the present study, prevalence of hypertension among study subjects was 21.5%. In male it was 26% while in female it was 17%. In male study subjects both stages of hypertension (stage I and stage II) had higher prevalence than female study subjects. Almost half of the study subjects (52.3%) were pre-hypertensive. Total 5.4% study subjects were in Stage 2 of hypertension while 16.1% in stage 1. The prevalence of hypertension increases as age advances. Prevalence of hypertension is higher (32.4%) in age group 50-60 years and lowest (12.2%) in 18-29years.

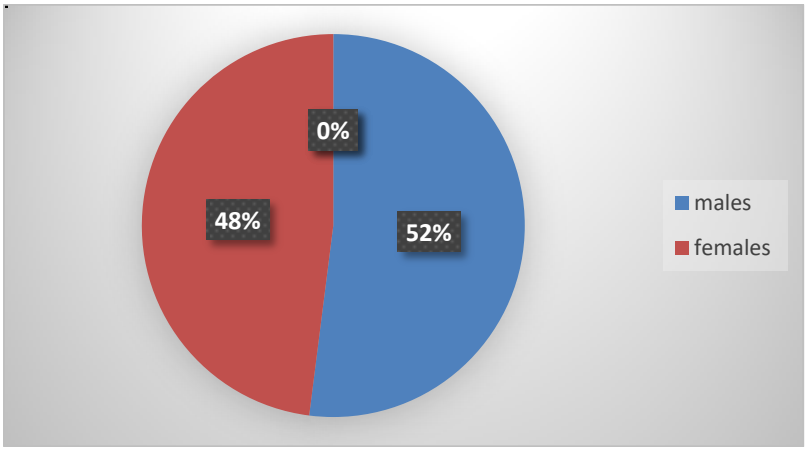

Fig 1:Gender wise distribution of subjects

Table 1: Age wise prevalence of hypertension in the study population

Age group	Normal		Pre-hypertension		Hypertension Stage -I		Hypertension Stage- II		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
18-29	88	44.9	84	42.9	20	10.2	4	2.0	196	100
30-39	40	31.2	64	50.0	20	15.6	4	3.1	128	100
40-49	20	16.1	72	58.1	20	16.1	12	9.7	124	100
50-60	8	5.4	92	62.2	36	24.3	12	8.1	148	100
Total	156	26.2	312	52.3	96	16.1	32	5.4	596	100

X^2= 85.7; df=9; p<0.05

Table 2: Gender wise prevalence of hypertension in study population

Gender	Normal		Pre-hypertension		Hypertension Stage-I		Hypertension Stage-II		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Male	64	20.6	166	53.5	56	18.1	24	7.7	310	100
Female	92	32.2	146	51.0	40	14	8	2.8	286	100
Total	156	26.2	312	52.3	96	16.1	32	5.4	596	100

X^2=16.03; df=3; p= .001

The results reveal that only 26.5% were aware of their hypertension status and 73.5% did not know that they have hypertension (Flow diagram). About half (55.6%) of the aware hypertensive were under medication. Only 40% of under medication hypertensive had controlled their hypertension. More men (27.3%) than women (25%) were aware of their hypertension status. Awareness about hypertension status was highest (50%) in 50-60 years of age group and lowest in 18- 29 years of age group.

Discussion

We live in a speedily changing environment. Across the world, human health is being influenced by demographic ageing, rapid urbanization, and the globalization of unhealthy lifestyles. In the present study, the prevalence of hypertension in age group 18-60 years was 21.5% which consists of stage I (16.1%) and stage II hypertension (5.4%). More than half (52.3%) of the study subject were in the pre-hypertension group.The prevalence of hypertension in India as reported by Padmavati S et al [5]· is ranging from 10 to 30.9% and by Chobanian AV et al[6] is 25% in urban and 10% in rural inhabitants. A study conducted by Gupta M et al[7]., in 2012 in a rural population of Meerut reported prevalence of hypertension 18% including 9.2% in hypertension stage I and 8.8% subject in hypertension Stage II while 57.9% belong to pre hypertension stage. These studies are likeour study. The prevalence of hypertension has increased during the last decade. The high prevalence of in the current study, confirms this increasing trend. Rapid urbanization, lifestyle changes, dietary changes and increased life expectancy are factors attributable to this rising trend.n present study the prevalence of hypertension increases as age advances as shown in Table No.2, the prevalence of hypertension is highest (32.4%) in age group of 50-60 years and followed by 25.8% in ages 40-49years and 18.7% in 30-39 years of age, lowest (12.2%) in 18-29 years of age. A similar study conducted by Gupta M et al., 2012[7] in rural Meerut and Mahmood SE, (2011)[8].There was an age-dependent increase in the prevalence of hypertension in both genders with a lower prevalence in younger age groups and a higher prevalence in older subjects.Present study show males had higher (25.8%) prevalence of hypertension than females (16.8%), prevalence of hypertension was more in hypertension stage I than hypertension stage II in both genders as shown in Table No.2. A study conducted by Mahmood SE[9] (2012) in rural Bareilly shows similar findings with higher (15.1%) prevalence of hypertension among males and lower (12.3%) among females and also hypertension stage I shows higher prevalence than stage II hypertension. Contrary to our study high prevalence (15.9%) of hypertension among female than male (15%) was observed by Bhardwaj S et a1., (2012)[10] in rural area of Nagpur Maharashtra and also study conducted by Parekh A(2013) in rural Vadodara Gujarat theproportion of hypertension (22.1%) was found to be

slightly higher among females as compared to that in males(19.2%)[11].In present study only 36 (26.5%) out of 136 (100%) hypertensive subjects were aware of their hypertension as shown in flow diagram no.1. Out of aware hypertensive subjects 20 (55.6%) (14.7% of total hypertensive) was taking pharmacological treatment for the condition, mostly allopathic. However, only 8 of these 20 (40%) had their BP under control. So, out of total 136 hypertensive patient only 8 i.e. 5.9 % of total hypertensive had their blood pressure under control. A similar study conducted by Bhardwaj S et al [10]., (2012) in rural Nagpur, Maharastra reported only 14.5% of hypertensive subjects were aware of their elevated blood pressure and out of hypertensive subjects 9.4% were taking pharmacological treatment for the condition, mostly allopathic. However, only 3.9% had their blood pressure under control out of total hypertensive. The overall awareness, treatment and adequacy of control of hypertension in our sample were low (26.5%, 14.7% and 5.9%, respectively). A study conducted by Singh RB et al[12], reported awareness of hypertension was very less at Moradabad (11%) and Nagpur (14%), compare to Kolkatta (22.1%), Mumbai (24.9%) and Trivandrum (25.9%). Out of total aware hypertensive subjects, 40-50 % was on drug therapy. A systematic review and meta-analysis in India by Raghupathy A et al[13] , The pooled estimate for awareness of blood pressure in rural and urban India was 25.1% and 41.9%,respectively.

Conclusion

The present study shows lack of awareness and an inadequate treatment seeking (in terms of medication) despite of high prevalence of hypertension. So there is a need and scope for future research works in these areas. There is required awareness regarding hypertension and its consequences in the background of increasing CVD morbidity and mortality. The awareness about hypertension in the rural community shouldbe increased with screening,primary healthcareservices and proper referral systems.These results stress the public health importance of hypertension in the rural population due to increasing trend of hypertension problem in India in the near future.

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