

Research Article

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Prevalence study of hypertension among adults in an urban area of Jammu

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Abstract

Background: Considering the epidemic of hypertension in recent decades the present study was carried out in an urban adult population to study the prevalence of the disease. **Objective:** To determine the prevalence of hypertension in an urban adult population aged 30 years and above of Trikuta Nagar colony Jammu. **Materials and Methods:** Study was conducted in urban population aged 30 years and above of Trikuta Nagar colony in Jammu district of J&K falling under urban health centre, Department of Community Medicine, Government Medical College Jammu. Every alternate house was visited thus covering 50% of total houses. A conventional mercury sphygmomanometer was used for recording blood pressure. Hypertension was diagnosed when the systolic blood pressure was ≥ 140 mmHg and/or Diastolic blood pressure was ≥ 90 mmHg. Those already diagnosed as hypertensives and taking medication were also considered as hypertensives. **Results:** The overall prevalence of hypertension in the study population was 57.83%. A higher proportion of males were suffering from hypertension (65.21%) as compared to females (52.64%). Diabetes mellitus was found to be the most common co morbid condition. **Conclusion:** The study shows high prevalence of hypertension in urban population.

Keywords: Prevalence, Hypertension, Co-morbid conditions.

Introduction

Hypertension is an important public health challenge in both economically developed and developing countries. Globally overall 26.4% of adult population in 2000 was estimated to have hypertension and 29.2% were projected to have this condition by 2025.¹ Hypertension is reported to be the fourth contributor to premature death in developed countries and seventh in developing countries.² Approximately one-third of the adult population in the SEA region has high blood pressure. It is one of the most important causes of premature death worldwide and the problem is growing.³ The prevalence of hypertension varies considerably from one region to another. Many studies in urban and rural areas of India have been carried out and these have shown steadily increasing trend of hypertension in India. As hypertension can be asymptomatic, so many people with hypertension do not seek medical care. Therefore, detection and control is a major public health challenge in both developed and developing countries. The prevalence of hypertension has increased worldwide partially because of more stringent definition of hypertension. An epidemiological shift in the prevalence of hypertension in developing countries as compared to developed countries has been observed.⁴ It is necessary to study the magnitude of the problem in different ethnic groups with different lifestyle under different environmental condition.

Prevalence studies are important for planning of public health services. No such study has been done before in urban areas of Jammu division of J&K, thus, the present study was carried out in this area of Jammu to find out the prevalence of hypertension.

Materials and Methods

After seeking permission from the institutional ethics committee, a study was conducted in urban population aged 30 years and above of Trikuta Nagar colony in Jammu district of J&K. Every alternate house was visited thus covering 50% of total houses. People who were not available during first visit were paid a second visit as per their convenience after fixing date and time with their family members. If they were not available even after the second visit they were excluded from the study. A conventional mercury sphygmomanometer along with stethoscope was used for recording blood pressure. Blood pressure was measured in sitting position in the right arm of all participants for purpose of uniformity. The systolic & diastolic blood pressure readings were measured three times over a period of at least three minutes and lowest reading was recorded.⁵ Hypertension was diagnosed when the systolic blood pressure was ≥ 140 mmHg and/or diastolic blood pressure was ≥ 90 mmHg.⁶ Those already diagnosed as hypertensives and taking medication were also considered as hypertensives. Socio-economic status was classified as per “Kuppuswamy Socioeconomic Status Scale”. The subjects were also inquired about any physician diagnosed co-morbid condition like Diabetes mellitus, Cardiovascular Disease, etc.

Results

A total of 1162 subjects was studied, including 480 males (41.31%) and 682 females (58.69%). Mean age of population was 54.7 years \pm 14.84 years with a mean age of males 57.64 years \pm 15.08 years and that of females 52.64 years \pm 14.33 years. The overall prevalence of hypertension in the study population was 57.83%, Table 1.

Table 1: Hypertension prevalence among study population (≥ 30 year age group)

Hypertension status	No. of subjects	
	n	%
Absent	490	42.17
Present	672	57.83
Total	1162	100

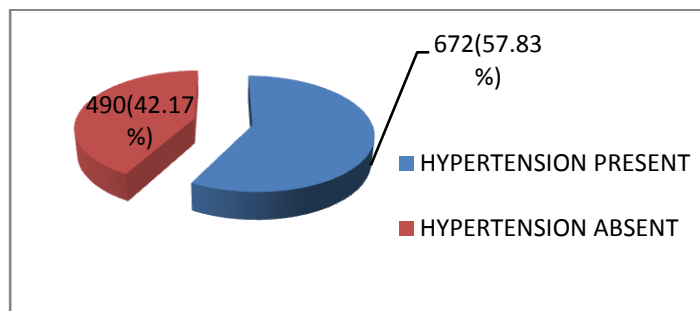


Figure 1: Prevalence of hypertension in study population

Three fourths of hypertensive subjects were known hypertensive (n=489) and were on medication. Almost one fourth of cases (n=183) were newly diagnosed during the study period, Table (2).

Table 2: Known and newly diagnosed cases of Hypertension

Hypertension Cases	Number of subjects	
	n	(%)
Known Cases	489	72.77
Newly Diagnosed Cases	183	27.23
Total	672	100

Highest number 44 (24.04%) of newly diagnosed cases of hypertension were in the age group of 60-69 years, followed by 41 (22.40%) in the age groups of 50-59 years and an equal number of cases, i.e. 34 (18.5%) each in age groups of ≥ 70 years and 40-49 years respectively, Table (3).

Table 3: Age and Sex wise distribution of hypertensive subjects diagnosed during the study period

Age groups (in years)	Newly diagnosed subjects with hypertension		Total
	Males	Females	
	n (%)	n (%)	
30-39	14(46.67)	16(53.33)	30
40-49	19(55.88)	15(44.12)	34
50-59	13(31.71)	28(68.29)	41
60-69	16(36.36)	28(63.64)	44
≥ 70	24(70.59)	10(29.41)	34
Total	86(47.00)	97(53.00)	183

Prevalence increased steadily with age from 23.65% in 30-39 years age group to 81.77% in ≥ 70 year age group. Marked increase was seen from fifth decade onwards.

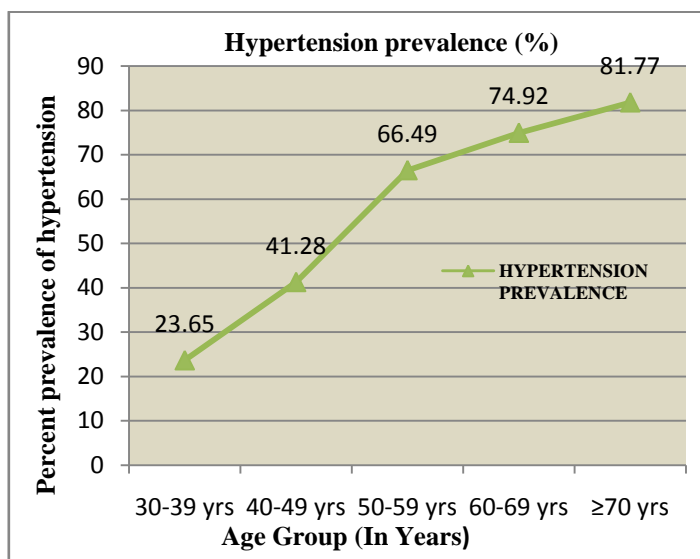


Figure 2: Line diagram depicting the prevalence of hypertension with age

A higher proportion of males were suffering from hypertension (65.21%) as compared to females (52.64%).

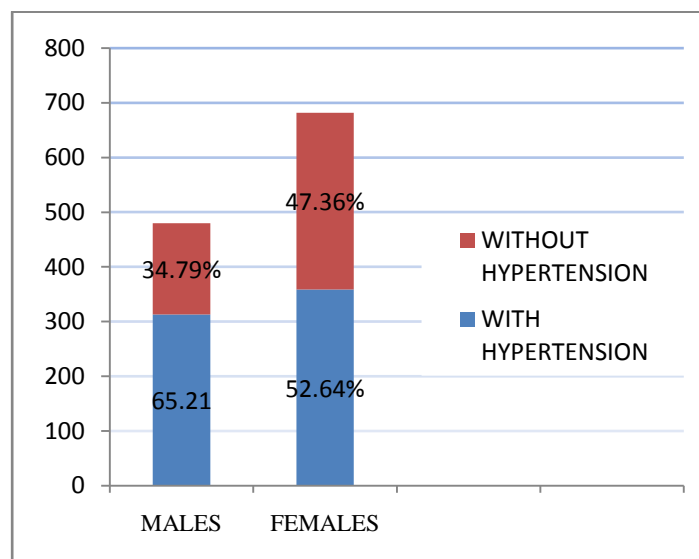


Figure 3: Prevalence of hypertension in different sexes

Socioeconomic status was not significantly associated with hypertension, although a higher proportion of cases (61.31%) of hypertension were from the upper class. Similarly the proportion of hypertensive in the lower middle class appears to be high (69.23%) but the number of subjects in this class is very low for generalization of results. None of the subjects belonged to lower class.

Table 5: Prevalence of hypertension with different socioeconomic status in Study population

Socioeconomic status	Subjects with Hypertension	Total population Aged ≥30 years	Prevalence
Upper class	244	398	61.31%
Upper middle class	419	751	55.79%
Lower middle class	9	13	69.23%
Total	672	1162	57.83%

Out of 672 subjects suffering from hypertension in study population 21.42% had diabetes and 8.77% were suffering from hypothyroidism 9.97% hypertensive subjects had coronary heart disease.

Table 6: Prevalence of co morbid conditions in hypertensive patients

Disease	Male	Female	Total
Hypertension only	176	193	369 (54.99%)
Hypertension with coronary artery disease	38	29	67 (9.97%)
Hypertension with chronic kidney disease	6	6	12 (1.78%)
Hypertension with hypothyroidism	11	48	59 (8.77%)
Hypertension with stroke	12	9	21 (3.12%)
Hypertension with diabetes mellitus	77	67	144 (21.42%)
Total	320	352	672 (100%)

Discussion

In the present study the prevalence of hypertension was 57.83%. Out of these (489) 72.77% were already diagnosed and were on medication, (183) 27.23% were diagnosed during the study period. Approximately one fourth of newly diagnosed cases were in the age group of 60-69 years. The prevalence rate of hypertension was 12.7% (127.5/1000) in a study conducted in an urban population of Delhi by Chadha SS, et al.⁷ The reason behind this low prevalence was that the study population included subjects with age 25 to 64 years and criteria for defining hypertension was >160 mmHg systolic blood pressure and/or a diastolic blood pressure >90 mmHg. In a study conducted by Yadav S et al in subject's ≥ 30 years of age prevalence of hypertension was 32.2%.⁸ However different methodology for measurement of blood pressure was adopted and mean age of study population among males was 51.2 years ± 11.5 and that of females was 48.4 ± 11.4 years. In a multicentre study conducted at rural & urban centres Quasem I et al found an overall prevalence of 65% with higher prevalence of hypertension in urban population (72%).⁹ However, this study was conducted on subjects ≥ 60 years of age.

Prevalence increased steadily with age from 23.65% in 30-39 years age group to 81.77% in ≥ 70 years age group. A study conducted on an urban colony in Lucknow demonstrated the overall prevalence of hypertension in the age group of 30-39 years to be 13.7% and increased to a peak of 64% in the age group 60-69 years ($p < 0.0001$).⁸ Another study in Soussa, Tunisia showed prevalence of hypertension increasing with age from 3.2% since 20-30 years age to 41% for those over 70 years.¹⁰

In our study higher proportion of males was suffering from hypertension (65.21%) as compared to females (52.4%) Other studies conducted in India by Singh RB et al¹¹, Banerji M et al¹², Yadav S et al⁸ also reported similar results. In contrast to our study higher prevalence of hypertension has been reported in females than males in studies conducted by Gupta R et al¹³, Gupta PC et al¹⁴.

In our study socioeconomic status was not significantly associated with hypertension. In a study at Lucknow differences observed in the subjects belonging to the upper socioeconomic class as compared to lower socioeconomic class were purely due to chance alone.¹⁵ However, significant association of hypertension with socioeconomic status was found in other studies.^{16, 17}

In our study the percentage of Hypertensive subjects who reported having been diagnosed with diabetes was (21.42%), stroke (3.12%), Chronic kidney disease (1.78%), coronary artery disease (9.97%) and hypothyroidism (8.77%). A study conducted in Ontario among adult population 20-79 years age found the prevalence of Diabetes mellitus among hypertensive's to be 17.5%, Kidney disease (4.4%), and stroke (8.7%).¹⁸ In another study conducted in Tamil Nadu, among hypertensive (25.3%) were suffering from Diabetes mellitus.¹⁹ In another study conducted at an urban colony in Lucknow city known cardiovascular disease was more in hypertensive subjects (9.8%) as compared to normotensive subjects (2.3%).⁸ In a study conducted in Japan, twenty-five out of 169 (14.8%) in hypothyroid patients and 17 of 308 (5.5%) in euthyroid patients had hypertension.²⁰

Our study has certain limitations as; subjects were chosen from single locality and thus may not be representative of whole urban area of Jammu.

Conclusion

The present study shows high prevalence of hypertension in an urban population of Jammu. Diabetes mellitus is most commonly associated co morbid condition associated with hypertension. The findings of study emphasize the need of a strong preventive strategy, including health education, behavioral modification & early detection & treatment of those who are unaware of this condition & strict implementation of national programs for prevention & control of diabetes, cardiovascular diseases & stroke.

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