

Assessment of Hypertension among Young Population: A Prospective Study

Subhash Chand Bansal

Principal Specialist (General Medicine), Raj Bahadur Memorial Hospital, Bharatpur, Rajasthan, India.

ABSTRACT

Background: High blood pressure (BP) is an important risk factor for attributable burden of disease. Globally, about 62% of cerebrovascular diseases and 49% of ischemic heart disease are attributable to elevated blood pressure (BP) that could have been reduced by antihypertensive drug therapy. Hence; we planned the present study to assess the prevalence of hypertension (HTN) among young adults.

Materials & Methods: The present study included assessment of prevalence and pattern of hypertension among young population. A total of 400 subjects were included in the present study. All the subjects were called for general physical and medical screening. Five blood pressure readings were noted and mean value was obtained from them. All the results were recorded and analyzed by SPSS software.

Results: HTN was seen to be present in 11 percent of the study population. Among males and females, prevalence rate of HTN was found to be 12 percent and 10 percent respectively.

Conclusion: Among young population, HTN pose a significant health problem.

Key words: Hypertension, Young Adults, Diagnosis.

*Correspondence to:

Dr Subhash Chand Bansal,
Principal Specialist (General Medicine),
Raj Bahadur Memorial Hospital,
Bharatpur, Rajasthan, India.

Article History:

Received: 13-06-2017, Revised: 04-07-2017, Accepted: 27-07-2017

Access this article online

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|--|--|
| Website: www.ijmrp.com | Quick Response code  |
| DOI: 10.21276/ijmrp.2017.3.4.054 | |

INTRODUCTION

In the south Asian region, High blood pressure (BP) ranks third in the list of risk factor for attributable burden of disease. Hypertension (HTN) exerts a substantial public health burden on cardiovascular health status and healthcare systems in India.^{1,2} HTN is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease deaths in India. The WHO rates HTN as one of the most important causes of premature death worldwide.³

The Global and Regional Burden of Disease and Risk Factors study, in a systematic analysis of population health data for attributable deaths and attributable disease burden, has ranked HTN in south Asia as second only to child underweight for age.⁴ Globally, about 62% of cerebrovascular diseases and 49% of ischemic heart disease are attributable to elevated blood pressure (BP) that could have been reduced by antihypertensive drug therapy.^{5,6} Hence; we planned the present study to assess the prevalence of HTN among young adults.

MATERIALS & METHODS

The present study was conducted in the department of general medicine of Raj Bahadur Memorial Hospital, Bharatpur, Rajasthan. The study included assessment of prevalence and

pattern of hypertension among young population. Ethical approval was taken from institutional ethical committee and written consent was obtained after explaining in detail the entire research protocol. A total of 400 subjects were included in the present study. Inclusion criteria for the present study included:

- Subjects between the age group of 18 years to 35 years;
- Subjects with negative history of any other systemic illness,
- Pregnant subjects

All the subjects were called for general physical and medical screening. A questionnaire was framed for extracting information from patients regarding their socio-demographic details, complete physical and family history etc. Blood pressure and other investigations were performed in all the subjects.

Sphygmomanometer was used for measuring the blood pressure of the patients and confirming the diagnosis of hypertension. Patients with history of smoking and alcohol drinking were instructed to stop intake of them 24 hours before the examination procedure. Five blood pressure readings were noted and mean value was obtained from them. All the results were recorded and analyzed by SPSS software. Chi-square test and student t test were used for assessment of level of significance. P-value of less than 0.05 was taken as significant.

RESULTS

In the present study, we included a total of 400 subjects, out of which, 200 were males and the remaining 200 were females. Smoking habit was present in 7.5 percent of the subjects while alcohol drinking habit was seen in 12.5 percent of the subjects.

Family history of HTN was present in 20 percent of the subjects. HTN was seen to be present in 11 percent of the study population. Among males and females, prevalence rate of HTN was found to be 12 percent and 10 percent respectively.

Graph 1: Demographic details of the subjects

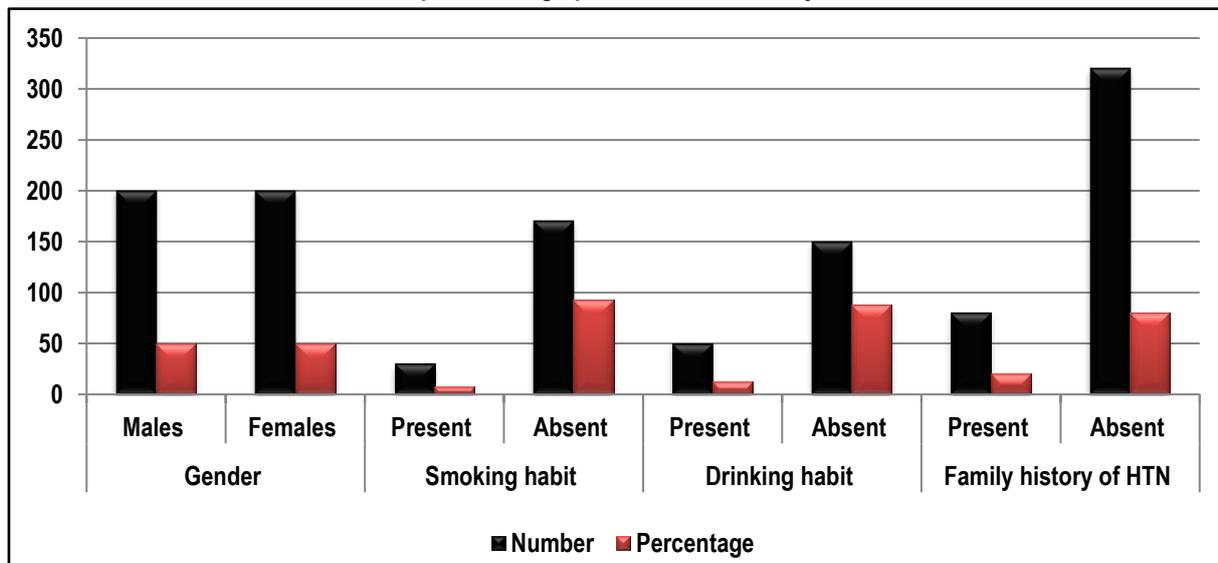
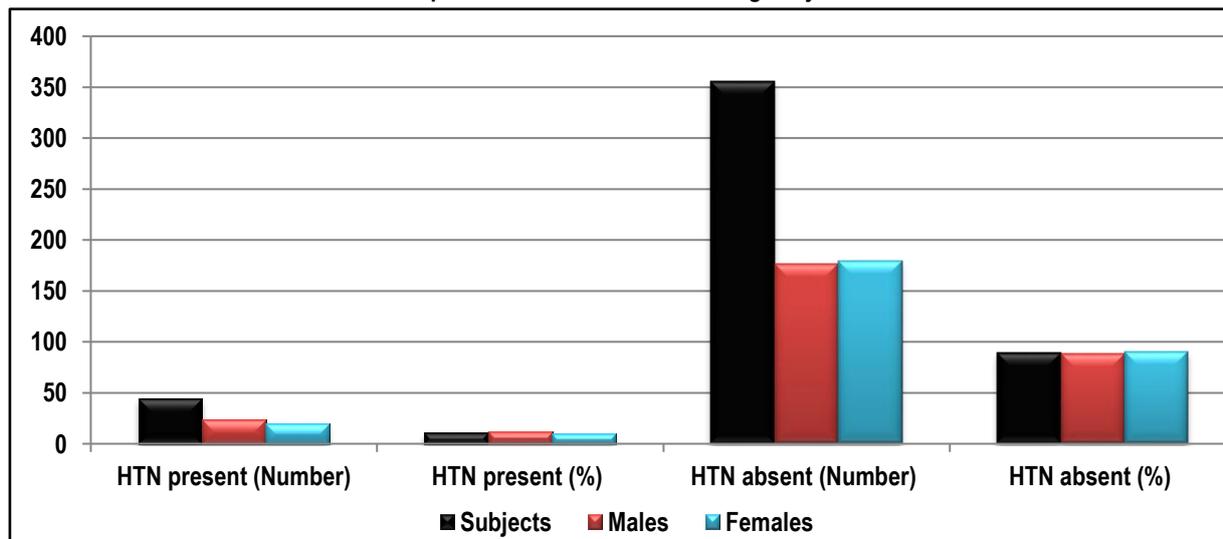


Table 1: Prevalence of HTN among subjects

| Parameter | HTN present (Number) | HTN present (%) | HTN absent (Number) | HTN absent (%) |
|-----------|----------------------|-----------------|---------------------|----------------|
| Subjects | 44 | 11 | 356 | 89 |
| Males | 24 | 12 | 176 | 88 |
| Females | 20 | 10 | 180 | 90 |

Graph 2: Prevalence of HTN among subjects



DISCUSSION

In the present study, while assessing the prevalence of HTN, we observed that HTN was present in 11 percent of young adult population. Bhadoria AS et al studied the difference in the prevalence of hypertension and associated risk factors in urban and rural populations and the association of hypertension with various determinants. A community-based cross-sectional study was conducted in 48 villages and 15 urban wards of Jabalpur District of Central India. Nine hundred and thirty-nine individuals

aged 20 years and above (624 from rural areas and 315 from urban areas) were included in the study. The prevalence of hypertension and associated cardiovascular risk factors was assessed in the urban and rural populations. A pretested questionnaire was used to collect data on socio-demographic, behavioral, and dietary factors. Anthropometric measurements of weight, height, waist and hip circumference, and blood pressure measurements were taken using the standard methodology.

The glucose oxidase–peroxidase and cholesterol oxidase–cholesterol peroxidase methods were used to measure plasma glucose and serum cholesterol, respectively. Bivariate analysis was followed by multivariate analysis to detect the odds of getting hypertension with various risk factors for the urban and rural populations separately. Hypertension was defined as per Joint National Committee (JNC) - VII criteria. The response rate was 97%. Overall prevalence of hypertension was 17%, with 21.4% in the urban population and 14.8% in the rural population. Significantly higher mean values of weight, height, body mass index (BMI), hip circumference (HC), waist circumference (WC), waist hip ratio (WHR), systolic blood pressure (SBP), fasting blood sugar (FBS), and serum cholesterol levels were mapped in the urban population in comparison with the rural population. Multivariate logistic regression analysis identified increasing age, parental history of hypertension, tobacco smoking, tobacco chewing, physical inactivity, high estimated per capita salt consumption, and BMI ≥ 27.5 kg/m² as independent predictors for hypertension in the urban population, while in the rural population, increasing age, physical inactivity, central obesity, tobacco chewing and tobacco smoking were independent predictors for hypertension. The prevalence of hypertension and other cardiovascular risk factors was high in both urban and rural communities. Therefore, there is a need for comprehensive health promotion programs to encourage lifestyle modification.⁷

Bonsa F et al assess the prevalence of hypertension and its risk factors among adults in Bedele Town, South-west Ethiopia. A community-based cross-sectional survey was conducted by interviewing participants regarding their socio-demographic characteristics, history of hypertension, its risk factors and knowledge of its complications and treatment. Measurements of their blood pressure, body weight, height, and waist circumferences were also done on the same day. The data were analyzed using SPSS Version 16 statistical software. Chi-square test and odds ratio with 95% CI were used to assess the association between dependent and independent variables. Logistic regression model was used to determine the independent risk factors for hypertension. P-values of < 0.05 were considered statistically significant. A total of 396 adults of whom 67.4% were males participated in the study. Prevalence of hypertension, defined as systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg or reported use of anti-hypertensive medication, was 16.9%. However, only 44.8% of those with hypertension were aware of their status, and the overall control rate of hypertension was only 22.4%. Only age and waist circumference were found to be independent predictors of hypertension in the community. Hypertension was found to be prevalent in the community.⁸ Anchala R et al conducted a region-specific systematic review and meta-analysis of the prevalence, awareness, and control of hypertension among Indian patients. Medline, Web of Science, and Scopus databases from 1950 to 30 April 2013 were searched for 'prevalence, burden, awareness, and control of blood pressure (BP) or hypertension (≥ 140 SBP and or ≥ 90 DBP) among Indian adults' (≥ 18 years). Of the total 3047 articles, 142 were included. Overall prevalence for hypertension in India was 29.8%. Significant differences in hypertension prevalence were noted between rural and urban parts. Regional estimates for the prevalence of hypertension were as follows: 14.5%, 31.7%, 18.1%, and 21.1% for rural north, east,

west, and south India; and 28.8%, 34.5%, 35.8%, and 31.8% for urban north, east, west, and south India, respectively. Overall estimates for the prevalence of awareness, treatment, and control of BP were 25.3%, 25.1%, and 10.7% for rural Indians; and 42.0%, 37.6%, and 20.2% for urban Indians. About 33% urban and 25% rural Indians are hypertensive. Of these, 25% rural and 42% urban Indians are aware of their hypertensive status.⁹

CONCLUSION

From the above results, the authors conclude that among young population, HTN pose a significant health problem. Therefore; we require further epidemiological studies for reducing the morbidity associated with the disease.

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Source of Support: Nil. **Conflict of Interest:** None Declared.

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Cite this article as: Subhash Chand Bansal. Assessment of Hypertension among Young Population: A Prospective Study. *Int J Med Res Prof.* 2017; 3(4):242-44. DOI:10.21276/ijmrp.2017.3.4.054