

Original article:

Prevalence of hypertension among young adults at tertiary care center Rajasthan, India

Dr Hanuman Prasad Jaipal¹. Dr Meenakshy Jaipal² Dr Gautam Lunia³ Dr. Abhishek kawatra⁴

1 Associate Professor, Dept. Of Medicine, Churu Medical College, Churu.

2. Assistant Professor, Dept. Of Biochemistry, Churu Medical College, Churu

3. Resident, Dept of Community Medicine. S.P. Medical College, Bikaner.

4. Associate Professor, Dept. Of Community Medicine, S. P. Medical College, Bikaner.

* Corresponding author – Dr Meenakshy Jaipal, Assistant Professor, Dept. Of Biochemistry, Churu Medical college, Churu

Email meenakshy.jaipal@gmail.com



Creative Commons Attribution
4.0 International license

CC BY 4.0

ABSTRACT

Background: Young adults are failed to observe in studies on impact of high blood pressure as they are esteemed to be at a low risk of developing the complication or disease. Study of disease prevalence and their relation with life style habits provide the information required to develop interventional strategies. The objectives were to estimate the prevalence of hypertension among young adults at tertiary care center Rajasthan and to study the impact of life style habits like tobacco use and alcohol consumption on hypertension. **Methods:** Data were collected from 150 patients aged 18 years and older attending OPD were screened by a cross-sectional survey method. Blood pressure recordings, anthropometric measurements as well as socio-demographic characteristics were collected. **Results:** High blood pressure was observed in 60 out of the 150 patients (40%), of which the 12 (8%) are hypertensive, majority were newly diagnosed (75%). Prevalence of high blood pressure among male students was higher (58.33% compared to 41.67% among female students). Out of total 32% and 8% of the students were found to pre-hypertensive and hypertensive respectively. Prevalence of hypertension was found higher among those with a history of smoking or alcohol consumption. **Conclusions:** Majority of students with high blood pressure (hypertensive stage) were previously undiagnosed. A large number of students were in pre-hypertensive stage. Their early identification and right intervention at right time will lessen the impact of high blood pressure in productive age.

Keywords: High blood pressure, Young adults.

INTRODUCTION

Raised blood pressure (BP) has emerged as the most important risk factor for global morbidity and mortality. The latest iteration of Global Burden of Diseases (GBD) study has reported that high systolic BP, poor dietary intake and tobacco use are most important risk factors for mortality as well as morbidity.¹ GBD has reported that in 2017, high systolic BP was the leading risk factor globally, accounting for 10.2 million [9.16–11.3 million] deaths and 208 million (UI 188–227 million) disability adjusted life years (DALYs). Overall, 8.61% (UI 7.66–9.56) of total DALYs were attributable to high SBP.

Most of the burden attributable to high SBP was due to ischemic heart disease and stroke, and high SBP accounted for 55.5% (UI 48.0–62.7) and 56.5% (UI 49.0–63.2) of DALYs due to ischemic heart disease and stroke, respectively.¹ In India also, it has emerged as the most important risk factor for deaths and disability.² According to reports from World Health Organization (WHO),³ GBD study,⁴ and Non-Communicable Disease Risk Factor Collaboration (NCDriSC)⁵ prevalence of hypertension is increasing globally and currently more than 1 billion people have hypertension (defined with standard criteria as systolic BP \geq 140 and/or diastolic BP \geq 90 mm Hg). NCDriSC study reported that number of adults with high BP increased from 594 million in 1975 to 1.13 billion in 2015 and the increase was mostly in low-income and middle-income countries.⁵

Developing Countries have undergone rapid industrialization, Urbanization, Globalization and economic development over the last four decades. As a consequences standard of living has improved but with a detrimental shift toward inappropriate dietary patterns and reduction in physical activities.⁶ This health transition will ultimately effect the health of young adults with people in reproductive age group of present generation. Prevalence of Hypertension in India ranges from 17% to 29.8%.⁷ Cardiovascular diseases are the leading cause of death globally, accounting for approximately 31% of all global deaths. Of these 17.5 million, 7.4 million were due to coronary heart disease and 6.7 million were due to stroke.

The prevalence of hypertension among young adults is on a steady rise. This may be attributed by several factors such as changed lifestyle and education pattern that leads to stress. We have to improve detection rates by screening in school and colleges periodically.⁸ Over 80 percent of cardiovascular deaths in developing countries are due to lack of widespread diagnosis and treatment at early stage as compared to developed countries.⁹ India as developing countries face a dual burden of communicable and non-communicable diseases with shifting trend including hypertension, stroke and coronary artery disease. The primary aim of this study was to determine the prevalence of hypertension among young adults at tertiary care center as there is a lack of data regarding high blood pressure among young adults.

METHODS

A cross-sectional study of patients over the age of 18 years (18-26years) attending Medicine OPD at medical college Churu, Rajasthan. A total of 150 patients attended medicine OPD with in a time span of 6 months from jan. 2019 to july 2019 were included in study.

After obtaining permission from Ethical Committee and informed written consent of study population, the semi-structured questionnaires was administered and necessary physical examination also done.

All data collected was entered in Excel and analyzed by appropriate tests to analyze the relationship between different variables and hypertension.

Diagnostic criteria

Hypertension

A student was considered hypertensive if he/she had been previously diagnosed and/or on treatment OR if the systolic blood pressure was \geq 140 mm of mercury or diastolic blood pressure was \geq 90 mm of mercury at the time of measurement (JNC-VII criteria).⁷

Obesity

Waist hip ratio of >1 for males and >0.85 for females were designated as Truncal obesity while waist circumferences of ≥ 94 cm in males and ≥ 80 cm in females were designated as Central or Abdominal obesity.^{9,10}

RESULTS

Nearly 67% of the patients were between 18 to 21 years. The proportion of males (54.6%) and females (45.4%) was comparable. Hypertension was detected in 12 of the 150 patients (prevalence= 8 %), of which the majority were newly diagnosed (75%). The prevalence of hypertension among males were (9.75%) was higher as compared to females (5.88%) Table2. In addition, 32 % of the subjects were found to have blood pressures in the pre-hypertensive range (Figure 1). A higher prevalence was found among patients with history of smoking (55%) and alcohol intake (30.3%) as compared to prevalence among the remaining (Table 3).

Table: 1. Characteristics of the study participants

Age Groups	No.	%
18 – 21	100	67%
22 – 26	50	33%
Gender		
Male	82	54.6
Female	68	45.4
Religion		
Hindu	103	68.7
Muslim	37	24.6
Others	10	6.7

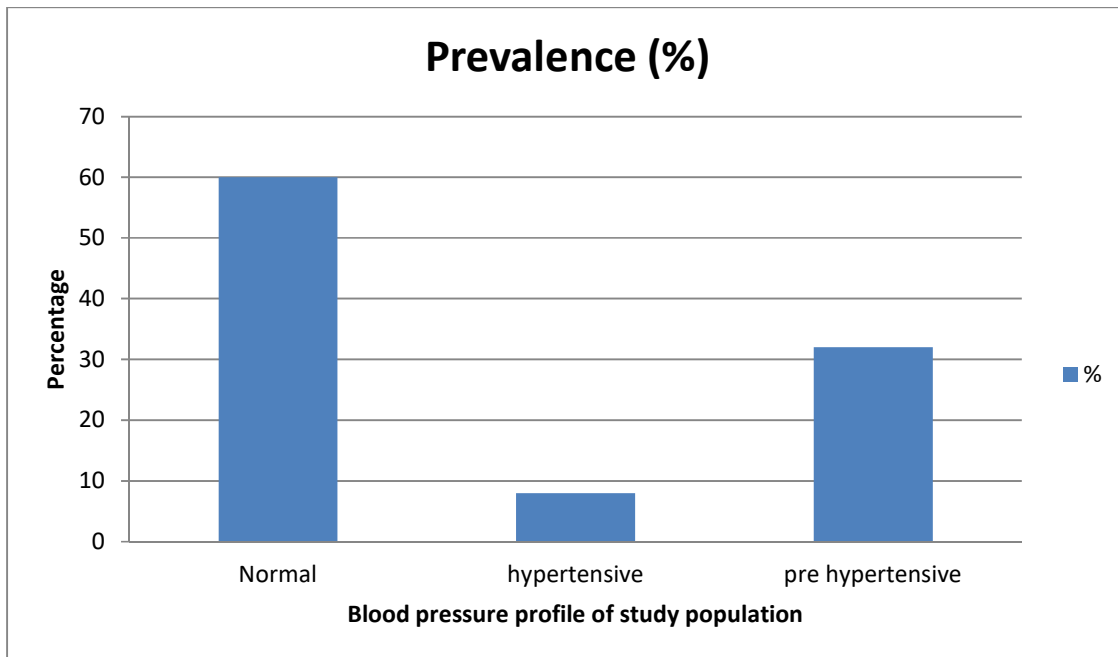
Table: 2. Prevalence of Hypertension

Gender	Examined	Hypertensive	%	P value
Male	82	8	9.75	0.615
Female	68	4	5.88	
Total	150	12	8	

Table: 3. History of smoking and Alcohol intake with Hypertension

H/O Smoking	Examined	Hypertensive	%	P value
Present	55	7	12.72	0.239
Absent	95	5	5.2	
H/O Alcohol	Examined	Hypertensive	%	P value
Present	50	7	14.0	0.152
Absent	100	5	5.0	

Graph 1. Blood pressure profile of study population



DISCUSSION

The persistence of raised blood pressure during childhood and adolescent period and its progression into adult hypertension has been observed in the past. High BP measurements at multiple times in adolescent age group are a predictor of adult hypertension.¹⁰ Therefore regular Blood pressure monitoring in young adults is recommended for the early detection and management of hypertension in early stage.

High Prevalence of increased blood pressure was found among the participants in this study. Similarly, Rosenthal J. et al (1989)¹¹ also found high prevalence in same age group. About 32% of study subjects was found to be pre-hypertensive, illustrating the necessity of monitoring blood pressure in young adults.

Earlier studies have depicted factors associated with development of hypertension in young adults. Relationships between alcohol consumption or smoking and hypertension were not found significant among the participants of our study.

CONCLUSION

High blood pressure has always been a major health hazard among young adults. Most of the cases remain undiagnosed in the initial stages. Pre-hypertensive cases require regular follow-up. Early identification plays important role since it leads to early management of hypertension thereby reducing complications, such as cardiovascular changes and end organ damage later in life. Further studies need to be conducted as there is lack of data on hypertension in the young adult population in order to formulate right preventive strategies at right time.

REFERENCES

1. GBD 2016 Risk Factors Collaborators. Global, regional, and national comparative risk assessment of 84 behavioral, environmental and occupational, and metabolic risks or clusters of risks, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet* 2017; 1345–422.
2. Gupta R, Xavier D Hypertension: the most important noncommunicable disease risk factor in India. *Indian Heart J.* 2018; 10.1016/j.ihj.2018.02.003.
3. World Health Organization. Global Status Report on Non- Communicable Diseases 2014. Geneva: World Health Organization.2014.
4. Farouzanfar MH, Ng M, Biryukov S, Roth GA, Alexander L, Liu P, et al. Global burden of hypertension and systolic blood pressure of at least 110 to 115 mm Hg, 1990-2015. *JAMA.* 2017;317:175–82.
5. NCD Risk Factor Collaboration (NCD-RiSC). Worldwide trends in blood pressure from 1975 to 2015: a pooled analysis of 1479 population-based measurement studies with 19.1 million participants. *Lancet.* 2017; 389:37–55.
6. Fuster V, O'Rourke AR, Walsh AR, Poole-Wilson P. Hurst's The Heart. 12th ed: Mc Graw Hill. Chp 2; p18-9.
7. Anchala R, Kannuri NK, Pant H, Khan H, Franco OH, Di Angelantonio E, et al. Hypertension in India: a systemic review and meta-analysis of Prevalence, awareness and control of hypertension. *J Hypertens.* 2014;32(6):1170-7.
8. Soudarssanane M, Mathanraj S, Sumanth M, Sahai A, Karthigeyan M. Tracking of blood pressure among adolescents and young adults in an urban slum of Puducherry. *Indian J Community Med.* 2008;33(2):107-12.
9. Reddy KS, Yusuf S. Emerging epidemic of cardiovascular disease in developing countries. *Circulation.* 1998;97:596-601.
10. Bao W, Threefoot SA, Srinivasan SR, Berenson GS. Essential hypertension predicted by tracking of elevated blood pressure from childhood to adulthood: The Bogalusa Heart Study. *Am J Hypertension.* 1995;8(7):657-65.
11. Rosenthal J. The epidemiology of blood pressure in young Mexican adults. *J Hypertens.* 1989;7(5):355-60.

Date of Submission: 15 June 2020

Date of Peer Review: 29 June 2020

Date of Acceptance: 02 Aug 2020

Date of Publishing: 5 September 2020

Author Declaration: Source of support: Nil, Conflict of interest: Nil

Ethics Committee Approval obtained for this study? YES

Was informed consent obtained from the subjects involved in the study? YES

For any images presented appropriate consent has been obtained from the subjects: NA

Plagiarism Checked: YES

Author work published under a Creative Commons Attribution 4.0 International License



Creative Commons Attribution
4.0 International license

CC BY 4.0

DOI: 10.36848/IJBAMR/2020/18215.55550