

Frequency of Resistant Hypertension in Hypertensive patients

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ABSTRACT

Aim: To determine the frequency of resistant hypertension in hypertensive patients.

Methods: This cross sectional study consisted of 172 hypertensive patients and conducted at BVH, Bahawalpur from January 2014 to June 2014. Hypertension was considered as resistant hypertension when hypertensive patients managed with a combination of at least three antihypertensive medications of different classes, one of which ideally is a diuretic.

Results: Mean age of the patients was 58.3±8.7. Out of 172 patients, males were 82(47.7%) and females were 90(52.3%) and resistant hypertension was found in 20% patients. Female patients were more affected than male patients.

Conclusion: Female hypertensive patients were victim of resistant hypertension as compared to male hypertensive patients. Age group of 56 to 70 years was the most affected age group.

Keywords: Resistant Hypertension, Obesity, Elderly, Pseudo resistance.

INTRODUCTION

Hypertension (HT) is an important public health problem worldwide.¹The prevalence of hypertension in the developing world is on the increase. Hypertension is increasingly becoming common and mainly driven by demographic and epidemiological transition and changing life style among the people. The prevalence of hypertension varies from 15-35% in urban adult population of Asia as compared to rural population. This prevalence has been reported to be 17.9% for Pakistan². It is also one of the most important modifiable risk factors for cardiovascular morbidity and mortality, especially for stroke (accounting for 51% of all stroke deaths worldwide), ischemic heart disease (45% of all deaths), chronic kidney disease (CKD), congestive heart failure, aortic aneurysms, and peripheral arterial disease³.

Blood pressure above goal (usually 140/90mmHg) despite combination of at least three optimally dosed antihypertensive medications of different classes, one of which ideally is a diuretic is defined as resistant hypertension⁴. Patients with resistant hypertension are more likely to have target organ damage and are at greater risk of stroke, myocardial infarction, heart failure, and/or chronic kidney disease compared with patients who have more easily controlled hypertension⁵. The high cardiovascular risk is attributable in part to long-standing, poorly controlled hypertension⁶ and to the coexistence of other cardiovascular risk factors, including left ventricular hypertrophy, obesity,

diabetes, hyperlipidemia, chronic kidney disease, and obstructive sleep apnea. Sarwar MS⁷ and colleagues are of the view that the exact prevalence of resistant hypertension is unknown which may vary from 5% to 50%. Another analysis of US National Health and Nutrition Examination Survey data suggests that among hypertensive adults treated with medications, approximately 13% have resistant hypertension⁸. As hypertension is a common problem and difficult to manage due to great morbidity and mortality associated with it. So a study is designed to find out the frequency of resistant hypertension in them. It may help us to decrease the morbidity and mortality of hypertension in our patients.

METHODOLOGY

This is a cross sectional study. Total 172 patients fulfilling the inclusion/exclusion criteria presenting at outpatient department BVH, Bahawalpur from January 2014 to June 2014 were included in this study. An approval was taken from institutional review committee and informed written consent was taken from every patient. All patients with hypertension, age range from 40-70 years either male or female were included in this study. Diagnosed cases of resistant hypertension (on history and medical record), patients already on treatment of resistant hypertension (on history & medical record) were excluded from the study. Hypertension is diagnosed when systolic blood pressure is consistently elevated (4-5 readings on different occasions) above 140mmHg or diastolic blood pressure is above 90mmHg and having 6 months history of hypertension (history and medical record). Hypertension was considered as resistant hypertension when hypertensive patients managed

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with a combination of at least 3 optimally dosed antihypertensive medications of different classes, one of which ideally is a diuretic but having above goal blood pressure i.e. 140/90mmHg (assessed on clinical examination, history and medical record) with patient's good compliance with medication. All the data was entered and analyzed in an SPSS Version 16.

RESULTS

Detail of results is given in tables 1, 2. Mean age of the patients was 58.3±8.7, mean Systolic blood pressure was 131.66±26.6 and mean diastolic blood pressure 83.9±14.6. Out of 172 patients, males were 82(47.7%) and females were 90(52.3%). Out 172 hypertensive patients resistant hypertension was found in 35(20%) patients. Stratification for age was done and two groups were made i.e., age group 40-55 years and age group 56-70 years. Age group 40-55 years consisted of 60(34.88%) patients and hypertension was found in 12(20%) patients. Age group 56-70 consisted of 112(65.12%) patients and resistant hypertension was found in 23(20.54%) patients. No association was found between age and resistant hypertension. Stratification for gender was done. Out of 82(47.67%) male patients, resistant hypertension was found in 10(12.2%) patients. Out of 90(52.335) female patients, resistant hypertension was found in 25(27.78%) patients. An association was found between gender and resistant hypertension.

Table 1: Age distribution

Age (yrs)	Resistant Hypertension		Total
	Yes	No	
40-55	12(20%)	48(80%)	60(34.88%)
56-70	23(20.54%)	89(79.46%)	112(65.12%)
Total	35(20.35%)	137(79.65%)	172(100%)

P value 1.00

Fig 1: Frequencies for Resistant Hypertension in hypertensive patients

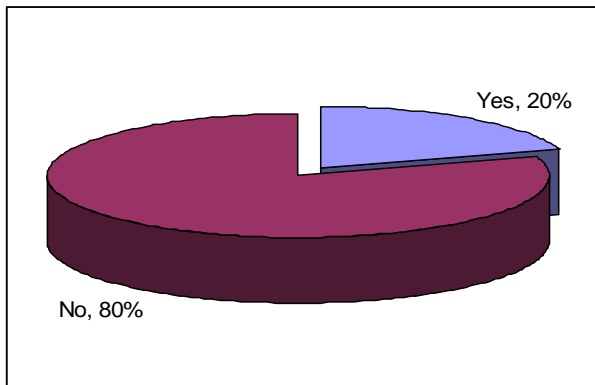


Table 2: Gender distribution

Gender	Resistant Hypertension		Total
	Yes	No	
Male	10(12.2%)	72(87.8%)	82(47.67%)
Female	25(27.78%)	65(72.22%)	90(52.33%)
Total	35(20.35%)	137(79.65%)	172(100%)

P value 0.01

DISCUSSION

Resistant hypertension is currently defined as uncontrolled blood pressure despite the use of optimal doses of three antihypertensive medications, of which one is a diuretic². Several factors have been identified as contributors to resistant hypertension. Poor patient adherence, physician inertia, inadequate doses or inappropriate combinations of antihypertensive drugs, excess alcohol intake, and volume overload are some of the most common causes of resistance. Secondary forms of hypertension represent another very important contributor to drug resistance. The list of secondary forms of hypertension is long and covers a large variety of conditions. Most of these conditions may result in resistance to pharmacologic therapy of hypertension⁹.

In our study, mean age of the patients was 58.3±8.7, mean Systolic blood pressure was 131.66±26.6 and mean diastolic blood pressure 83.9±14.6. Kumara WN et al¹⁰ also concluded the favorable results. Mean systolic and diastolic blood pressure reported by Knight EL¹¹ was also comparable with my study. In present study, resistant hypertension was found in 20% patients. In a cross-sectional study by Kumara WN et al¹⁰ conducted at Colombo, resistant hypertension was found in 19.1% patients. Their findings were comparable with my study. A study of 53530 hypertensive patients by Kumbhani DJ et al³, resistant hypertension was found in 12.7% patients. These findings were also in favor of my study.

CONCLUSION

Female hypertensive patients were victim of resistant hypertension as compare to male hypertensive patient. Age group of 56 to 70 years was the most affected age group.

REFERENCES

1. Erem C, Hacıhasanoglu A, Kocak M. Prevalence of prehypertension and hypertension and associated risk factors among Turkish adults: Trabzon Hypertension Study. *J Public Health* 2009;31(1):47-58.
2. Khan RMA, Saeed T, Awan SR, Ahmad M. Public Awareness about Hypertension: Findings of a Kidney Day. *PJMHS*.2008;2(4):159-61

3. Kumbhani DJ, Steg PG, Cannon CP. Resistant hypertension: a frequent and ominous finding among hypertensive patients with atherothrombosis. *Eur Heart J* 2013;16:1204-14.
4. Calhoun DA, Jones D, Textor S. Resistant hypertension: diagnosis, evaluation, and treatment. A scientific statement from the American Heart Association Professional Education Committee of the Council for High Blood Pressure Research. *Hypertension* 2008;51:1403-19.
5. Calhoun DA, Jones D, Textor S. Resistant hypertension: diagnosis, evaluation, and treatment. A scientific statement from the American Heart Association Professional Education Committee of the Council for High Blood Pressure Research. *Hypertension* 2008;51:1403-19.
6. Salles GF, Cardoso CR, Muxfeldt ES. Prognostic influence of office and ambulatory blood pressures in resistant hypertension. *Arch Intern Med* 2008;168:2340.
7. Sarwar MS, Islam MS, Al Baker SME, Hasnat A. Resistant hypertension: underlying causes and treatment. *Drug Res (Stuttg)*. 2013 May;63(5):217-23.
8. Persell SD. Prevalence of resistant hypertension in the United States, 2003-2008. *Hypertension* 2011;57:1076-80.
9. Wildman RP, Gu D, Muntner P. Alcohol intake and hypertension subtypes in Chinese men. *J Hypertens*. 2005;23:737-743.
10. Kumara WN, Perera T, Dissanayake M, Ranasinghe P, Constantine GR. Prevalence and risk factors for resistant hypertension among hypertensive patients from a developing country. *BMC research notes*. 2013;6(1):373.
11. Knight EL, Bohn RL, Wang PS. Predictors of uncontrolled hypertension in ambulatory patients. *Hypertension*. 2001 Oct;38(4):809-14.