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STUDY REGARDING RESISTANT HYPERTENSION IN PATIENTS PRESENTING AT TERTIARY CARE HOSPITAL

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ABSTRACT

Objective: To evaluate the resistant hypertension in hypertensive patients presenting at Tertiary care center. **Material and methods:** This cross sectional consisted on 150 hypertensive patients and conducted at Department of Medicine, Lahore General Hospital, Lahore from January 2021 to June 2021. Hypertension was considered as resistant hypertension when hypertensive patients managed with a combination of minimum 3 optimally dosed antihypertensive drugs of different classes, one of which ideally is a diuretic but having blood pressure 140/90mmHg (assessed on clinical examination, history and medical record) with patient's good compliance with medication. **Results:** Total 150 hypertensive patients were selected for this study. Mean age of the patients were 56.45 ± 9.63 years, mean Systolic blood pressure was 131.66 ± 26.62 and mean diastolic blood pressure 83.90 ± 14.6. Resistant hypertension rate was 39 (26%) in 150 hypertensive patients. **Conclusion:** Findings of this study revealed that female hypertensive patients were victim of resistant hypertension as compared to male hypertensive patient. Age group of 56 to 70 years were most affected age group.

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

INTRODUCTION

Globally hypertension (HT) is a one of the most common health problems.[1] The 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 Pakistan.[2] HTN is very important risk factor for heart disease.[3] Blood pressure (BP) above the goal (140/90 mm Hg) despite adherence to a combination of at least 3 optimally dosed anti-hypertensive drugs of different classes, one of which ideally is a diuretic is defined as Resistant hypertension.[4] Patients with resistant HTN are more likely to have target organ damage and are at greater risk of heart failure, stroke, myocardial infarction and/or chronic kidney disease (CKD) as compared with cases who have more easily controlled HTN.[5] The high cardiovascular risk is attributable in part to longstanding, poorly controlled hypertension.[6] and to the coexistence of other cardiovascular (CVD) risk factors, including diabetes mellitus, obesity, left ventricular hypertrophy (LVH), hyperlipidemia obstructive sleep apnea, and CKD. In one study by Sarwar et al reported that frequency of resistant HTN varies from 5-50%.[8] In another study reported frequency of resistant HTN as 13% in hypertensive cases.[9] 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.

MATERIAL AND METHODS

This is a cross sectional study was conducted at Department of Medicine, Lahore General Hospital, Lhore from January 2021 to June 2021. An approval was taken from institutional review committee and informed written consent was taken from every patient. Total 150 patients with hypertension, age range from 4070 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 140 mmHg or diastolic blood pressure is above 90 mmHg and having 6 months history of hypertension (history and medical record). Hypertension was considered as resistant hypertension when hypertensive patients managed 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. The hypertensive patients were evaluated for resistant hypertension. Frequency of resistant hypertension in hypertensive patients were recorded on a pre-designed proforma along with demographic data of the patients. All the data was entered and analyzed in an SPSS Version 16.

Quantitative variable like age and systolic/diastolic blood pressure was recorded and presented in the form of mean ± S.D. Qualitative data like gender, frequency of resistant hypertension in hypertensive patients was presented in the form of frequency and percentage. The data was stratified according to age and gender. Post stratification chi square test was applied to determine the significance. Value ≤0.05 was considered as significant.

RESULTS

Total 150 hypertensive patients were selected for this study. Mean age of the patients was 56.45 ± 9.63 years, mean Systolic blood pressure was 131.66 ± 26.62 and mean diastolic blood pressure 83.90 ± 14.6. Resistant hypertension rate was 39 (26%) in 150 hypertensive patients. (Fig. 1) Stratification in relation to age was done and two group was made. Age group 40-55 years and age group 56-70 years. In age group 40-55 years, out of 55 (36.67%) hypertensive patients, resistant hypertensive was noted in 14 (25.45%) patients. Total 95 (63.33%) patients belonged to age group 56-70 years and resistance hypertension was noted in 25 (26.32%) patients. Statistically insignificant (P = 1.00) association of age with resistance hypertension was noted. (Table 1) Hypertensive Male were 68 (45.33%) and hypertensive female were 82 (54.67%) and resistance hypertension was noted in 9 (13.24%) and 30 (36.59%) patients respectively. Significantly (P = 0.001) higher rate of resistant hypertension was noted in female patients as compared to male patients. (Table 2).

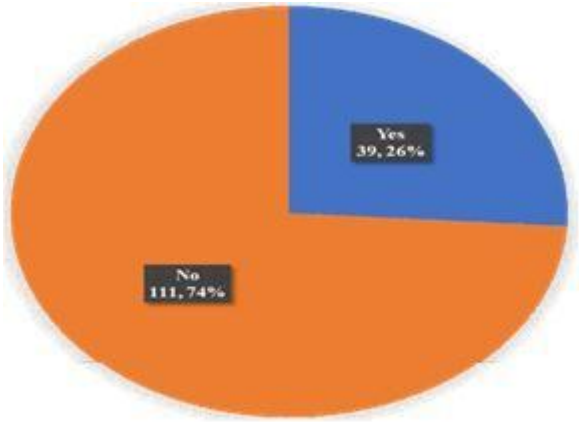

Figure 1: Frequency of hypertension

Table 1: Stratification for age.

Age	Resistant Hypertension		Total	P. value
	Yes (%)	No (%)		
40-55 Years	14 (25.45)	41 (74.55)	55 (36.67)	**1.00**
56-70 Years	25 (26.32)	70 (73.68)	95 (63.33)	
Total	39 (26)	111 (74)	150	

Tale 2: Stratification for gender.

Gender	Resistant Hypertension		Total	P. value
	Yes (%)	No (%)		
Male	9 (13.24)	59 (86.76)	68 (45.33)	0.001
Female	30 (36.59)	52 (63.41)	82 (54.67)	
Total	39 (26)	111 (74)	150	

DISCUSSION

About one billion individuals affected by HTN globally.[1] cardiovascular diseases significantly decreased after the introduction of antihypertensive medication. However, this medication failed to control the HTN in all the hypertensive individuals. BP goals are not attained in different anti-hypertensive therapies. This condition has been defined by many terms like difficult to treat, refractory HRN, difficult to control HTN; however, the term resistant hypertension seems to prevail.[1] Several factors have been identified as contributors to resistant hypertension. Poor patient adherence, physician inertia, inadequate doses or inappropriate combinations of many of the individuals

despite the simultaneous use of antihypertensive drugs, excess alcohol intake, and volume overload are some of the most common causes of resistance.[10] 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 hypertension.[10] The management of patients with resistant hypertension requires a gratifying combination of clinical acumen and common sense. An extensive workup of all patients with uncontrolled hypertension is scientifically unsound, is very costly and requires immense human and technical resources. Therefore, practicing physicians need to implement evidence-based medicine. The effective management of patients with resistant hypertension requires an appropriate combination of physiology and pharmacology, taking into account the unique characteristics of each case in order to tailor the therapeutic approach to the individual patient. [11-15] In our study mean age of the patients was 58.30 ± 8.72, mean Systolic blood pressure was 131.66 ± 26.62 and mean diastolic blood pressure 83.90 ± 14.6. Kumara WN et al,[16] also concluded the favorable results. Mean systolic and diastolic blood pressure reported by Knight EL,[17] 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 al,[16] 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 Kumbh DJ et al,[3] resistant hypertension was found in 12.7% patients. These findings were also in favor of my study.

CONCLUSION

Findings of this study revealed that female hypertensive patients were victim of resistant hypertension as compared to male hypertensive patient. Age group of 56 to 70 years were most affected age group.

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