Research Article

Frequency of Microalbuminuria and Dyslipidemia in Newly Diagnosed Hypertensive Patients

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ABSTRACT

Objectives: To determine the frequency of Microalbuminuria and Dyslipidemia in newly diagnosed Hypertensive patients.

Methodology: The study was carried out in patients coming through Medical OPD in Services Hospital, Lahore during 2014-15. We enrolled 200 cases of newly diagnosed hypertensive Patients between 30 - 50 years of either sex and having Normal renal function tests (S/Creatinine <0.5-1.5mg/dl) were included in the study. BP was measured using mercury column sphygmomanometer and Systolic and Diastolic Pressures was measured after patients remain seated comfortably for 5 min. Ist Krotokoff sound was taken as Systolic and Its disappearance as diastolic BP. Microalbuminuria was calculated by estimating Albumin in 24 hours urine sample collected in sterile bottles to determine frequency of Microalbuminuria in Hypertensive patients and after an overnight fast of 8 hours, Serum Fasting lipid profile was sent next morning to Services Hospita, Pathology laboratory to assess dyslipidemia in patients with or without Microalbuminuria.

Results: Most of the patients were recorded between 41-45 years of age i.e. 38%(n=76), 27.5%(n=55) were recorded between 46-50 years, 21%(n=42) were between 36-40 years and 13.5%(n=27) were recorded between 30-35 years of age, the age range was 30-50 years, mean+S.D was calculated as 38.65+3.43 years, 57.5%(n=117) were male and 42.5%(n=83) were female.Frequency of microalbuminuria in newly diagnosed hypertensive patients was recorded in 38%(n=76) while 62%(n=124) were not presented with microalbuminuria while dyslipidemia was recorded in 36.5%(n=73).

Conclusion: The frequency of microalbuminuria and dyslipidemia is higher among patients with newly diagnosed hypertension. So, it is recommended that every patient who present with newly developed hypertension, should be sort out for microalbuminuria and dyslipidemia.

Keywords: Newly diagnosed hypertension, frequency, microalbuminuria, dyslipidemia

INTRODUCTION

Hypertension is an important risk factor for cardiovascular disease and it becomes even more important when associated with other risk factors like hyperlipidemia.[1]The normal 24-hour urinary albumin excretion rate is of 20 mg. A persistent rate of 30 to 300 mg/day is called microalbuminuria and is related to a higher prevalence of cardiovascular disease.[2] According to one study Prevalence of microalbuminuria was 4.5% for normal BP, 6.3% for prehypertension (B.P 120-139 / 80-89mmHg),12.4% for stage 1 hypertension (B.P 140-159 /90-99mmHg), 25.3% for stage 2 hypertension (>160 / 100mmHg), and 11.3% among those with treated, controlled hypertension.[3] However according to one study it was 54.8%, higher than those reported in previous studies.[4] Microalbuminuria has been shown to be a marker of systemic endothelial dysfunction, considered to be an early stage of the atherosclerotic process.[5,6] Patients with essential

hypertension and microalbuminuria also have increased carotid artery wall thickness, left ventricular hypertrophy, non-fatal myocardial infarcts, and peripheral vascular disease, so most ischemic heart disease events occur in the subset of patients who have microalbuminuria.[7] Annual screening for microalbuminuria is simple, easy to perform, is recommended by international treatment guidelines and should be implemented in the general practice.[8]

Dyslipidemic hypertension increases mortality compared with hypertension only and dyslipidemia only, suggesting an important clinical entity.[9] In one study, Hypercholesterolemia was found in 27.9% of the HTN patients and Hypertriglyceridemia was seen in 66.3% HTN patients.[1]

Dyslipidemia was more common in newly diagnosed hypertensive patients with Microalbuminuria than in those without Microalbuminuria (67.7 vs. 23.1%).

In one study, it was found that microalbuminuria in newly diagnosed hypertensive patients is 32.3% and dyslipidemia 37.5%.[10] Low HDL-c and high TC were the most common types of dyslipidemia in hypertensive patients with Microalbuminuria.[10]

Regression of Microalbuminuria was associated with a 27% lower risk of Cardiovascular event, and development of Microalbuminuria with a 65% higher risk.[11]

This study was conduct on newly diagnosed Hypertensive patients is to screen them for Microalbuminuria as well as dyslipidemia, considering the fact that risk of dyslipidemia and Microalbuminuria and its associated Cardiovascular complications are more in hypertensive patients. SoIdentification of patients with preclinical renal damage should be encouraged in all newly diagnosed hypertensives. Our life style and eating habits are different from other part of the world, however, no study in Pakistan has been done before to assess the disease burden i.e., Dyslipidemia and Microalbuminuria in newly diagnosed hypertensive patients. So my study will generate magnitude for this very important but often neglected entity.

METHODOLOGY

The study was carried out in patients coming through Medical OPD in Services Hospital, Lahore. We enrolled 200 cases of newly diagnosed hypertensive Patients between 30 - 50 years of either sex and having Normal renal function tests (S/Creatinine <0.5-1.5mg/dl) were included in the study. We excluded known diabetics or Patients with Fasting blood sugar level >126mg/dl, Pregnant females, Patients taking lipid lowering drugs, Steroids, High dose Estrogen, Tricyclic antidepressants and History of Alcohol or cigarette smoking. Demographic information including name, age, and address was taken from each patient. BP was measured using mercury column sphygmomanometer and Systolic and Diastolic Pressures was measured after patients remain seated comfortably for 5 min. Ist Krotokoff sound was taken as Systolic and Its disappearance as diastolic BP.Microalbuminuria was calculated by estimating Albumin in 24 hours urine sample collected in sterile bottles to determine frequency of Microalbuminuria in Hypertensive patients and after an overnight fast of 8 hours, Serum Fasting lipid profile was sent next morning to Services Hospita, Pathology laboratory to assess dyslipidemia in patients with or without Microalbuminuria.

RESULTS

Age distribution of the patients was calculated and presented in Table No. 1, where most of the patients were recorded between 41-45 years of age i.e. 38%(n=76), 27.5%(n=55) were recorded between 46-50 years, 21%(n=42) were between 36-40 years and 13.5%(n=27) were recorded between 30-35 years of age, the age range was 30-50 years, mean+sd was calculated as 38.65+3.43.

Gender distribution of the patients reveals 57.5%(n=117) were male and 42.5%(n=83) were female.(Table No. 2).

Frequency of microalbuminuria in newly diagnosed hypertensive patients was recorded in 38%(n=76) while 62%(n=124) were not presented with microalbuminuria. (Table No. 3).

Table 1: Distribution of patients according to age (n=200)

Age(in years)	No. of patients	%
30-35	27	13.5
36-40	42	21
41-45	76	38
46-50	55	27.5
Total	200	100
Mean and s.d.	38.65+3.43	

Table 2: Distribution of Patients According to Gender (n=200)

Gender	No. of patients	%
Male	117	57.5
Female	83	42.5
Total	200	100

Table 3: Frequency Of Microalbuminuria In Newly Diagnosed Hypertensive Patients (n=200)

Present	No. of patients	%
Yes	76	38
No	124	62
Total	200	100

Frequency of dyslipidemia in newly diagnosed hypertensive patients was recorded in 36.5%(n=73) while 63.5%(n=127) were not presented with dyslipidemia. (Table No. 4).

Table 4: Frequency of Dyslipidemia In Newly Diagnosed Hypertensive Patients (n=200)

Present	No. of patients	%
Yes	73	36.5
No	127	63.5
Total	200	100

DISCUSSION

In our study we recorded most of the patients between 41-45 years of age i.e. 38%(n=76), 57.5%(n=117) were male and 42.5%(n=83) female, microalbuminuria was in 38%(n=76) while dyslipidemia was 36.5%(n=73).

Our findings reveal prevalence of Microalbuminuria in 38% of the patients is higher than what Akinsola et al[12] found in their study, it is still within the range of 4.7-40% documented in some other previous studies.[13-17] The variability in prevalence may be due to factors such as patient selection procedures, duration of hypertension, existence of prior antihypertensive treatment and method of estimation or detection of MA.[18-19]

The hypertensive patients with MA are having significantly higher mean serum TC, LDL cholesterol and AI and significantly lower mean serum HDL than their counterparts without Microalbuminuria. Microalbuminuria was also significantly and positively correlated with serum TC and LDL cholesterol and significantly and negatively correlated with serum HDL. This is consistent with the report of other studies that have been done before[20-22] Bigazzi et al[23] reported that dyslipidemia was associated with Microalbuminuria and adds to the cardiovascular risk in high BP.

Our results are further in agreement with the study conducted byBusari OA and workers,[10]who evaluate the association between Microalbuminuria and serum lipid abnormalities in nondiabetic adult Nigerians with hypertension and recorded 32.3% microalbuminuria and 37.50% dyslipidemia.

The results of the study reveals that newly diagnosed Hypertensive patients are at higher risk of Microalbuminuria as well as dyslipidemia, and this fact may be considered associated Cardiovascular complications which are more in hypertensive patients. SoIdentification of patients with preclinical renal damage should be encouraged in all newly diagnosed hypertensives.

CONCLUSION

The frequency of microalbuminuria and dyslipidemia is higher among patients with newly diagnosed hypertension.

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