

Research Article

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Use of Anti Hypertensive Drugs In Patients of Diabetes

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ABSTRACT

Hypertension is extremely prevalent in patients with diabetes. Our objective is to evaluate utilization pattern of antihypertensive agents among diabetic patients with hypertension. All the major classes of antihypertensives can be used in diabetic patients, but the beta-blockers with thiazide diuretics have metabolic side-effects which make them less appropriate as first line agents. The use of ACE inhibitors and calcium antagonists have better metabolic profiles and the latter reduce insulin resistance. Although ACE inhibitors and calcium antagonists are suitable as first line antihypertensives drugs used in diabetics evidence is lacking that these drugs reduce morbidity and mortality over and above that seen with other antihypertensives. Our study was data based comprising of 200 patients. Out of 200 patients 131 were with hypertension and 66 consisted of diabetes and hypertension, and 3 patients were with hypertension along with any other disease. The majority of patients were on multidrug regimens. According to our study a large proportion of patients received ACEIs and CCBs. Patterns of antihypertensive therapy were generally consistent with evidence- based practice guidelines.

Key-words: Hypertension, diabetes, multidrug regimen, morbidity, mortality, utilization pattern.

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INTRODUCTION

Hypertension (HTN) is one of the major chronic diseases resulting in high morbidity and mortality in the world population. Because of the associated morbidity and mortality hypertension is an important public health challenge. Hypertension is a disease of complex etiology and around 972 million affecting people worldwide. Prevalence of HTN in India is reported to vary from 4-15% in urban and 2-8% in rural population. It is estimated that the worldwide prevalence of hypertension would increase from 26.4% in 2000 to 29.2% in 2025¹. Hypertension is an important risk factor for cardiovascular disease and has become a major global burden on public health ². Therefore, blood pressure control needs to be considered in conjunction with the control of other concomitant cardiovascular risk factors. The prevalence of (HT) hypertension is high and the prescription containing antihypertensive drug is increasing day by day associated with other diseases such as diabetes, hyper-cholesterolemia, and cardiovascular disease. HTN and Diabetes Mellitus (DM) frequently coexist which increases with age. HTN is about twice as common in patients with DM than in those without (8%) ³. As shown by Helsinki's heart study, prevalence of HTN is 30% amongst NIDDM patients ⁴. Drug utilization studies which evaluate and analyze the drug therapy in HTN and HTN associated with DM is very essential from time to time to observe the prescribing attitude of physicians with the aim of rational use of drugs and to minimize the adverse drug reactions (ADRs). Hypertension could be a common downside in diabetic patients. Among those with sort one polygenic disorder, the incidence of cardiovascular disease rises from five % at ten years, to thirty three % at twenty years, and seventy % at forty years. There's an in depth relationship between high blood pressure and diabetic nephritic disease within these patients; the previous is comparatively rare in the absence of the latter. The vital sign generally begins to rise at intervals the conventional vary regarding 3 years when the onset of microalbuminuria. Ultimately, the incidence of cardiovascular disease is around fifteen to twenty five % all told patients with microalbuminuria and seventy five to eighty five % in those with public diabetic kidney disease. the danger of cardiovascular disease is highest in blacks, United Nations agency are at abundant bigger risk or nephropathy owing to diabetic kidney disease. Early treatment of hypertension is particularly important in diabetic patients both to prevent cardiovascular disease and to minimise progression of renal disease and diabetic retinopathy(DR). Among type 2 diabetics, the benefits of tight BP blood pressure control may be as great or greater than the benefit of strict glycaemic control. Initial therapy should include non-pharmacological treatment regimens, such as weight loss low salt diet, exercise and alcohol restriction, have been shown to lower BP ^{5,6}. Sodium restriction and avoidance of smoking. However all diabetics with blood pressures above 140/80 mmHg are considered to be at such high risk of cardiovascular complications that they should also be immediately begun on antihypertensive drug therapy. Intensive drug therapy is unequivocally protective. All diabetics patients should therefore have their blood pressure lowered to below 140/80 mmHg. In diabetic patients, combination treatment is commonly needed to effectively lower Blood pressure, so the discussion of which medication to be used first is not always important. However renin-angiotensin system blocker (RAS) should almost invariably be included because of the evidence of its superior protective effects. Large hypertension and heart failure trials have also reported an impact on diabetes development in favor of RAS blockade. So for persons with cardiovascular or kidney disease, including micro albuminuria, or with cardiovascular risk

factors in addition to diabetes and hypertension, an ACEI or ARB should be started. Antihypertensive treatment in diabetese Patients In the guidelines from ESH/European Society of Cardiology⁷ thiazide diuretics calcium channel blockers (CCBs), β -blockers, ACEIs and angiotensin II receptor blockers (ARBs) are recommended as suitable for initiation and maintenance of antihypertensive treatment either as monotherapy or in suitable combinations use . β -blockers have been downgraded in the British recommendation,¹⁵ and Joint National Committee on prevention/ detection/ Evaluation and Treatment of High Blood Pressure reports⁸ have given thiazide diuretics a prominent role based mainly on the results from the Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack (ALLHAT) Study^{9,10}. However, most patients require multiple drugs (often three to four different drugs) to achieve targets, particularly among women and minority populations¹¹. In the USA, it has been calculated that only 30% of the diabetic population reach the BP target (<130/80 mmHg).¹²

Goal of blood pressure reduction

A separate issue is the blood pressure goal, if a lower than usual pressure may be required to protect maximally against cardiovascular disease .The blood pressure of below 130/85 mmHg appears to be even more cost-effective. The risk of complications according to the systolic blood pressure(BP). Each 10mmHg reduction in systolic blood pressure was associated with a 12% risk reduction ($P<0.001$); the lowest risk occurred at a systolic pressure below 120mmHg. Benefits were noted for individual complications such as death related to diabetes, myocardial infarction (MI) and microvascular complications. The blood pressure to protect against cardiovascular disease in patients with diabetes should be below 130/85mmHg. (BP) Blood pressure reduction should be gradual if attainable the systolic pressures of 120mmHg may provide the greatest protection .Although the development of diabetes has been postulated to be a possible side effect of diuretic treatment, no study has been able to show definitely whether there is a causal relation between diuretics and diabetes. In addition, some studies have indicated an increased incidence of diabetes in patients taking blockers^{13, 14}. If the incidence of diabetes is increased in subjects taking different types of antihypertensive drugs the reason might be an association between the antihypertensive state and diabetes rather than between antihypertensive drugs and diabetes.

METHODOLOGY

We undertook a information study to guage treatment pattern of diabetic patients with cardiovascular disease. We tend to conduct a two months retrospective study at many hospitals and community –based clinics with a sample size of two hundred patients. We tend to used the computerised anamnesis to get diag- nostic data, demo- graphic data, very important signs, and prescription use. Patients were known for inclusion in the study were screened and classified as having cardiovascular disease and polygenic disorder supported a mix of diagnoses, clinical parameters, and prescription data.

RESULTS AND DISCUSSION

There were 200 patients who were included in our study. Out of 200 patients 131(65.5 %) were with hypertension and 66(33%) consisted of diabetes and hypertension, and 3 patients(2%) were with hypertension along with any other disease.131(65.5%) patients are identified with hypertension which

included 50 (38.16%) male and 81(61.83%) female patients. From our study population 66 patients were identified with hypertension and diabetes among them 34 (51.5%) were male and 32 (48.48%) were female. Most of the patients received ACEI (Angiotnesin Converting Enzyme Inhibitor) 40.29%, followed by CCB (Calcium Channel Blockers) 18.90%, B- blockers (beta Blockers) 17.90%, Diuretics 11.44%, ARBs (Angiotensin Receptor Blocker) 7.96 % and then alpha blockers 1.49%. The pattern of use of antihypertensive drugs in patients with hypertension along with diabetes comprised of ACEI being the highest i.e. 47.40%, then CCBs 14.81% ,diuretics 12.59%, ARBs and beta blockers both 11.85 % and least prescribed alpha blockers 1.48%.

We studied the pattern of antihypertensive use in patients with diabetes and hypertension. Our study revealed majority of treated patients in all drug regimens received ACEIs/ARBs. It was observed a large proportion of patients (84%) were being prescribed multidrug regimens pattern observed in several previous studies. In these regimens, the most common drug class prescribed was ACEI/ARB (55%) followed by CCBs (15%). Our findings indicate that medication use was mostly consistent with evidence-based practice guidelines to treat hypertension in patients with diabetes.

CONCLUSION

In conclusion, our findings suggest that in our diabetic hypertensive population, ACEI or ARB use was found in large proportion of treated patients. The majority (84%) of treated patients were on multidrug regimens.

Figure (1): Occurrence of disease

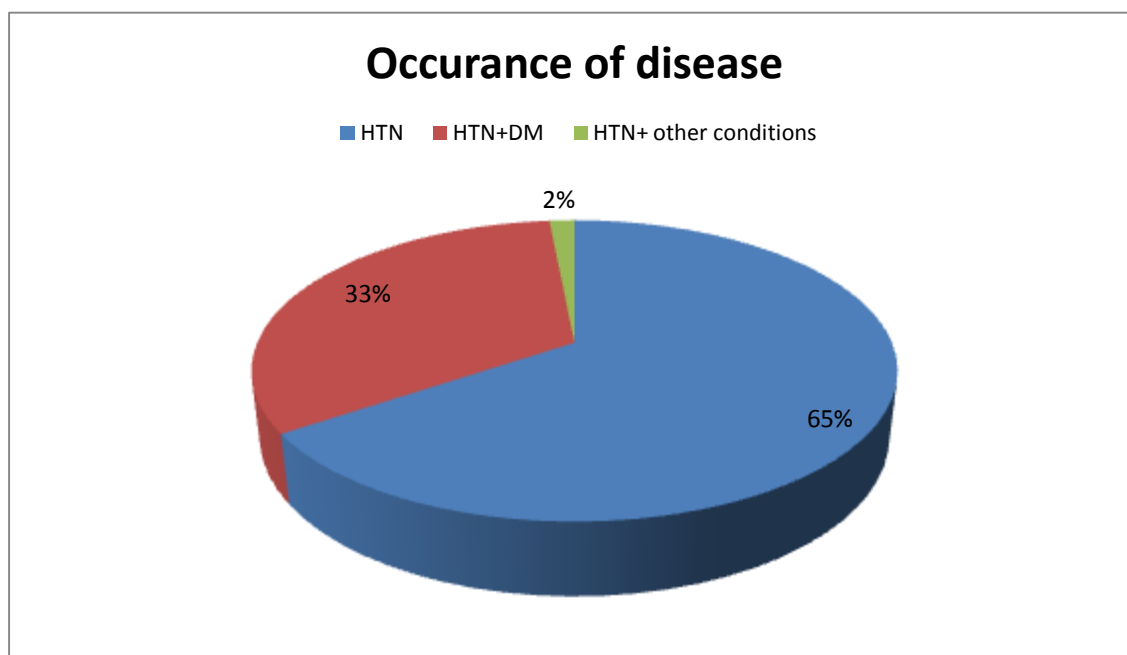


Figure (2): Hypertension classified as gender

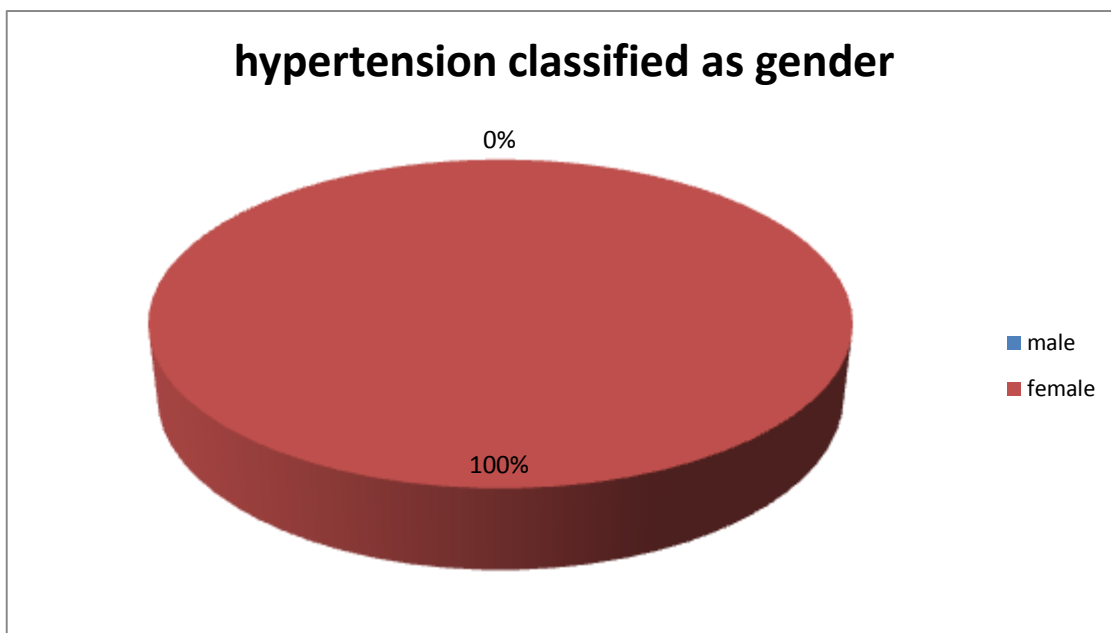


Figure (3): Hypertension with DM classified as gender

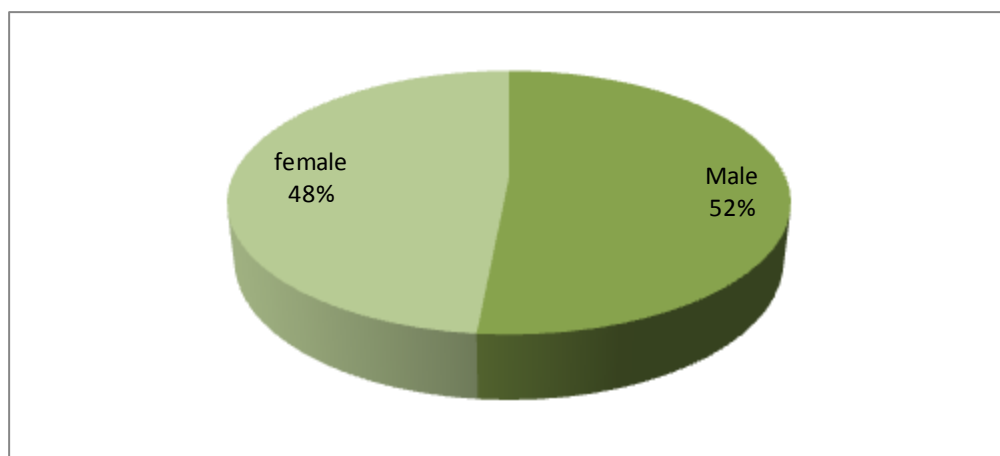


Figure (4): Use of Antihypertensive drugs with no other condition

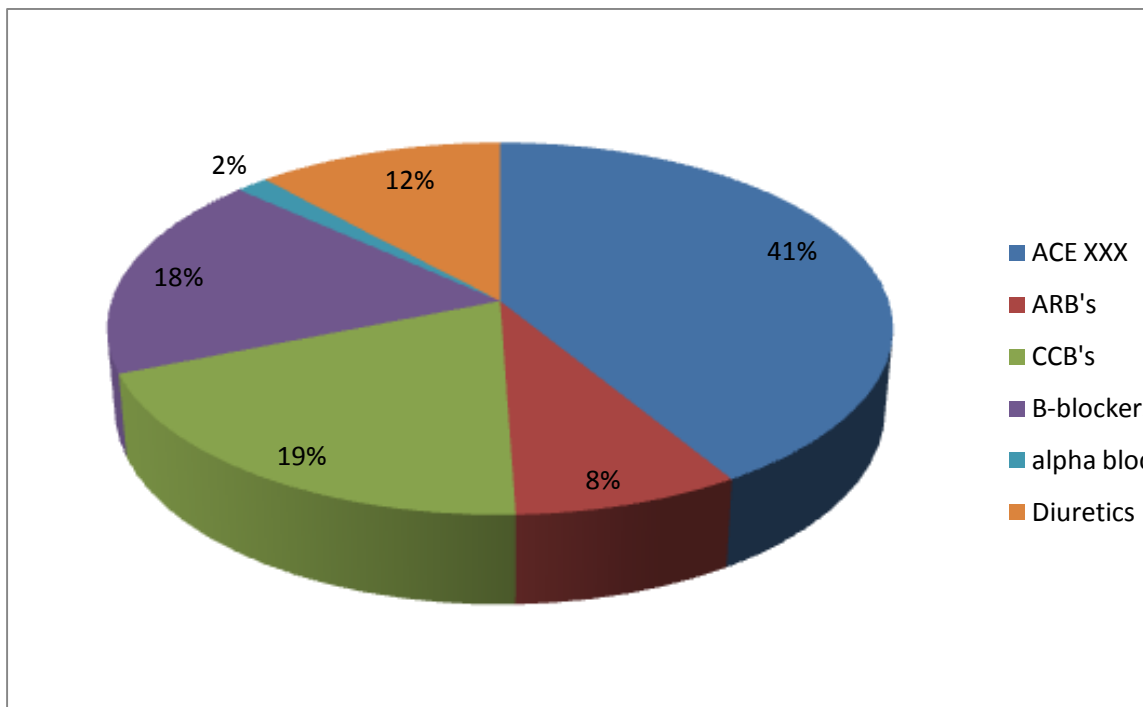
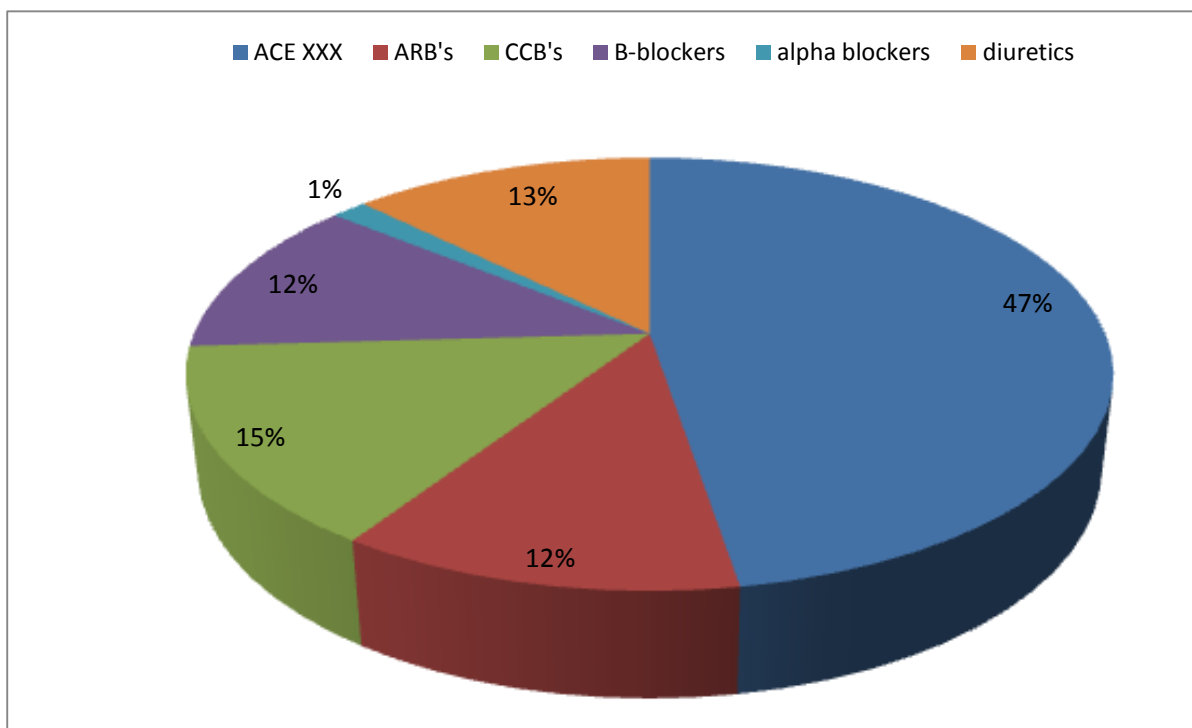


Figure (5): Use of antihypertensive with DM patient



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