Research Article

Recent trends in the prescribing pattern of anti-hypertensive drugs in a suburban teaching hospital

S T Balamurali[1*], S Sivakkumar[2]

[1]Associate Professor, Department of Pharmacology, [2]Professor, of Forensic Medicine, Madha Medical College, Kovur, Tamil Nadu, INDIA.
Email: kris_bala19@yahoo.com

Abstract

Background: Raised Blood pressure is an important modifiable risk factor for cardiovascular diseases, cerebrovascular diseases, Pheripheral vascular diseases etc. The prescribing pattern of drugs used for treating hypertension changes from time to time in response to changes in recommended guidelines and innovations of new drugs. Therefore it is necessary to find out the prescribing pattern of anti-hypertensive drugs by medical practitioners in current medical practice. **Aims and Objectives:** To evaluate the recent trends in prescribing pattern of anti-hypertensive drugs, the different combinations being prescribed and the commonly prescribed dosage of individual drugs. **Methodology:** This study was carried out for a 3 months' time period. The patients selected were in the age group of 25 to 70 years, diagnosed to have mild to severe systemic hypertension and on treatment, who were attending the OPD of General Medicine, without any other complications or co-morbid diseases. **Result and Conclusion:** The most common anti-hypertensive agents used were CA channel blockers 75 % (n=90) followed by β blockers (BBS) 30% (n=36), Angiotensin receptor blockers 25% (n=30), Angiotensin converting enzyme inhibitors 15 % (n=18) and Diuretics 15 % (n=18). Among those, most commonly prescribed drug for Monotherapy was calcium channel blockers (55%).Of the respondents 52.5 % were receiving at least 2 anti-hypertensive agents. Among them the most common agents used in combination were CA channel blockers + β blockers (40%) followed by AR blockers + CA channel blockers (20 %) and Diuretics + AR blockers (17.5 %). CA channel blockers were the most commonly used drug for combination therapy.

Keywords: Anti-hypertensive, Trends,Calciumchannel blockers, β blockers, AR blockers, ACE inhibitors

[*]**Address for Correspondence:**
Dr. S. T. Balamurali, Associate Professor, Department of Pharmacology, Madha Medical College Madha Medical College, Kovur, Tamil Nadu, INDIA.
Email: kris_bala19@yahoo.com

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INTRODUCTION

Elevated blood pressure is found to be the leading cause for death.[1] It is estimated to be around 50 % of the cardiovascular disease cases.[2] Many randomized controlled trials have shown that treatment of hypertension causes significant reduction in mortality and morbidity in cardiovascular deaths.[3,4] There is evidence that isolated systolic blood pressure increases the risk of stroke, coronary heart disease and chronic kidney disease.[5-8], Different group of drugs are now under use for treating systemic hypertension including Diuretics, β blockers (BBs), Calcium channel blockers (CA blockers), Angiotensin converting enzyme inhibitors (ACE inhibitors), Angiotensin receptor blockers (AR blockers), other anti hypertensives (e.g., anti-adrenergic agents and agents acting on arteriolar smooth muscles) and oral or transdermal organic nitrates. Although diagnosis of hypertension is considered easy and with efficient treatment measures, the effective maintenance and control of the therapeutic regimens related to systemic hypertension has been an hard risk.[9] Recently a number of newer and effective anti-hypertensive medications have come into practice. The prescribing pattern of drugs used for treating hypertension changes over time in response to changes in recommended guidelines and innovations in drug formulations. In addition, the classes of anti-hypertensive drugs used vary among the countries. Therefore it is necessary to find out the recent trends in prescribing anti-hypertensive medications in upcoming medical practice. In this study, we are going to evaluate the recent trends in prescribing anti-hypertensive drugs, the different combinations being prescribed and the commonly prescribed dosage of individual drugs in the out-patient department of General Medicine in a teaching hospital in the suburban area of Chennai.

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METHODOLOGY

Study design: Cross sectional observational study.

Sample size: 120 patients, including both male and female patients of age group 25 to 70 years diagnosed to have mild to severe systemic hypertension and on treatment who are attending the OPD of General Medicine without any other complications and co morbidities.

Study period

3 months. For this study we selected both male and female patients with age group of 25 to 70 years, diagnosed to have mild to severe systemic hypertension and on treatment, who are attending the OPD of General Medicine, without any other co-morbid conditions and complications. Patients who had hypertension associated with any co morbid conditions were excluded from this study. Institutional ethical committee approval was obtained to carry out this study. After getting proper written informed consent from the patients they were included in the study. Drugs prescribed were according to the World Health Organization (WHO) classification system. For the count of drugs that had anti-hypertensive effects, we included all drugs, and combinations of different types of drugs, within the following classes: diuretics, β-blockers (BBs), calcium channel blockers (CA Blockers), angiotensin-converting enzyme inhibitors (ACE Inhibitors), angiotensin receptor blockers (AR Blockers) and other antihypertensives (e.g., antiadrenergic agents and agents acting on arteriolar smooth muscle).

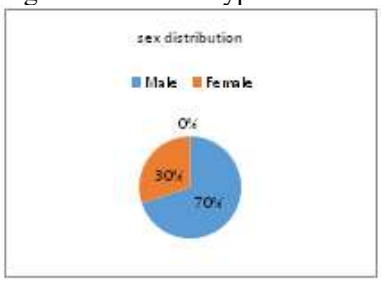
STATISTICAL ANALYSIS

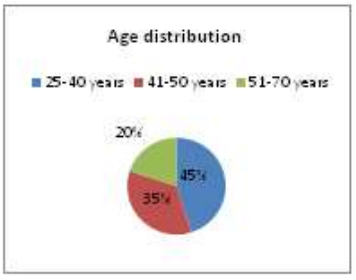
Data was analyzed using Epi info software program (version 3.4.3)

RESULTS

Patient Features

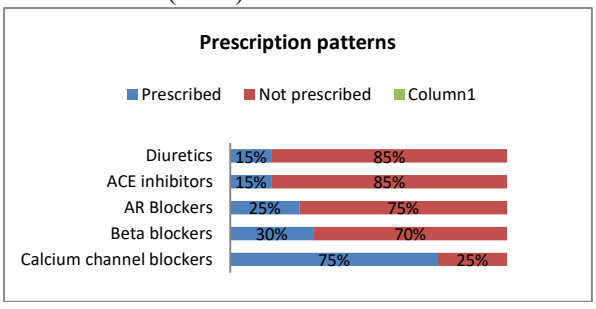
The respondents mean age was 55.66 (± 9.64 S.D) years. Among those, Males were about 70% and Females were around 30%.It was seen that the hypertension cases reported were common among the patients of age group 25-40 (45 %n=54) and among those, 41-50 years of age group people occupied (35% n=42). Thus, hypertension is most commonly reported among age group < 50 years.





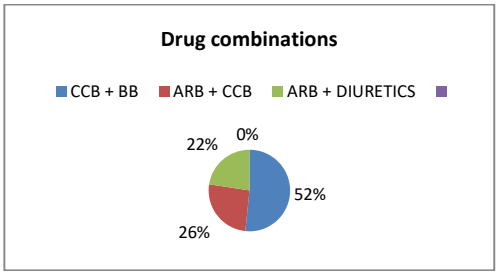
Anti-hypertensives Prescribed

The most common anti-hypertensive agents used were CA channel blockers 75 % (n=90) followed by β blockers (BBS) 30% (n=36), Angiotensin receptor blockers 25% (n=30), Angiotensin converting enzyme inhibitors 15 % (n=18) and Diuretics 15 % (n=18). Among those, most commonly prescribed drug for monotherapy was calcium channel blockers (55 %).



Combination Therapy

Of the respondents 52.5 % were receiving at least 2 anti-hypertensive agents. Among them the most common agents used in combination were CA channel blockers + β blockers (40%) followed by AR blockers + CA channel blockers (20 %) and Diuretics + AR blockers (17.5%). CA channel blockers were the most commonly used drug for combination therapy.



Dosage Prescription

The drugs and their most commonly prescribed dosage for hypertensive patients: Amlodipine 5mg, Atenolol 50mg, Enalapril 2.5mg, Losartan 50mg andHydrochlorothiazide 12.5mg.

Blood Pressure Control: Blood pressure control (<139/<89 mmHg) was achieved in 85% of the cases.

DISCUSSION

From this cross sectional observational study we were able to assess the attitude of physicians while prescribing anti-hypertensive agents. It was noted that the hypertension cases reported were common among the patients of age group 35-40. Among them Males were about 65% and Females were around 35%. The prescriptions were all rational and according to guidelines.[5] The most common anti-hypertensive agents used were CA channel blockers 75 % (n=90) followed by β blockers (BBS) 30% (n=36), Angiotensin receptor blockers 25% (n=30), Angiotensin converting enzyme inhibitors 15 % (n=18) and Diuretics 15 % (n=18). Among those, most commonly prescribed drug for monotherapy was calcium channel blockers (55%). The usage of AR blockers has been increasing and it is having an upper hand over ACE inhibitors in this study. Of the respondents 52.5 % were receiving at least 2 anti-hypertensive agents. Among them the most common agents used in combination were CA channel blockers + β blockers (40%) followed by AR blockers + CA channel blockers (20 %) and Diuretics + AR blockers (17.5 %). CA channel blockers were the most commonly used drug for combination therapy. The drugs and their most commonly prescribed dosage for hypertensive patients: Amlodipine 5mg, Atenolol 50mg, Enalapril 2.5mg, Losartan 50mg and Hydrochlorothiazide 12.5mg. Blood pressure control (<139/<89 mmHg) was achieved in 85% of the cases.

CONCLUSION

The present study represents the current prescribing trend for anti-hypertensive agents. The usage of two or more anti- hypertensive agents in combination has increased in the recent years in India as per the recent guidelines, for better control of blood pressure. The usage of AR blockers has been increasing and it is having an upper hand over ACE inhibitors in this study. Though the rate of usage of AR blockers and ACE inhibitors has been increasing, the CA channel blockers and β blockers top the list in the most commonly prescribed anti-hypertensive agents. The limitation of this study is that it has a small sample size and data is collected on OPD basis of one tertiary care hospital, hence it cannot represent an entire population. Therefore, further multi-centric studies are necessary to get further knowledge about the recent prescription patterns of anti-hypertensives for a better control of hypertension.

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