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Current Trends in Prescription Pattern of Antihypertensive Drugs in indoor Hypertensive Patients in A Tertiary Care Hospital Attached to A Government Medical College of Maharashtra: A Retrospective Study

Dr Pravin S. Rathod — Associate professor, Department of Pharmacology, SBH GMC, Dhule, Maharashtra

Dr. Praveenkumar T. Patil — Assistant Professor, Department of Pharmacology, SBH GMC, Dhule, Maharashtra

ABSTRACT

Background: Hypertension (HTN) is one of the major risk factor for cardiovascular and cerebrovascular disorders. Hence, the present study was carried out to study the current trends in prescribing pattern of antihypertensive drugs in indoor hypertensive patients in a tertiary care hospital attached to a government medical college of Maharashtra.

Methods: It was a retrospective observational study of nine months duration, conducted in a tertiary care hospital attached to SBH Government Medical College, Dhule. A total of 80 Patients who were admitted under medicine department and ICCU with hypertension were included in the study.

Results: The present study shows that, Female patients (58.75%) had higher prevalence of HTN as compared males (41.25%). Prevalence of HTN was higher in 56-65 years (43.75%) followed by 66-75 years age group (22.5%). The commonly prescribed antihypertensive drugs were calcium channel blockers mainly Nifedipine (70%) and Amlodipine (13.75%) followed by Beta blockers, Atenolol (43.75%) and Metoprolol (3.75%).

Conclusion: In the present study, most of the drugs were prescribed rationally according to the current treatment guidelines in hypertensive patients except the under use of Diuretics, ACEIs and ARBs in such patients. Study recommends educative interventions to the physicians to encourage rational prescription.

KEYWORDS : Hypertension, Rational Prescription, CCBs, Beta blockers

Introduction:

Hypertension is one of the leading causes of the global burden of disease. Hypertension is defined as elevated systolic blood pressure ≥140 mm Hg or diastolic blood pressure ≥90 mm Hg.[1] Epidemiological studies demonstrate that the prevalence of hypertension is increasing rapidly among Indian urban and rural populations. Prevalence of hypertension in India is reported to vary from 4% to 15% in urban and 2-8% in rural population.[2,3]

Hypertension is the most important modifiable risk factor for coronary heart disease, stroke, congestive heart failure, end-stage renal disease, and peripheral vascular disease.[4] If hypertension left untreated about 50% of the patients will die of coronary heart disease, 33% of cerebrovascular stroke and 10-15% of chronic renal failure. Therefore, it is important to control the elevated Blood Pressure (BP).[5] Lowering of systolic blood pressure (SBP) by 10-12 mm Hg and diastolic blood pressure (DBP) by 5-6 mm Hg confers relative risk reductions of 35-40% for stroke and 12-16% for coronary heart disease within 5 years of initiating treatment.[4]

Antihypertensive drug therapy has evolved in the past over many decades and now a number of drugs are available alone and in combinations for the control of blood pressure.[6] The choice of an antihypertensive drug is based on efficacy, safety, tolerability and cost. HTN can be treated medically and include several classes of drugs, angiotensin converting enzyme inhibitors (ACEIs), Angiotensin II receptor antagonists (angiotensin receptor-II blockers (ARBs)), Beta-blockers (BBs), diuretics, calcium channel blockers (CCBs), α-blockers, peripheral vasodilators and also by changing lifestyle factors include losing weight, quitting smoking, eating a healthy diet, reducing sodium intake, exercising regularly, and limiting alcohol consumption or both.[7,8]

Drugs play an important role in improving human health and promoting well-being. However, to produce the desired effect, they have to be safe and efficacious and have to be used rationally. Errors in prescription are not uncommon and could be due to ignorance or inadequate knowledge about the disease and pharmacology of the drugs prescribed.[9]

It is necessary to define prescribing pattern and to identify the irrational prescribing habits to drive a remedial message to the prescribers.[10] Hence, the present investigation was carried out to study the current trends in prescribing pattern of antihypertensive drugs in indoor hypertensive patients in a tertiary care hospital attached to a government medical college of Maharashtra.

Materials and Methods:

This was a retrospective observational study conducted in a tertiary care hospital attached to SBH Government Medical College, Dhule. The study duration was nine months from January 2015 to September 2015. A total of 80 Patients who were admitted under medicine department and ICCU with hypertension were included in the study. Undiagnosed patients and those with incomplete case record sheets were excluded from the study. Source of data was collected from patient's case sheets obtained from Medical Record Section. Patient's details such as name, age, sex, complaints, diagnosis, treatment details were collected. The study was approved by Institutional Ethics Committee. The data was computed using MS Excel and descriptive results were expressed as counts and percentages.

Results:

The results of the present study show that, Female patients (58.75%) had higher prevalence of HTN as compared to males (41.25%). Prevalence of HTN was higher in 56-65 years (43.75%) followed by 66-75 years age group (22.5%). Mean systolic blood pressure (SBP) was 168.6±40.49 mmHg and mean diastolic blood pressure was 97.44±21.89mmHg. The commonly prescribed antihypertensive drugs were calcium channel blockers mainly Nifedipine (70%) and Amlodipine (13.75%) followed by Beta blockers, Atenolol (43.75%) and Metoprolol (3.75%). Other than antihypertensive drugs, cardiovascular drugs (43.75%) were the commonly prescribed drugs to treat comorbidities followed by gastrointestinal (Anti-ulcer and antiemetic) (20.17%) and antibiotics (14.49%).

Discussion:

In the present study, Female patients (58.75%) had higher prevalence of HTN as compared males (41.25%). Most of the previous studies found higher prevalence in males than females. Careful literature review revealed that there is no consistency in the gender distribution of patients suffering from hypertension because some of studies have reported a higher percentage of hypertension in males and some of studies have reported a higher percentage hypertension in females.[3,11,12]

In our study, we found an overwhelming majority of the patients to be in the age group of 56-65 years (43.75%) and 66-75 years (22.5%) (Table No. 1). This is in concordance with previous studies by Raikar et. al. where commonly affected age group was 51-60 years (34%) and 61-70 years (26%). This implicates, the disease process to be linked to late middle age and the elderly age group.[9]

According JNC7 guidelines, which recommends that the choice of treatment for initial hypertension i.e., stage I (B.P>20/10 mm of Hg than the normal pressure) should be thiazides for most of the cases, ARBs, ACEIs, CCBs, BBs, alone or in combination may also be preferred, whereas for stage II(B.P>40/20 mm of Hg than the normal pressure) hypertension two drug combination, one as thiazides should be preferred.[13] But in the present study, the most commonly prescribed antihypertensive drugs were calcium channel blockers mainly Nifedipine (70%) and Amlodipine (13.75%) followed by Beta blockers, Atenolol (43.75%) and Metoprolol (3.75%). Most frequent use of CCBs and Beta blockers in this study may be because of their better tolerance and well established antihypertensive efficacy, cost-effectiveness and regular supply in the government set-up. The decreasing use of diuretics, which is also reflected in our study may be explained by physician misperceptions that diuretics are less effective, less safe medications for management of hypertension.[14] We also found that ACEIs or ARBs were least prescribed antihypertensive drugs in our setup, the reason could be lack of regular supply of these class of drugs in the government tertiary care hospital.

In the present study, Other than antihypertensive drugs, cardiovascular group of drugs (43.75%) were the most commonly prescribed drugs to treat comorbidities like angina pectoris, myocardial infarction, congestive cardiac failure followed by gastrointestinal (Anti-ulcer and antiemetic) (20.17%) and antibiotics (14.49%) for prevention and treatment of secondary infections.

Conclusion:

The present study concludes, that most of the drugs were prescribed rationally according to the current treatment guidelines in hypertensive patients except the under use of Diuretics, ACEIs and ARBs in such patients. This can be changed by organizing educative interventions to the physicians and by maintaining regular supply of these drugs in government tertiary care hospital. Despite the limitations, as it was a small sample size study conducted in a single centre, it was our sincere efforts to provide insight into the prescription pattern of indoor hypertensive patients in a government tertiary care hospital. Further studies from time to time are required in drug prescription pattern and standard treatment guidelines should be circulated among practicing physicians to encourage rational prescription.

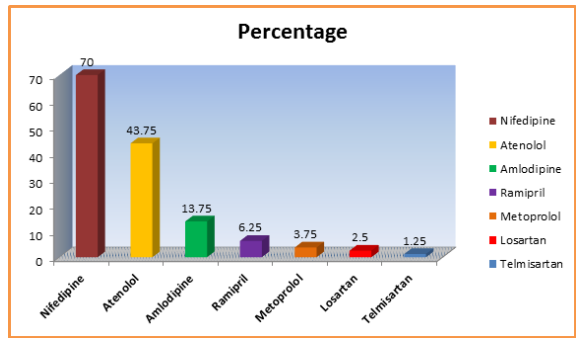
Table 1: Demographic characteristics of indoor hypertensive patients

n = 80

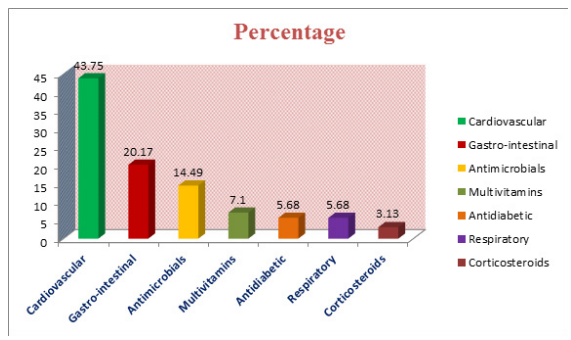
Characteristics		Number of Patients	Percentage (%)
Gender	Male	33	41.25
	Female	47	58.75
Age (Years)	26-35	05	6.25
	36-45	09	11.25
	46-55	09	11.25
	56-65	35	43.75
	66-75	18	22.5
	76-85	04	5
	Mean ± SD		60 ±12
	Range		28-87
SBP (mmHg)	Mean ±SD		168.6±40.49
	Range		100-260
DBP (mmHg)	Mean ±SD		97.44 ±21.89
	Range		60-190

n= number of patients

Graph 1: Prescription pattern of antihypertensive drugs in indoor patients of hypertension



Graph 2: Different categories of drugs prescribed in indoor hypertensive patients



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