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RESEARCH ARTICLE
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PATTERN OF ANTIHYPERTENSIVE DRUGS PRESCRIBED IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Background

A major cause of heart disease, stroke, and renal failure, hypertension is a major global health concern. Suboptimal adherence to treatment regimens and differences in prescribing patterns continue despite the availability of clinical guidelines and effective antihypertensive therapies. To encourage responsible drug use and enhance patient outcomes, tertiary care hospitals must assess prescription trends.

Aim: The purpose of this research was to examine how antihypertensive medication is prescribed in a tertiary care hospital and evaluate how well it follows accepted treatment protocols for managing hypertension.

Methodology: In a tertiary care hospital, a three-month retrospective observational study was carried out. To evaluate the pattern of antihypertensive medication use, 200 hypertensive patients' prescription records were examined. Patient demographics, prescribed medication classes, and therapy types (monotherapy or combination therapy) were among the data gathered.

Results: In this study of 200 patients, calcium channel blockers were the most often prescribed antihypertensive medications (35%), followed by beta-blockers (17.5%) and ACE inhibitors (25%). 35% of cases received combination therapy, whereas 65% of cases used monotherapy. Calcium channel blockers with ARBs and ACE inhibitors with diuretics were the most common drug combinations.

Conclusion: The study revealed the tertiary care hospital's prescribing practices mostly follow accepted treatment guidelines, with an emphasis on ACE inhibitors and calcium channel blockers. The results highlight the necessity of ongoing prescription practice monitoring to guarantee the prudent use of antihypertensive drugs and improve patient outcomes.

Keywords: Hypertension, Antihypertensive Drugs, Drug Prescription Audit.

INTRODUCTION

A major risk factor for heart disease, stroke, and renal failure, hypertension is a major global health concern. The World Health Organisation estimates that 1.28 billion adults between the ages of 30 and 79 worldwide suffer from hypertension, with a sizable fraction going undiagnosed or receiving insufficient treatment.[1] In order to lower morbidity and mortality, pharmacological intervention and lifestyle modification are the mainstays of effective management of hypertension.[2]

Calcium channel blockers, ACEIs (Angiotensin-Converting Enzyme Inhibitors), ARBs (Angiotensin Receptor Blockers), beta-blockers, and diuretics are some of the classes of medications that are used to treat hypertension. Age, comorbidities, and medication tolerance are among the patient-specific factors that influence the therapy choice.[3] Due to variations in physician preferences, medication availability, and adherence to clinical guidelines, prescribing practices differ between healthcare settings and geographical areas. To assess rational drug use, guarantee adherence to guidelines, and enhance treatment outcomes, it is crucial to comprehend the prescribing patterns of antihypertensive drugs in tertiary care hospitals.

The mainstay of managing hypertension to attain ideal blood pressure control and minimise negative consequences is still pharmacological treatment.[4] CCBs (Calcium Channel Blockers), ACEIs, ARBs, beta-blockers, and diuretics are among the different classes of antihypertensive medications that are available. Treatment guidelines advise customised therapy based on patient comorbidities and risk profiles, and each drug class has distinct indications and contraindications.[5,6] In many healthcare settings, irrational prescribing and poor adherence to treatment regimens persist despite the availability of effective medications and well-defined clinical guidelines.[7] To find practice gaps, encourage responsible drug use, and improve patient outcomes, it is essential to research the prescribing trends of antihypertensive medications in tertiary care hospitals. Additionally, it aids in tracking patterns over time and coordinating treatment strategies with recommendations based on evidence.[8]

In order to identify areas for intervention and gain important insights into current clinical practices, this study intends to analyse the patterns of antihypertensive medication prescriptions in a tertiary care hospital.

MATERIALS & METHODS

This was a retrospective observational study conducted to evaluate the prescribing patterns of antihypertensive drugs. The study was carried out in the Department of General Medicine, tertiary care hospital of South India.

The data was collected over a period of three months, from February 2024 to May 2024. A total of 200 hypertensive patients' prescription records were randomly selected and analysed.

Inclusion Criteria

- Adult patients (aged ≥18 years) diagnosed with hypertension.
- Patients who were prescribed at least one antihypertensive medication during the study period.

Exclusion Criteria

- Pregnant women.
- Patients with incomplete medical records.
- Patients with secondary hypertension.

Data Collection

Data were retrieved from hospital medical records and pharmacy databases. Information collected included patient demographics, antihypertensive drugs prescribed, drug classes, dosage, and whether monotherapy or combination therapy was used.

Data Analysis

The prescribing patterns were analysed using descriptive statistics, including frequency and percentage distributions of different drug classes and therapy types.

RESULTS

The study included 200 hypertensive patients in total. The demographic distribution revealed that most patients (60%) were between the ages of 51 and 70, with 52% of patients being men and 48% being women.

According to an analysis of prescriptions for antihypertensive medications, the most commonly prescribed class was CCBs, which were followed by beta-blockers and ACEIs. 35% of patients were receiving combination therapy, whereas 65% of patients were receiving monotherapy.

Drug Class	Number of Prescriptions	Percentage (%)
Calcium Channel Blockers (CCBs)	70	35
Angiotensin-Converting Enzyme Inhibitors (ACEIs)	50	25
Beta-Blockers	35	17.5
Angiotensin Receptor Blockers (ARBs)	20	10
Diuretics	15	7.5
Others (Alpha-blockers, Centrally Acting)	10	5
Total	**200**	**100**

Table 1: Prescribing Pattern of Antihypertensive Drugs (n = 200)

Therapy Type	Number of Patients	Percentage (%)
Monotherapy	130	65
Combination Therapy	70	35
Total	**200**	**100**

Table 2: Therapy Type among Patients

Drug Combination	Number of Patients	Percentage (%)
ACEI + Diuretic	25	35.7
CCB + ARB	18	25.7
Beta-blocker + Diuretic	12	17.1
ACEI + CCB	10	14.3
Others (Triple therapy etc.)	5	7.2

Table 3: Most Common Antihypertensive Drug Combinations (n = 70 on Combination Therapy)

Drug Class	Frequency	Percentage (%)
Calcium Channel Blockers (CCBs)	70	35
Angiotensin Converting Enzyme Inhibitors (ACEIs)	50	25
Beta-Blockers	35	17.5
Angiotensin Receptor Blockers (ARBs)	20	10
Diuretics	15	7.5
Others (Alpha-blockers, Centrally Acting)	10	5

Table 4: Frequency of Antihypertensive Drug Classes Prescribed (n = 200)

DISCUSSION

With a sample size of 200 patients, this study assessed the antihypertensive medication prescribing trends in a tertiary care hospital over a three-month period. According to the demographic data, patients between the ages of 51 and 70 had the highest prevalence of hypertension, which is in line with global trends that show the prevalence of hypertension rising with age.[9] The almost equal

distribution of genders is consistent with other research that indicates there is no discernible gender bias in the prevalence of hypertension.[10]

The most commonly prescribed antihypertensive class was CCBs (35%), followed by beta-blockers (17.5%) and ACEIs (25%). Because of their effectiveness and tolerability profile, particularly in older populations, CCBs were also reported as the preferred first-line agents in similar settings.[11,12] The recommendation for ACEIs is in line with guidelines that emphasise their use in patients with diabetes and chronic kidney disease, among other comorbid conditions.[13]

In patients with mild to moderate hypertension or good blood pressure control, monotherapy was the most common treatment, accounting for 65% of patients. In line with current treatment guidelines that support combination therapy for improved control and fewer side effects, combination therapy was utilised in 35% of patients and was more prevalent in those who needed stricter control or had multiple comorbidities. ACEI plus diuretic and CCB plus ARB were the most frequently seen drug combinations. Clinical guidelines recommend such combinations to reduce blood pressure additively while minimising side effects.[14] The comparatively low use of triple therapy, however, raises the possibility of either underusing more aggressive treatment approaches or good control with fewer medications. Overall, this tertiary care hospital's prescribing practices show strong adherence to accepted guidelines for managing hypertension, encouraging sensible medication use. To further optimise treatment and enhance patient outcomes, regular prescription audits and physician education may be necessary.

CONCLUSION

According to current clinical guidelines, this study examines the antihypertensive medication prescribing patterns in a tertiary care hospital and finds that ACE inhibitors and calcium channel blockers are most commonly used. While most patients were treated with monotherapy, a sizable fraction needed combination therapy in order to attain the best possible blood pressure control. In the hospital setting, these results imply logical prescription practices and adherence to evidence-based treatment protocols. To further enhance the use of antihypertensive medications and patient outcomes, regular prescription audits and ongoing training for medical professionals are advised.

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