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Original Research Article

Study of Prescription Pattern of Antihypertensive Drugs in a Tertiary Care Hospital

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Abstract

Background: Hypertension is listed globally as a significant public health problem, hypertension results in cardiovascular burden and death. Carburation and management of blood pressure require the proper administration of such drugs as antihypertensive agents. The purpose of the present research will be to investigate the prescription approach of antihypertensive medication in a tertiary care hospital setup**.**

Objectives: The objectives of the study was, yo assess the type / forms of antihypertensive drugs used in a tertiary health institution. Another objective of the planned study was to determine the relationship between demographic aspects of patients and the choice of oral antihypertensive medications.

Methods: The current work is a cross-sectional study done in one of the tertiary care hospitals, to evaluate the prescription pattern of outpatient prescriptions for antihypertensive medication within 12 months. Patient records included socio-demographics, medication information including the name of drugs, dose, and drug classifications were retrieved.

Results: The prescriptions of the selected healthcare entities were reviewed making a total of 500 prescriptions.: ACE inhibitors were the most prescribed drugs (35%) compared to CCBs (28%) and beta-blockers (22%). Of the treated patients, 60% were on combination therapy. Specifically, the A, B and C options identified ACE inhibitors as the most commonly prescribed antihypertensive to older patients (age >60) and those with complications such as diabetes.

Conclusion: The study also shows that ACE inhibitors and CCBs are among the frequent drugs used to address hypertension. The prescription pattern is consistent with current guidelines, but there is a possibility to enhance individualised therapy.

Keywords: antihypertensive drugs, prescription pattern, tertiary hospital, ACE inhibitors and calcium channel blockers and Hypertension.

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Introduction

Blood pressure (BP) is high in hypertension and is considered one of the most chronic diseases within the global community. It remains one of the largest modifiable risk factors for cardiovascular diseases that include coronary artery disease, stroke, heart failure, and kidney failure making it a major public health problem. Thus, it is estimated that around 1.13 billion International people have hypertension, and the majority of them live in LMICs, the WHO says. This condition accounts for over 9 million deaths annually, thus; there is a need to better manage the condition [1].

Hypertension control is mainly carried out through the prescription of drugs alongside appropriate changes in diet and physical activity. Hypotensive agents are medicines used to lower blood pressure and avert danger signs of developing hypertensive complications. These drugs are being chosen based on the degree of hypertension, age, overall health status, and whether a patient has or is developing damage to organs affected by high blood pressure. They are diuretics, beta-beta blockers, calcium channel inhibitors, ACE inhibitors, ARBs, alpha blockers and direct renin inhibitors. In clinical practice combination therapy is applied if with single- agent therapy BP is still too high [2].

Patients' prescription disparities of antihypertensive agents are shaped by the physicians' preferences, access to the available drugs, and the patient population in the regions and various healthcare chains. Investigations have revealed that in some states, ACE inhibitors and diuretics are popular while in other states calcium channel blockers and beta-blockers are known to be used often [3]. The therapy chosen should be in accordance with present general therapeutic recommendations for the kind of therapy that provides patients with the most individualized schedule and a rational balance of blood pressure regulation with disadvantages [4].

Tertiary care hospitals, which offer complicated diagnosing and treating services, can be considered essential contexts for identifying patterns of prescription of antihypertensive medications. These institutions serve patients with hypertensive illness varying severity and with different concomitant diseases [5]. India is one of the countries in the world where its burden of hypertension is on the rise and therefore analysis of prescription patterns in tertiary care settings can be used to explore the quality of hypertension management and for pin pointing areas of improvement [6]. The aim of this study is to analyze how prescribers chose between the different antihypertensive drugs in a tertiary care hospital and what attributes determined the selection. In reviewing this data, the research intends to present current approaches and make suggestion towards the guideline of prescription and hypertension management.

Aim and Objectives

Aim: The specific objective in the present study conducted in a tertiary care hospital was to find out the pattern of prescription of antihypertensive drugs.

Objectives:

1. To identify the most frequently used antihypertensive agents.

2. In order to examine the empirical question of whether patient characteristics influence antihypertensive medication prescription.

Material and Method

The current study was a cross-sectional study done over a period of 6 months in a tertiary care hospital. Information was gathered from prescriptions of outpatients with hypertensive diseases. In total, the prescriptions of 500 patients were considered. From the patient's records, age, gender, comorbidities and the drug name, drug class and the dose where recorded. The study participants included all consenting, adult patients with hypertension attending the outpatient department within the study period. The exclusion criteria used were; those with secondary hypertension, those receiving antihypertensive therapy for less than three months and patients who had incomplete prescription data.

Results

Table 1: Frequency Distribution of Antihypertensive Drugs Prescribed

Drug Class	Frequency (%)
ACE Inhibitors	175 (35%)
Calcium Channel Blockers	140 (28%)
Beta-Blockers	110 (22%)
Diuretics	45 (9%)
ARBs	30 (6%)

Table 2: Patient Demographics and Drug Prescription Correlation

Age Group (Years)	ACE Inhibitors (%)	CCBs (%)	Beta-blockers (%)
40-50	30	40	20
51-60	40	30	20
>60	50	20	15

Description

Table 1 shows the most frequently prescribed antihypertensive classes, with ACE inhibitors being the most common. Table 2 reveals the correlation between patient age and the type of antihypertensive drug prescribed. The older age group (>60 years) primarily received ACE inhibitors, while younger patients were more likely to be prescribed CCBs.

Discussion

Various trends in antihypertensive drug prescription were observed from the present study carried on a tertiary care hospital. In this regard, the utilised antihypertensive drugs included ACE inhibitors and CCBs — both are proven to have significant therapeutic effectiveness and optimal safety in treating hypertension [7]. Angiotensin-converting enzyme inhibitors, enalapril and Ramipril were commonly prescribed because they are associated with reduced cardiovascular events, better renal outcomes especially among diabetic or CKD patients [2]. Likewise, CCBs such as amlodipine were favored because of their clinical role in controlling high blood pressure without causing serious side effects to sustain long term [8].

The authors also pointed out that combination therapies were used more often in this study than in previous investigations. This is in line with the current treatment model, which involves an added use of more than one class of antihypertensive agents to enhance pressures control particularly in patients with severe or resistant hypertension [9]. The approach also helps to increase the therapeutic efficacy and additionally, raises the level of patient compliance due to the decrease of the pill number [10].

The result of the present study supports other works done in other tertiary care facilities across the globe where ACE inhibitors and CCBs are still the preferred drugs in controlling hypertension. Nevertheless, further work is required to enhance the prescription process by means of periodic evaluation against best practices and adherence with evidence-based medicine principles in order to prevent or reduce cases of multiple medication prescriptions and potential adverse drug reactions.

Conclusion

In summary, this work aims to present the overview of the chosen antihypertensive drug prescriptions in the analysed tertiary healthcare facility. The results reveal that the ACE inhibitors and calcium channel blocker are the commonly prescribed drugs. This work emphasizes that unique clinics should be applied to patients, especially elderly and with comorbidities, and an individual treatment regimen. Better management of hypertension will be realised if prescription practices are done in conformity with clinical recommendations and if patients' needs are considered when prescribed with medications required in controlling the cardiovascular diseases.

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