

## Research Article



## Drug Utilization Pattern of Antihypertensive at a Secondary Health Care Hospital in Dharmapuri District, Tamilnadu

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### ABSTRACT

**Background:** Hypertension is the most common alterable risk factor for cardiovascular disease, stroke and renal failure. Drug utilization study facilitate the rational use of drugs and provides an in sign into the use of drugs pattern, as such the present study. Was conducted to evaluate the prescribing patterns of antihypertensive drugs and to observe the disparity between the actual practices and recommended for pharmacological treatments of hypertension at a secondary care hospital.

**Methods:** Retrospective study conducted over a period of six months. Case records of hypertension cases from January 2021 to July 2022 cases reported to the department of medicine.

**Results:** Total 200 patients of hypertension cases included in this study, 53 % were male and 37 % were females with a large portion of hypertension patients 41% in the age group above 70 years. During study period, it was observed that hypertensive patients 62 (31%) more due to smoking. Diabetes mellitus 41 (21%) and angina 27 (14%) were the most common comorbidities in our hypertensive patients. Prevalence of dual drug combination was the highest 46% followed by monotherapy 34%. , most frequently prescribed drug class was calcium channel blockers for 30 (15 %) hypertensive patients prescribed class in monotherapy, in dual therapy, combinations of antihypertensive drugs were prescribed among which the combination of CCBs with ARBs was prescribed the most 14.5%, whereas prescription of combination of CCB, Beta blocker and Diuretics was prescribed the most 7.5% in triple drug therapy.

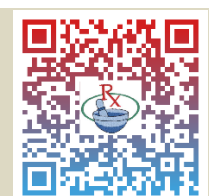
**Conclusion:** This present study provides an overview on drug utilization of antihypertensive in one of the secondary care hospitals in tamilnadu. In this study, the majority of medications used as monotherapy are calcium channel blockers. The most often given medications for combination therapy include calcium channel blockers with beta blockers and diuretics with Angiotensin receptor blockers.

**Keywords:** Hypertensive drugs, Drug utilization pattern, calcium channel blockers.

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### INTRODUCTION

Hypertension (HTN) affect ground 1 billion individuals worldwide and about 234 million population are effected by the same in India by 2019<sup>1,2</sup>. Hypertension is associated with an increased chance of various disease such as Heart failure, myocardial infarction, renal failure, stroke and retinopathy. Raised blood pressure is responsible for almost 7.5 million death or 12.8% of the total yearly deaths<sup>3,4</sup>. Globally according to the WHO are estimated 1.15 million individuals are predicated to the HTN by 2025<sup>5,6</sup>. In Indian scenario, the currency of HTN is increasing at an alarming rate<sup>7,8</sup>.

Through a population based study, cross sectional study, the overall Indian prevalence at hypertension was found to be 25.3%<sup>9</sup>.

The main objectives of antihypertensive treatment was to lower morbidity and mortality associated with hypertension<sup>10</sup>. clinical evidence show that using antihypertensive medicine significantly lower the risk of many problem linked to hypertension<sup>11</sup>. several classes of hypertensive drug such as beta blockers, diuretics, angiotensin converting enzyme inhibitors, calcium channel blockers, angiotensin receptor blockers are prescribed alone are in combined method of treating hypertension<sup>10,12</sup>. For treatment of HTN, various guidelines are available such as American society at hypertension /interation society at hypertension, national Institute for health and care excellence, European society at cardiology and Japanese society at hypertension guidelines<sup>13</sup>.

Drug utilization is the marketing, distribution, prescribing, and use at drug in a society with a focus on the social and medical affects that emerge from this use ,Given the



limited resources the developing nation have available and /or allocated for healthcare, Judicious drug prescribing is crucial. Therefore, in developing country, rational drug prescription becomes crucial for making the best, use at monies allotted<sup>13</sup>. This current study was evaluate the current trends in prescription of antihypertensive drugs in a secondary care hospital.

## MATERIALS AND METHODS

The present study was a retrospective study conducted over a period of six months. Case records of hypertension cases from January 2022 to June 2022 cases reported to the department of medicine. The study was approved by the institutional ethical review committee.

### Statistical analysis

The computer's database was filled with the data that were obtained, and Ms. Excel software was used to perform a frequency analysis.

## RESULT AND DISCUSSION

Total 200 patients of hypertension cases included in this study, 53 % were male and 37 % were females with a large portion of hypertension patients 41% in the age group above 70 years. During study period, it was observed that hypertensive patients 62 (31%) more due to smoking, followed by alcohol 51 (25%), alcohol and smoker 41 (21%), obese 21(11%), age above 50 years 16 (8%) and family history 9 (4%). Similar results were observed by Akici et al. Diabetes mellitus 41 (21%) and angina 27 (14%) were the most common comorbidities in our hypertensive patients. Table no 2

**Table 1:** Patient Demographic Characteristics

Characteristic	No.(%) of Patients`
<b>Sex</b>	
Male	53
Female	47
<b>Age</b>	
20-39	26
40-49	33
Above 70	41

During study period, it was observed that hypertension patients 62 (31%) more due to smoking, followed by alcohol 51 (25%), alcohol and smoker 41 (21%), obese 21(11%), age above 50 years 16 (8%) and family history 9 (4%). Similar results were observed by Akici et al<sup>16</sup>.

Total 200 prescriptions in hypertension patients were evaluated. It was observed that only 34 % patients received single antihypertensive drugs whereas most of the patients were on multiple therapy regimen 66%. The results revealed that prevalence of dual drug therapy (46%) was the highest followed by monotherapy. Triple drug therapy was prescribed in 12% patients whereas only

8% patients received four drug therapies as shown in table 3. Similar results were observed by Mishra PS et al <sup>15</sup>.

**Table 2:** Distribution of Co Morbidity

S.no	Co Morbidity	Number of patients	Percentage (%)
1	Diabetic Mellitus	41	21
2	Seizure	8	4
3	Stroke	19	9
4	CHF	25	13
5	UTI	17	8
6	Ulcer	20	10
7	Angina	27	14
8	Asthma/COPD	18	9
9	MI	10	5
10	Anaemia	15	7

**Table 3:** Distribution of Drug Therapy

Drug Therapy	Number of patients	Percentage (%)
Monotherapy	67	34
Dual therapy	92	46
Triple therapy	24	12
Poly Therapy	17	8

**Table 4:** Distribution of Drug Utilization pattern of Different Antihypertensive Drug

Types of Therapy	Treatment	Number of patients use antihypertensive drug	Percentage (%)
Mono Therapy	ACE Inhibitor	16	8
	Beta blocker	18	9
	Calcium channel blocker	30	15
	Alpha blocker	4	2
	Diuretics	14	7
	ARB	27	13.5
Dual Therapy	CCB + ARB	29	14.5
	CCB + Diuretics	9	4.5
	ARB + Diuretics	7	3.5
Triple therapy	CCB + `Beta blocker	22	11
	CCB + `Beta blocker + Diuretics	15	7.5
	CCB + ACE + Diuretics	9	4.5



In our study, among the monotherapy, most frequently prescribed drug class was calcium channel blockers for 30 (15 %) hypertensive patients. Followed by ARBs 27 (13.5%) patients, Beta blockers for 18 (9%) hypertensive patients, ACE Inhibitor 16 (8%) Patients, Diuretics 14 (7%) patients, and only 4 (2%) patients received alpha blockers drug. Table 4.

In present study, four different dual drug combinations of antihypertensive drugs were prescribed among which the combination of CCBs with ARBs was prescribed the most 14.5%. The utilization of other dual drug combinations was comparatively less. Table 4.

In triple drug combinations, prescription of combination of CCB, Beta blocker and Diuretics was prescribed the most 7.5%. The utilization of other triple drug combinations was comparatively less. However, only 2% patients received combination of poly drug therapy antihypertensive drugs Table 4.

## CONCLUSION

This present study provides an overview on drug utilization of antihypertensive in one of the secondary care hospitals in tamilnadu. In this study, the majority of medications used as monotherapy are calcium channel blockers. The most often given medications for combination therapy include calcium channel blockers with beta blockers and diuretics with Angiotensin receptor blockers.

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