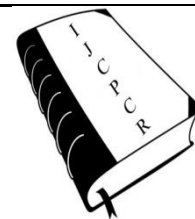




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A STUDY ON PRESCRIBING PATTERN OF ANTIHYPERTENSIVES AMONG PATIENTS WITH HYPERTENSION IN A TERTIARY CARE TEACHING HOSPITAL

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ABSTRACT

Background: prescribing pattern is a component of medical audit. The treatment of hypertension recommended different BP goals for geriatric population compared to young adults. So this study was aimed to assess the prescribing patterns for antihypertensive in the patient with hypertension. Materials and Methods: It was a prospective observational study and conducted from October 2021 to March 2022 in the outpatient department of general medicine in Karuna Medical College Hospital, Palakkad, Kerala. Result: A total of 125 patients were enrolled in this study. 51 (40.8%) patients were under combination therapy and 74 (59.2%) patients were on monotherapy. Conclusion: The most common drug prescribed was ARB as a single drug therapy and in combination therapy followed by ARB+DIU among hypertensive patients were considerable and this practice positively impacted on the overall BP control.

Key words: Prescribing pattern, Hypertension, Antihypertensives, ARBs.

INTRODUCTION

Hypertension is defined as any blood pressure (BP) $\geq 140/90$ mm Hg. It has been projected that the global prevalence of hypertension would increase from 26.6% in 2000 to 29.2% in 2025.[1] Approximately 70% of women and 65% of men above age 65 years have hypertension. Individuals aged >65 years are also more likely to have isolated systolic hypertension and to have higher cardiovascular risk.[2] Apart from unhealthy lifestyles, lack of awareness about hypertension, distorted public health systems, physicians treating hypertension also lag behind in treating hypertension according to standard guidelines. Noncompliance to antihypertensive therapy is also a reason for uncontrolled hypertension. Elderly patients commonly have multiple pathologies leading to poly pharmacy, and altered pharmacokinetics and pharmacodynamics, are prone to adverse drug reactions

from inappropriate medication.[3] But there is limited evidence on the management of hypertension in this age group.

The study of prescribing pattern is a component of medical audit which seeks monitoring, evaluation and necessary modifications in the prescribing practices of the prescribers to achieve rational and cost-effective medical care. It is necessary to define prescribing pattern and to identify the irrational prescribing habits to drive a remedial message to the prescriber.[4] Achieving hypertension control is beneficial regardless of age. Fixed-combination pills have the potential of increasing adherence to treatment, improving the benefit/risk ratio, and simplifying therapy, with resulting convenience especially in the elderly.[5].

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Treatment of hypertension includes non-pharmacologic and pharmacologic approaches and treatment decisions depends on whether there is pre-existing cardiovascular disease, diabetes mellitus, chronic kidney disease (CKD).^[6] The basic drug groups used in elderly patients, if no special indications exist, are diuretics (DIU), calcium channel blockers (CCBs), angiotensin-converting enzyme inhibitors (ACEI), and angiotensin receptor blockers (ARBs)^[7] and treatment of hypertension recommended different BP goals for geriatric population compared to young adults.^[8] So this study was aimed to assess the prescribing patterns for antihypertensive in the patient with hypertension.

METHODOLOGY

It was a prospective observational study and conducted from October 2021 to March 2022 in the outpatient department of general medicine in Karuna Medical College Hospital, Palakkad, Kerala. The study included patients treated with at least any one class of antihypertensive drugs and hypertensive patients with disease like diabetes, dyslipidaemia, hypothyroidism, coronary artery disease and myocardial infarction. Predesigned data entry form which included demographic

details of patients like age, sex, social habits, comorbidities, BP values and prescribed antihypertensive drugs.

RESULT

A total of 125 patients were enrolled in this study. There were 52 male participants (41.6%) and 73 female participants (58.4%). (Table 1) The mean age was 59.18 \pm 11.6 years, with about half of study population being \geq 50 years of age.

51 (40.8%) patients were under combination therapy and 74 (59.2%) patients were on monotherapy. The common BP drug combinations used by patients were ARB+DIU for 24 patients (47%), ARB+CCB for 14 patients (27.45%), ARB+BB for 12 patients (23.52), BB+CCB for 5 patients (9.8%) and ARB+CCB+DIU for 4 patients (7.8%) (Table 3)

The most commonly prescribed antihypertensive medications were ARBs for 72 patients (57.6%), CCBs for 43 patients (34.4%), (DIU) for 35 patients (28%), BB for 27 patients (21.6%) ACEI and centrally acting alpha 2 agonists were the least commonly prescribed classes. In monotherapy ARB prescribed 33 (26.4%) patients and followed by CCB, BB, DIU and ACE. (Table 4)

Table 1. Age wise distribution among study population

S.no	Age (years)	No. of patients	Percentage of patients
1	<40	9	7.2
2	41 – 49	8	6.4
3	\geq 50	106	84.8
4	Mean age	59.18 \pm 11.16	

Table 2. Sex wise distribution among study population

S.no	Sex	No. of patients (n=125)	Percentage of patients
1	Female	73	58.4
2	Male	52	41.6

Table 3. Prescribing pattern of different class of antihypertensives in combination therapy

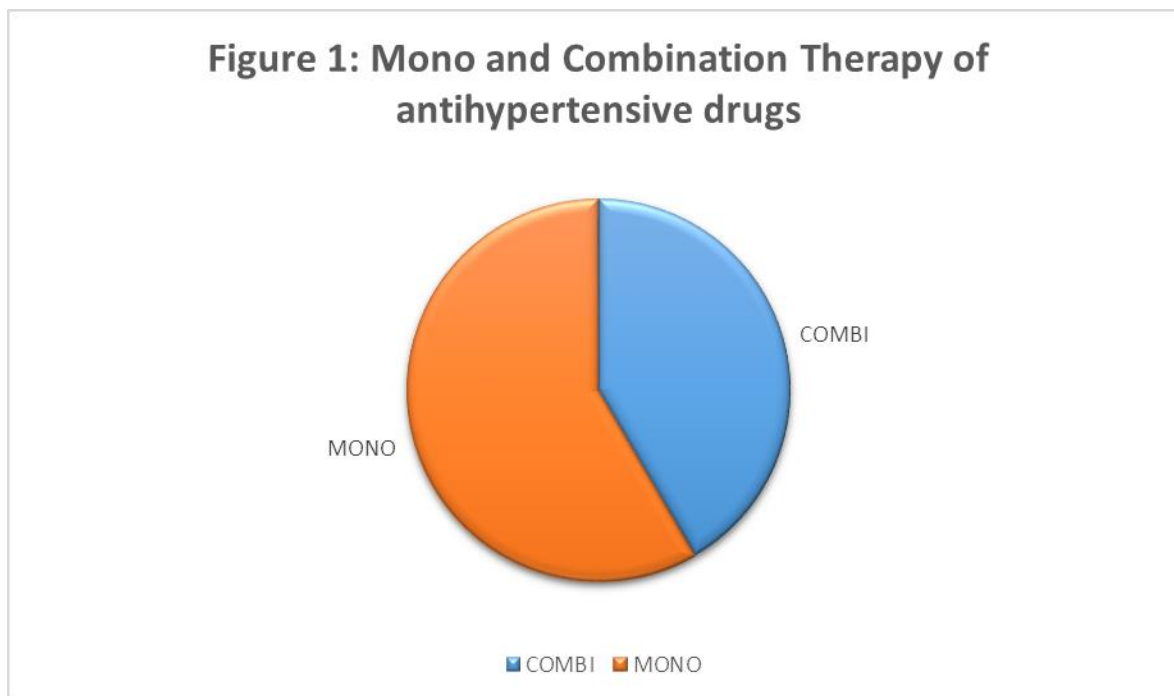
S.no	Combination of drugs	No. of patients (n=125)	Percentage of patients
1	ARB+DIU	24	19.2
2	ARB+CCB+DIU	3	2.4
3	ARB+CCB	13	10.4
4	BB+CCB	5	4
5	ARB+BB	11	8.8

Table 4. Prescribing pattern of different class of antihypertensives in Mono therapy

S.no	Monotherapy	No. of patients (n-125)	Percentage of patients
1	CCB	22	17.6
2	BB	9	7.2
3	DIU	7	5.6
4	ACE INHIBITORS	4	3.2
5	ARB	33	26.4

Table 5. Distribution of comorbid disease among study population

S.NO	Diagnosis	No.of patients (n=125)	Percentage of patients
1	Coronary artery disease	7	5.6
2	Type 2 diabetes mellitus	42	33.6
3	Hypothyroidism	5	4
4	Dyslipidaemia	5	4
5	No comorbidity	63	50.4



DISCUSSION

In this study majority of the hypertensive patients were above 40 years of age; this result is comparable to previous studies related to hypertension.^[9] Hypertension is more prevalent among older populations since they have high comorbid conditions associated with hypertension like increased arterial and arteriolar wall stiffness, decreased barrow receptor sensitivity, increased responsiveness to sympathetic nervous stimuli and altered renal and sodium metabolism associated with aging.^{[10][11]}

This study sample shows that females are more affected by hypertension than male which is contradicting to some previous study reports in Indian hospitals.^[12] The female gender predominance in this study may reflect better health-conscious behaviour of women over men, as reported elsewhere.^[13]

Most of the participants were on monotherapy 59.2 % and rest were on combination therapy 40.8 %. The most commonly prescribed antihypertensive medication in this study was ARBs 57.6%, followed by CCBs and diuretics, which was comparable to finding in previous reports.^[14] ARBs show more efficacy similar to calcium channel blockers which is most commonly prescribed

medications in Indian tertiary care teaching hospitals as seen from other studies conducted.^[15]

The most common antihypertensive drug combinations were ARB + diuretics and ARB + CCB. This pattern of antihypertensive medications used showed compliance with Eight Joint National Committee Guidelines on Prevention, Detection, Evaluation and Treatment of High Blood Pressure (JNC 8).^[16] Alpha 1 blockers and centrally acting alpha 2 agonist were the least prescribed antihypertensive medications in this study, which shows similarity to earlier studies.^[17] Blood pressure management is the important intervention for reduce the risk of future CV events.^[18]

CONCLUSION

In conclusion the most common drug prescribed was ARB as a single drug therapy and in combination therapy followed by ARB+DIU among hypertensive patients were considerable and this practice positively impacted on the overall BP control. In order to promote the rational prescribing drugs and hospital formularies in special committees are useful in reducing the misuse of

drugs especially in poly-pharmacy and in the treatment of hypertension.

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