



PRESCRIBING PATTERN OF ANTIHYPERTENSIVE DRUGS IN A TERTIARY CARE TEACHING HOSPITAL

Pharmacology

Dr. Ram Singh Verma*

Associate Professor, Department of Pharmacology, Government Medical College, Banda, U.P. India *Corresponding Author

ABSTRACT

AIMS AND OBJECTIVE: To evaluate the prescribing pattern of antihypertensive drugs in a tertiary care teaching hospital.

METHODS: A cross sectional study was carried out at Outpatient Department of Medicine in a tertiary care teaching hospital to evaluate the prescribing pattern of antihypertensive drugs during period of November 2018 to April 2019.

RESULTS: In present study, 68.1% patients received monotherapy while 31.9% received combination therapy. In monotherapy, ACEIs were most commonly prescribed antihypertensive drugs while in combination therapy ARB + Diuretics were most commonly prescribed.

CONCLUSION: In our study, we observed that ACEIs were most commonly prescribed antihypertensive drug. Combination therapy was usually prescribed to those patients who have associated risk factors and co-morbid condition.

KEYWORDS

Prescribing pattern, Monotherapy, ACEIs, CCBs, ARBs

INTRODUCTION

Non-communicable diseases are a growing public health concern; especially hypertension (HTN), with an appreciable proportion of patients with HTN in developing countries. There are several factors responsible for hypertension like age, ethnic background, family history of hypertension, obesity, sedentary life style, food habits, smoking, alcoholism, stress and some chronic pathological conditions like diabetes, renal disease etc. Worldwide data for the global burden of HTN, 20.6% of Indian men and 20.9% of Indian women were suffering from HTN in 2005.¹ It has been estimated that by the year 2030, 23 million cardiovascular deaths are projected to be due to hypertension, of which about 85% cases will be from low-resource settings and developing nations.² Some studies from India have shown the prevalence of hypertension to be 25% in urban and 10% in rural people in India.^{3,4} The poor control of hypertension leads to cardiovascular complications like Ischemic heart disease, heart failure, stroke and chronic renal insufficiency.⁵ Awareness and adequate control of hypertension in India is poor, only 69% people suffering with hypertension are aware that they have the disease, among them only 54% receive treatment and only 27.4% achieve adequate blood pressure control.⁶

Rational prescription patterns are defined as patients receiving medications according to their medical condition, in doses that meet their requirements, for an adequate period of time, and at affordable cost to them and the society. Appropriate prescribing has a positive implication on medication adherence and disease improvement.⁷

MATERIALS AND METHOD:

A cross-sectional study was carried out at Out-Patient Department of Medicine in GMC, Banda, during November 2018 to April 2019. Samples of 372 prescriptions were collected and screened. Verbal consent was taken from the patients interested to include in present study. Inclusion criterion for the selection of prescriptions was hypertensive patients according to JNC-VIII guidelines. 68 prescriptions having life-style modification and non-pharmacological measures were excluded from the present study. The results are based upon the data obtained from 304 participants. Data was analyzed using MS Excel and summarized as counts and percentages.

INCLUSION CRITERIA:

- Patients with age groups >18 years.
- Hypertensive patients with and without co-morbid conditions
- Patients on Monotherapy and combination therapy.

EXCLUSION CRITERIA:

- Patients with age group < 18 years.
- Prescriptions having life style modifications and non-pharmacological measures.

RESULTS AND OBSERVATION:

In present study, we observed that 58.5% hypertensive were male while 41.5% were female. Hypertension was more common in urban population (63.8%) as compared to rural population (36.2%). In present study, it was observed that most of the hypertensive was of age

group of 41-60 years (40.5%). (Table 1) Out of 304 prescriptions, 68.1% patients received monotherapy and 31.9% received combination therapy. In monotherapy, ACEIs (37.7%) were most commonly prescribed, followed by ARBs (28.5%). [Figure 2] Among combination therapy most commonly prescribed combination was ARB+ Diuretics (10.5%), followed by CCB+β-blockers (5.3%). [Figure 2]

DISCUSSION:

In present study it was observed that the prevalence of hypertension was more in male patients (58.5%) as compared to females (41.5%), so male are affected more than female which was in accordance to previous study done by Farang et al.⁸

In present study, maximum numbers of patients (40.5%) were of age group of 41-60 years. This reflects that risk of hypertension increases as the age advances. A study conducted by Devi et. Al. revealed that increasing age, body mass index, smoking, diabetes and extra salt intake are common risk factors for hypertension.⁹ Present study shows monotherapy (68.1%) is more common than combination therapy (31.9%). It was in accordance of previous studies done by Kuchake et al. and Mishra et. Al.¹⁰⁻¹¹ The combination therapy is prescribed to those hypertensive patients who are not controlled by monotherapy. In present study, ACEIs (37.7%) were the most commonly prescribed drug in monotherapy followed by ARBs. These results were in accordance with previous studies.^{11,12} Combination therapy adequately controlled the blood pressure in hypertensives.¹³ Cardiovascular complications also reduces by combination therapy thus reduces mortality.¹⁴ In present study, CCBs were the preferred antihypertensive drugs in elderly patients which is in accordance to the guidelines of National Institute for Health and Care Excellence (NICE).¹⁵ ARBs were the preferred antihypertensive drugs in the patients with age < 50 years. Diuretics were most preferred drugs in combination therapy which was in accordance to the previous study.¹⁶ It is essential to combine diuretics with anti-hypertensive drugs for reduction of blood volume, peripheral vascular resistance. ACEIs/ARBs were highly preferred antihypertensive drugs in patients having nephropathy.

CONCLUSION

In our study, we observed that ACEIs were most commonly prescribed antihypertensive drug in monotherapy. Ramipril was most commonly prescribed ACEIs while in ARBs it was telmisartan. In present study, combination therapy was usually given to those antihypertensive patients who have associated risk factors and co-morbid conditions. We are in opinion that there is need of further prescription audits to evaluate and improve the prescribing pattern of anti-hypertensive drugs.

Table 1: Demographic characteristics of hypertensive patients (n=304)

Variables	Variables	Frequency n (%)
Sex	Male	178(58.5)
	Female	126(41.5)
Residence	Urban	194 (63.8)
	Rural	110 (36.2)

Age (year)	20-30	22 (7.2)
	31-40	39 (10.5)
	41-50	47 (15.5)
	51-60	76 (25.0)
	61-70	65 (21.4)
	>70	55 (18.1)

Fig 1: Prescribing pattern of Anti-hypertensive drugs (Monotherapy)

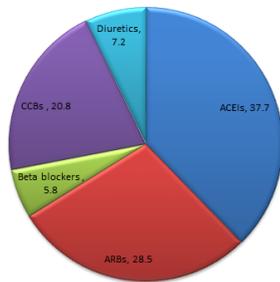
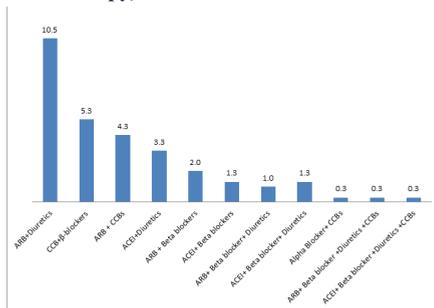


Fig. 2: Prescribing pattern of Anti-hypertensive drugs (Combination therapy)



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