

A study of pattern of various drugs used for treatment of hypertension at tertiary health care centre

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Abstract

Background: The prevalence of hypertension has been increasing in India. The average prevalence of hypertension in India is 25% in urban and 10% in rural inhabitants. **Aims and Objectives:** To Study the pattern of various drugs used for treatment of Hypertension at tertiary health care centre. **Methodology:** The Present study was undertaken by the department of Pharmacology in collaboration with the department of Medicine on newly diagnosed patients of Hypertension attending Medicine outpatient department of HKE society's Basaveshwara Teaching and General hospital, attached to M.R. Medical College, Kalaburagi a for a period of 12 months from January 2017- December 2017. The statistics presented in the percentages and tabular form. **Result:** The mean age in the patients received Cilnidipine was 42.98 ± 8.35 and Amlodipine was 44.48 ± 9.03 . Out of total 100 patients, Male: Female ratio of 67:33 was found in the patients enrolled for our study. Both the groups had more patients with moderate elevation of blood pressure. In Cilnidipine group majority of the patients required concomitant drugs like –ARBs i.e. 54% followed by Diuretics 34% , ACIs- 26%, Antidiabetics-14% etc. and in Amlodipine group the majority of the patients required ARBs- 50%, ACIs - 34% , Statins- 20%, Antidiabetics- 20%, β blockers-16%, Diuretics- 12% etc. **Conclusion:** It can be concluded from our study that In Cilnidipine group majority of the patients required concomitant drugs like –ARBs, Diuretics, ACIs, Antidiabetics and in Amlodipine group the majority of the patients required ARBs, ACIs, Statins, Antidiabetics, β blockers, Diuretics etc.

Key Word: Hypertension, ARBs, Diuretics, ACIs, Antidiabetic, Amlodipine, Cilnidipine

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INTRODUCTION

The definition of hypertension as released by the seventh report of the Joint National Committee on prevention, detection, evaluation, and treatment of high blood pressure (JNC 7) is systolic blood pressure (SBP) ≥ 140 mmHg or diastolic blood pressure (DBP) ≥ 90 mm Hg, which simplifies hypertension classification by including

only stage I (SBP 140–159 mm Hg or DBP 90–99) or stage II (SBP 160 mm Hg or higher or DBP 100 mm Hg or higher). Perhaps the most important change is the new classification of “pre-hypertension” (SBP 120–139 mm Hg or DBP 80–89 mm Hg), which combines the normal and high normal categories of the previous JNC VI report, in the recognition of the fact that even these levels of BP confer an increased risk of the development of hypertension and future cardiovascular events^{1, 2} Many risk factors may contribute to its development, including age, gender, weight, physical activity, smoking, family history, serum cholesterol, diabetes mellitus, renal dysfunction, peripheral resistance vessel tone, endothelial dysfunction, autonomic tone, insulin resistance and neurohumoral factors. Hypertension doubles the risk of cardiovascular diseases, including coronary heart disease (CHD), congestive heart failure (CHF), ischemic and hemorrhagic stroke, renal failure, and peripheral arterial disease if not effectively treated^{3,4}. Globally, elevated

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blood pressure is the leading risk factor for mortality and morbidity, accounting for 7% of global disability adjusted life years and 9.4 million deaths in 2010⁵. The prevalence of hypertension has been increasing in India. The average prevalence of hypertension in India is 25% in urban and 10% in rural inhabitants⁶. Factors which are attributable to these changes are rapid urbanization, lifestyle changes, dietary changes and increased life expectancy⁷. Epidemiological studies have shown that sedentary lifestyle and stress are important risk factors for hypertension⁸. A systematic review on the prevalence of HTN in India, for studies published between 1969 and July 2011, reported a range between 13.9 to 46.3% and 4.5 to 58.8% in urban and rural areas of India, respectively⁹. So we have done study to understand the pattern of drug and concomitant drugs consumed for hypertension at tertiary health care centre.

METHODOLOGY

The Present study was undertaken by the department of Pharmacology in collaboration with the department of Medicine on newly diagnosed patients of Hypertension attending Medicine outpatient department of HKE society's Basaveshwara Teaching and General hospital, attached to M.R.Medical College, Kalaburagi a for a period of 12 months from January 2017- December 2017. After approval by the Institutional Ethics Committee (IEC), 100 adult patients aged 18-60 yrs of either sex of newly diagnosed mild and moderate hypertensive patients were included. while Patients aged <18 years and >60 years, History of severe hepatic, renal disease and severe cardiac disease, Pregnant and lactating mothers, Major Depressive Disorder with psychotic symptoms were excluded from the study. Here the main treatment group i.e. Cilnidipine and Amlodipine were prepared and pattern of concomitant drugs given them were also retrieved. The statistics presented in the percentages and tabular form.

RESULTS

The present study was conducted on 100 patients aged between 18-60 years of age of either sex, diagnosed to be suffering from mild to moderate hypertension, and prescribed either Cilnidipine or Amlodipine. The results obtained from our study have been tabulated along with appropriate graphical representation below

Table 1: Age wise distribution of patients among two groups

Group	Mean age (years)	Standard Deviation
Cilnidipine	42.98	8.35
Amlodipine	44.48	9.03

The mean age in the patients received Cilnidipine was 42.98 ± 8.35 and Amlodipine was 44.48 ± 9.03 .

Table 2: Sex wise distribution of patients among two groups

Gender	Cilnidipine	Amlodipine	Total number of cases
Male	33	34	67
Female	17	16	33

Out of total 100 patients, Male: Female ratio of 67:33 was found in the patients enrolled for our study

Table 3: Distribution of patients according to Grade of Hypertension

Grades	Cilnidipine (N=50)	Amlodipine (N=50)
Mild	19(38%)	23(46%)
Moderate	31(62%)	27(54%)

Both the groups had more patients with moderate elevation of blood pressure

Table 4: concomitant medications prescribed in patients of two group

Drugs	Cilnidipine group (N=50)	Amlodipine group (N=50)
Diuretics	17 (34%)	6 (12%)
Central Sympatholytic Agents	4 (8%)	4 (8%)
α blockers	4 (8%)	5 (10%)
β blockers	7 (14%)	8 (16%)
ACIs	13 (26%)	17 (34%)
ARBs	27 (54%)	25 (50%)
Statins	4 (8%)	10 (20%)
Antidiabetics	7 (14%)	10 (20%)
Others	4 (8%)	1 (2%)

Cilnidipine group majority of the patients required concomitant drugs like –ARBs i.e. 54% followed by Diuretics34% , ACIs- 26%,Antidiabetics-14% etc. and in Amlodipine group the majority of the patients required ARBs- 50%, ACIs - 34% , Statins- 20%, Antidiabetics-20%, β blockers-16%, Diuretics- 12% etc.

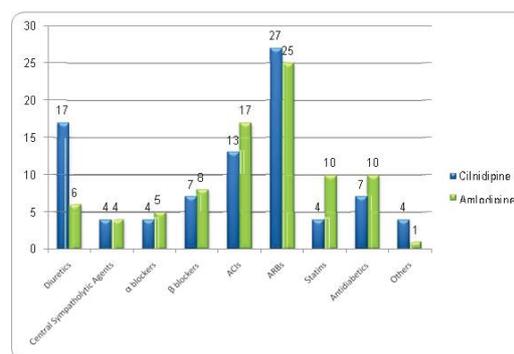


Figure 1: concomitant medications prescribed in patients of two groups

DISCUSSION

The prevalence of hypertension among younger individuals, however, is on a steady rise. This may be attributed to several factors such as dramatic changes in lifestyle and stress patterns, improved detection rates due to better screening and a high prevalence of metabolic and dietetic coronary risk factors among adolescents of the middle- and upper-middle class¹⁰. The alarming trend of an increasing prevalence of overweight/obesity, under nutrition, and hypertension is observed among indigenous populations of India, emphasizing the incorporation of a specific health management policy¹¹. Blood pressure is the pressure of the blood against the inner walls of the blood vessels, especially of the arteries during different phases of contraction of the heart. Arterial BP is directly proportional to the product of cardiac output (CO) and resistance to passage of blood through pre-capillary arterioles (peripheral vascular resistance, PVR)¹². Pharmaceutical management is started when dietary and life modifications efforts are failed to lower the BP. Our study depicts that patients were also segregated based on the grade of hypertension. It was observed that 31(62%) and 27(54%) patients in Cilnidipine and Amlodipine group respectively had maximum patients with moderate hypertension. A study by Waeber B¹³ and Kjeldsen SE et al¹⁴ showed that combination of different antihypertensive has beneficial in the treatment of hypertension, likewise our study deals with the Concomitant medications prescribed in patients of two groups. ARBs 27 (54%) in Cilnidipine group and 25 (50%) Amlodipine group is the most common concomitant drug prescribed in both groups.

CONCLUSION

It can be concluded from our study that in Cilnidipine group majority of the patients required concomitant drugs like –ARBs, Diuretics, ACIs, Antidiabetics and in Amlodipine group the majority of the patients required ARBs, ACIs, Statins, Antidiabetics, β blockers, Diuretics etc.

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