

# Prescription pattern of antihypertensive drugs and life style practices of hypertensive patients in an urban locality of Mysore

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## Abstract

**Objective:** To determine the prescription pattern of antihypertensive drugs in Narsimharajamohalla of Mysore. To determine the lifestyle practices of hypertensives. **Materials and Methods:** Around 165 patients were enrolled in the survey after obtaining their consent. Prescription pattern of antihypertensive drugs was noted. Lifestyle practices such as exercise habits, dietary salt intake; compliance to medication was enquired through a questionnaire. **Results:** majority of patients are on combination therapy. Diuretics were the commonly prescribed antihypertensives. Reduction in salt intake and exercise habits were poor among majority of the patients. Few patients were noncompliant to the prescribed medication. **Conclusion:** With the obtained data showing a large amount of patients on combination therapy with poor life style practices, there should be an emphasis on health education. The prescribing doctor, paramedics, media, government should do their best in educating the masses.

**Keywords:** antihypertensive drugs, prescription pattern, lifestyle practices.

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Received Date: 29/06/2014 Accepted Date: 08/07/2014

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DOI: 16 July 2014

## INTRODUCTION

Hypertension is a major chronic disease affecting significant portions of the world's population and uncontrolled hypertension leads to severe long-term consequences such as stroke, heart failure, coronary heart disease and end-stage kidney disease. It is also associated with diabetes mellitus and chronic renal failure. Many studies have demonstrated that lifestyle modifications and adherence to appropriate drug treatment are sufficient to maintain blood pressure at optimal levels with dramatic reduction in the risk of long-term cardiovascular and cerebrovascular events. Guidelines are available which recommend evidence-based approaches to the

management of hypertension.<sup>1</sup> The World Health Organization has identified hypertension, or high blood pressure, as the leading cause of cardiovascular mortality. The World Hypertension League (WHL), an umbrella organization of 85 national hypertension societies and leagues, recognized that more than 50% of the hypertensive population worldwide is unaware of their condition.<sup>2</sup> Hypertension is a leading contributor to the global burden of cardiovascular morbidity and mortality. Prevalence of hypertension in India in 2000 was 60.4 million males and 57.8 million females and projected to increase to 107.3 million and 106.2 million respectively in 2025. Hypertension vary from 4-15% in urban and 2-8% in rural population.<sup>3</sup> 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. Non compliance to antihypertensive therapy is also a reason for uncontrolled hypertension.<sup>4</sup> Therefore, management of hypertension is an important step to decrease the morbidity and mortality of cardiovascular disease and to prevent uncontrolled complications. It is well documented that, in addition to lifestyle modifications, convenient

antihypertensive drug therapy substantially reduces the risk of hypertension-related morbidity and mortality<sup>5</sup>.

### METHODS AND METHODOLOGY

The present study is done to evaluate the prescription pattern of antihypertensive drugs and few life style practices of hypertensive people in an urban locality of Narasimharaja Mohalla in Mysore city. The data was collected by door to door survey in this particular locality in the month of November 2013. A total of 165 patients were evaluated and data was obtained from them. The purpose of the study was explained to the patients and their consent obtained. This was done in their native language. To guard the identity, the names and addresses of the patients were not collected in the data. All the patients have given a written consent for the same. Childhood hypertensives were excluded from the study. Out of 165 hypertensive patients 86 were females and 79 were males. The least age in this particular study for females was 37 years and among males was 39 years. The maximum age among females was 73 years and among males was 79 years. The data was collected irrespective of other co-morbid conditions such as diabetes, osteoarthritis, cancer, etc. The various questions asked in the questionnaire given to the patients included: what were the antihypertensive drugs being used, exercise habits, compliance to the medication and reduction of dietary salt.

### RESULTS AND DISCUSSION

The obtained results are tabulated for convenience:

**Table 1: Patients on single drug vs combination therapy(n=165)**

Monotherapy	55 (33%)	Males:26 Females: 29
Combination therapy	110 (67%)	Males: 53 Females: 57

**Table 2: Patients with definite decrease in dietary salt(n=165)**

Reduction in salt intake	5 (3%)
No change in salt intake	160 (97%)

**Table 3: Exercise habits (n=165)**

Regular daily exercise	15 (9%)
Exercise once a week	26 (16%)
Hardly exercise	124 (75%)

**Table 4: Prescription pattern of various drugs(n=165)**

Diuretics	99 (60%)
Beta blockers	62(37.5%)
Calcium channel blockers	90(54.5%)
Angiotension receptor blockers	58(35.1%)
ACE inhibitors	22(13.3%)
Centrally acting antihypertensives	4(2.4%)

**Table 5: Prescription pattern of diuretics(n=99)**

Hydrochlorthiazide	60(60.6%)
Chlorthiazide	17(17.2%)
Furosemide	9(9.1%)
Toresimide	12(12.1%)
Metalozone	1(1%)

**Table 6: Prescription pattern of beta-blockers (n=62)**

Atenolol	33(53.2%)
Metoprolol	25(40.3%)
Others	4(6.5%)

**Table 7: Prescription pattern of calcium channel blockers (n=90)**

Amlodipine	60(66.7%)
Cilnidipine	15(16.7%)
Nifedipine	8(8.9%)
Diltiazem	7(7.8%)

**Table 8: Prescription pattern of angiotensin receptor blockers (n=58)**

Losartan	10(17.2%)
Telmisartan	42(72.4%)
Olmesartan	6(10.4%)

**Table 9: Prescription pattern of ACE inhibitors (n=22)**

Ramipril	10(45.5%)
Enalapril	12(54.5%)

**Table 10: Centrally acting antihypertensive (n=4)**

Clonidine	1(25%)
Moxinidine	3(75%)

**Table 11: Compliance to drugs(n=165)**

Strict compliance to drug intake	101(61.2%)
Misses dose once in a while	45(27.3%)
Irregular intake of drugs	19(11.5%)

The diuretics were the most commonly prescribed antihypertensive drugs, prescribed in 60% of the patients. The next commonest are the calcium channel blockers at 54.5% followed by beta-blockers in 37.5% of the people. Angiotension receptor blockers were prescribed in 35.1% of the patients and ACE inhibitors in 13.3% of the patients. Centrally acting antihypertensives were prescribed in 2.4% of the patients. Among the diuretics, hydrochlorthiazide is the commonly prescribed antihypertensive at 60.6% of all the prescribed diuretics followed by chlorthiazide in 17.2 % of the patients. Furosemide was prescribed in 9.1% of the patients and toresimide in 12.1% of the patients on diuretics as antihypertensives. Among the calcium channel blockers amlodipine was commonest, prescribed in about 66.7% of the patients followed by cilnidipine in 16.7% of the patients. Nifedipine was prescribed in 8.9% of the patients and diltiazem in 7.8% of the patients. Atenolol was the commonest amongst the prescribed beta blockers at

53.2% followed by metoprolol at 40.3%. The prescribed angiotensin receptor blockers included losartan 17.2%, telmisartan 72.4% and olmesartan 10.4%. Amongst ACE inhibitors enalapril was prescribed in 54.5% and ramipril in 45.5% of the patients. 33% of the patients are on single drug therapy. 66% of the patients are on combination drug therapy. Hypertension is such a disease which can be controlled to large extent by positive life style modifications such as exercise and dietary modifications. As such with these positive lifestyle practices there can be a reduction in the dose of the existing drugs or the number of patients on multiple drug therapy can be reduced. Only 5% of the patients have made a definite decrease in the daily salt intake after diagnosis of the disease. Reduction in salt intake when done by remaining 95% of the patients can go a long way in controlling hypertension and its consequences among these patients. Exercise habits of most of the patients are poor. The same can be attributed to household chores, lack of time, lack of motivation, co-morbid conditions such as obesity, osteoarthritis, etc. Only a poor 9% of the patients do a regular exercise. Patients exercising once a week stood at 15%. 75% of the patients don't exercise at all. The high

amount of disease burden can definitely be attributed in part to the poor lifestyle practices of the people.

### CONCLUSION

With the obtained data showing a large number of patients on combination therapy with poor life style practices, there should be an emphasis on health education. The prescribing doctor, paramedics, media, government should do their best in educating the masses.

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Source of Support: None Declared

Conflict of Interest: None Declared