

**AWARENESS OF HYPERTENSIVE PATIENTS ABOUT THE DISEASE ITS  
MEDICATION AND THEIR ADHERENCE TO HYPERTENSIVE MEDICATION**Shubra Joshi<sup>1</sup> and Dashputra Amruta V.<sup>2\*</sup><sup>1</sup>Undergraduate MBBS Student.<sup>2\*</sup>Assistant Professor, Pharmacology, NKP Salve Institute of Medical Sciences, Nagpur. (M. S.)**\*Corresponding Author: Dr. Dashputra Amruta V.**

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**ABSTRACT**

Hypertension is defined as having persistent elevated systolic blood pressure (BP) of 140 mmHg or above and/or diastolic blood pressure of 90 mmHg or above. Patients with hypertension possess two fold higher risk of developing coronary artery disease (CAD), four times higher risk of congestive heart failure and seven times higher risk of cerebrovascular diseases (CVD), compared to normotensive subjects. The objective of the study was to analyse the awareness of hypertensive patients about the disease, their medication and also their adherence towards anti-hypertensive medication. The study was conducted in the medicine OPD of Lata Mangeshkar Hospital, Dighod Hills, Hingna. All the hypertensive patients who visited the OPD during duration of study were selected, provided they satisfied the inclusion/ exclusion criteria. The subjects were interviewed on basis of a preformed questionnaire. Out of 149 patients, 70% were in the age group of 44-63yrs, 61.74% had a positive family history for hypertension. 69% knew the normal value of BP for their age, 45.63% knew name of their medication and 100% knew its intake frequency. 53.69% said they never missed a dose, but 32.21% admitted they unintentionally missed a dose. The study concluded that disease awareness is an important factor that determines the adherence of patients toward antihypertensive medication. Other factors influencing adherence include education, co-morbidities and high cost of drug. Physicians providing information about the disease and its compliance can help in improving patients' compliance. Also, prescribing generic medicines to reduce cost of medication can lead to increasing adherence towards antihypertensive treatment.

**KEYWORDS:** Hypertension, Adherence, Compliance.**INTRODUCTION**

Hypertension is a globally common cardiovascular disease with a prevalence ranging from 10-20% among adult population.<sup>[1]</sup> It is defined as having persistent, elevated systolic blood pressure (BP) of 140 mmHg or above and/or diastolic blood pressure of 90 mmHg or above.<sup>[2]</sup> Subjects with hypertension possess two fold higher risk of developing coronary artery disease (CAD), four times higher risk of congestive heart failure and seven times higher risk of cerebrovascular diseases (CVD), compared to normotensive subjects.<sup>[3, 4]</sup> The disease is effectively controllable but is becoming a huge scare because of patients' non-adherence to its medication. As reported by the World Health Organisation, adherence to medication in patients with chronic disease averages only to around 50% in developed countries. The situation is considerably worse in developing countries.<sup>[5]</sup> Multiple factors influencing patient adherence to prescribed therapies were illustrated; these include high incidence of adverse effects of anti-hypertensive drugs, quality of life, socio-demographics, lack of knowledge regarding

hypertension, treatment and clinical variables.<sup>[6, 7, 8]</sup> It has been hypothesised that patients with hypertension who have poor medication adherence have less knowledge of overall therapeutic goals and are less likely to attain these goals.<sup>[9]</sup>

Thus taking in consideration all the above points, this project has been designed to study about the awareness of patients about hypertension, its drug therapy and compliance.

**MATERIAL AND METHODS**

The study was conducted in the Medicine OPD of Lata Mangeshkar Hospital, Dighod Hills, Hingna. The duration of the study was two months (June-August, 2014). To calculate the sample size, a record of number of hypertensive patients visiting the Medicine OPD per week was obtained from the Medical Records section and an average was taken. The result was multiplied by 8 (for the number of weeks of study) to calculate a sample size of 160. An inclusion and exclusion criteria was applied for benefiting the study.

**Inclusion criteria-** Primary Hypertensive patients

**Exclusion criteria**

Secondary Hypertensive patients  
Women who are pregnant  
Patients with incomplete medical records  
Unwilling to participate

Applying the inclusion and exclusion criteria, the sample size reduced to 149 patients.

A detailed questionnaire was designed to obtain following from the participants: demographic characteristics (e.g. age, marital status, religion, education); lifestyle; disease awareness (e.g. awareness about symptoms, risk factors); treatment awareness (e.g. medication effects, complications of disease) and adherence (frequency and causes of missing medicine). Ethical clearance was obtained from the Institutional Ethical Committee of NKP Salve Institute of Medical Sciences. The patients were informed, explained about the study and a verbal consent was acquired from them. Wherein the patients were old or dependant, consent and information was procured from their care takers.

The data was entered simultaneously in Windows Excel Data Sheet. Wherever required, data was grouped into classes, their frequency measured and percentage calculated. On completion of collection of data and its entry, analysis was done by percentage method and the results were plotted on appropriate bar diagrams and pie charts for discussion.

## RESULTS

### Demographic Characteristics

A total of 149 hypertensive patients were studied in which males and females were almost equally distributed. Most of the subjects were in the age group of 44-63 years (70%). 38.5% were educated only up to primary, with only 26% ever gone to college or higher and almost 16% never attended school. Out of 149, 61.74% subjects had a family history of hypertension. The percentage of tobacco smokers and alcohol drinkers was insignificant to affect the study.

### Disease Awareness

In terms of disease knowledge, 44.29% knew three symptoms experienced by hypertensive patients and only 2% had no knowledge of symptoms. The symptoms known were largely based upon the one experienced by the subject themselves. Out of six common risk factors that were included in the questionnaire namely, sedentary lifestyle, obesity, no physical exercise, stress, family history and excess salt intake, 32.21% subjects knew three of those (most commonly stress, family history and obesity), 28.18% knew none and only 3.35% knew all six. In context of dietary advices followed,

52(34.89% subjects did not follow even a single advice while 46(30.87%) subjects followed all three namely restriction of oil, restriction of salt and timely food intake. 21(14.08%) followed only restriction of oil and salt [Fig.1]. when asked if they knew the normal value of BP for their age, 69.12% replied affirmatively. Also, a staggering 96.64% knew that sphygmomanometer was used for measuring BP while 3.35% also knew that ECG was also used. 53.02% of the subjects knew about the cardiovascular complications arising from hypertension, 7.38% knew about the renal complications and 37% knew about no complications [Fig.2]. Even though every subject had been enlightened about the disease by their respective doctor, 30.20% also got the knowledge from their relatives/friends and a mere 1.34% got self educated.

### Treatment Awareness

Out of 149 samples, 58.38% subjects had been undergoing treatment for less than 10 years, 37.58% for 11-20 years and only 4.02% had been suffering and getting treatment for more than 21 years. Almost 75% of the subjects went for a regular monthly BP check up while the rest had a quarterly check up of their blood pressure. 95 out of the 149 subjects (63.75%) are of the opinion that BP is curable with regular medication. In regards to the treatment type, 110(73.82%) subjects were prescribed a single anti-hypertensive drug while the rest were on multidrug therapy. When enquired on the medication details, 68(45.63%) subjects knew the name of drug while 30(20.13%) of them also knew its dose. A 100% was achieved when asked about the frequency of dose. 89.92% of the subjects were told about the complications of not taking the medication out of which, 2.01% chose to ignore the doctor's advice.

### Adherence

The subjects were asked to give the number of other diseases they were suffering from and also the number of medicines they were taking apart from anti-hypertensive. 31.54% and 14.76% had one and two co-morbidities respectively but over 51% were suffering from no other disease. In relation to it, 44.28% were consuming at least 2-4 drugs apart from hypertensive medication and 47.56% were taking none. Among the elderly, 38(25.50%) were been administered the dose by their caretakers. 53.69% of the participants said they never missed a dose but, 20.13% accepted they forgot <5 times a month and 26.17% forgot >5 times. The most common reason for missing the dose was unintentional missing (32.21%) followed by feeling better (18.79%) and high cost of drug (14.76%). Apart from inadvertent missing, 8.05% confessed they wilfully missed the dose sometimes (Fig. 3). Finally, out of 149, 104(69.79%) went for a monthly visit to their doctor, 33(22.14%) quarterly and 12(8.05%) bimannually.

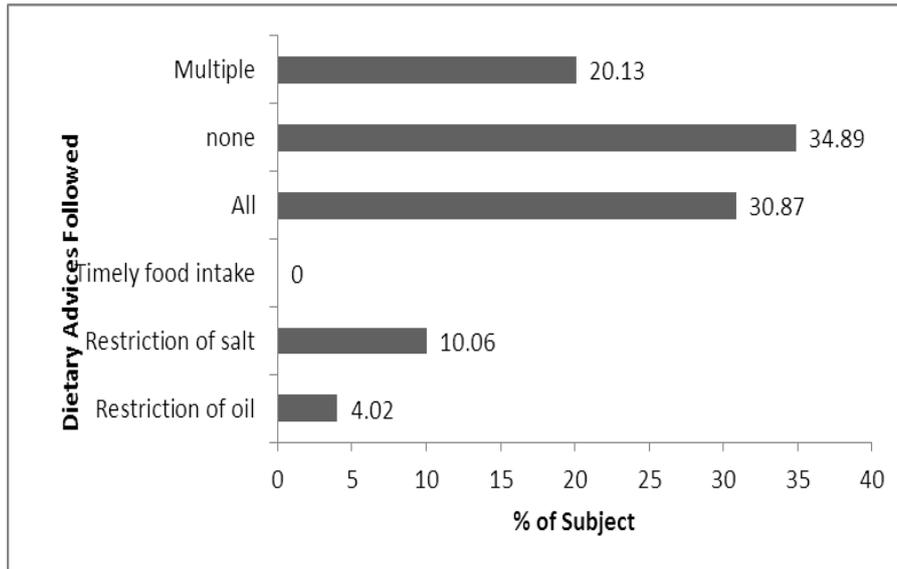


Fig. 1- Dietary advice followed by patients.

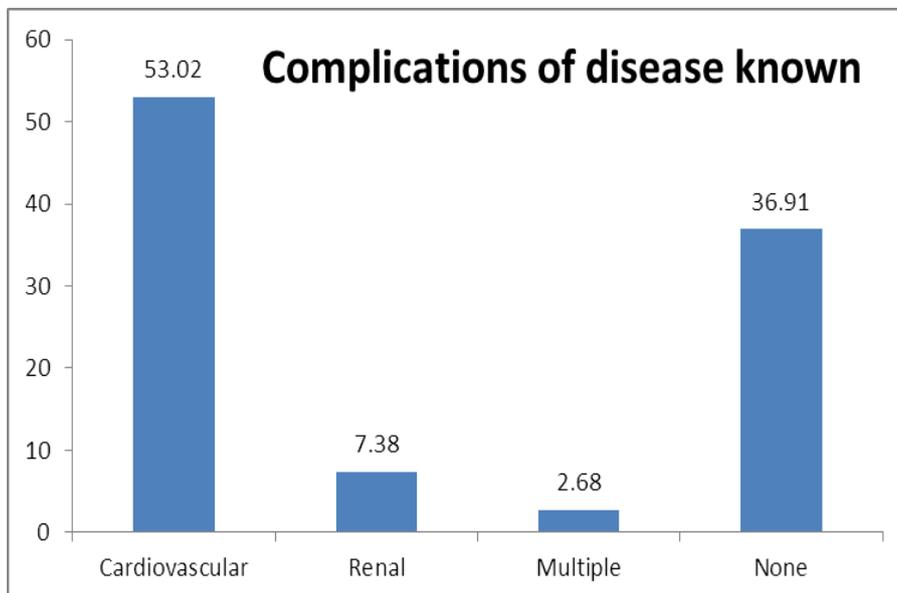


Fig. 2- Complications of disease known to patients.



Fig. 3- Intentional Missing of medicine.

## DISCUSSIONS

Medication adherence is an important factor in achieving controlled blood pressure. Due to the asymptomatic nature of the disease, patients' adherence to their prescribed medication is often a problem.<sup>[7]</sup> The rate of medication adherence may differ from the study to study depending upon the methods applied and population under study. Adherence towards medication is also closely related to the knowledge among patients about the disease.

The findings of present study indicate that the knowledge of patients regarding the symptoms, risk factors and life style changes is very limited and less than other studies conducted in developed countries.<sup>[10]</sup> This may be as a result of lack of schooling and prevalence of old ritualistic customs pertaining to medical field. In this study, even though the knowledge of patient about the disease was not extra ordinary, their adherence was consistent with the result of a study conducted in Malaysia.<sup>[7]</sup>

In relation to demographic characteristics, most of the Indian studies show an increase in frequency of hypertensive patients with increasing age. A study from rural Rajasthan<sup>[11]</sup> showed a prevalence rate of 54.3% in subjects above 60 years of age. This contrasted with our study where only 40% of the subjects were above 60. Many of the previous studies also reported of higher compliance among female patients than males.<sup>[12]</sup> Since our study had equal sex participation, we could not confirm or deny this statistic. The present study shows that people who have higher qualifications report more cases of hypertension (48.32%) than semi-skilled or unskilled workers. This was in accordance to the other studies conducted in India.<sup>[13, 14, 15]</sup> A factor contributing to this result may be the stress levels surrounding the population working in professional world.

While compiling data on disease awareness, a strong relation was determined between positive family history and knowledge about disease. 57 of participants of present study had positive family history. 82.45% of them knew at least one risk factor, 91.22% knew at least 2 symptoms of raised blood pressure. A patient with positive family history has already been exposed to the life cycle of the disease. They are more aware and wary of the symptoms and risk factors as compared to those with negative family history. Such patients also have better compliance towards medication. Family history along with good education resulted in patients following the dietary advices for anti-hypertensive treatment especially restriction to salt and oil intake. The present study also shows that 73.73% subjects of all who were on anti-hypertensive treatment had controlled BP as against a study done in Himachal Pradesh.<sup>[16]</sup>

Medication adherence has always been an integral aspect of disease management for patients with chronic illnesses such as hypertension. In the present study, even though

majority of population (54.36%, 79.86% respectively) did not know the name or dose of medication, 100% of the participants knew when to take the medicine. Given that 16% of the sample was illiterate, 45.63% knew name of their medication. This shows patients' dedication for compliance towards medication. 88% of the subjects were told about the complications of not taking hypertensive medications. The participants of this study were more aware about the cardiovascular problems (53.02%) associated with hypertension but there were 36.91% without any knowledge about complications. Though all patients were imparted knowledge about the disease by their physician, 30.20% were also enlightened upon by friends and relatives. There was a considerable lack in the patients' interest to learn more about the disease and its complications. Though even after been told about the complications, patients choose to ignore them. This can be factored to their lack of understanding or simply an indifference to the words of doctor. In the present study, the frequency of unintentional (46.31%) or intentional missing was lesser than other similar studies.<sup>[9]</sup> This may be because of frequent visits to Hospital's OPD for check-up and also easier accessibility to Hospital in terms of distance and transportation. High cost of drug was implicated in reduced adherence of patients. Patients on lower socio-economic scale tend to forego medication in favour of other daily necessities. Poor adherence to medications contributes to morbidity, mortality and increased health care costs. Achievement of therapeutic goal is hindered by multi dimensional problems like lack of schooling, incomplete or limited disease knowledge and economic barriers. Reducing the cost of drug by prescribing generic medicine and decreasing the frequency of drug dosage can help in increasing compliance of patients towards medication.

## CONCLUSION

Hypertension is a prevalent disease and the people suffering from it are slowly understanding its severity and becoming compliant to its medication. Hypertension is commonly found in middle age group (70% were between 44-63 years). Most of the subjects (34.89%) did not follow any dietary advice but 10.06% restricted salt in their diet. Compliance was not up to the mark but the most common reason of missing the dose was unintentional missing. The main obstacle in the path of achieving therapeutic goal is lack of schooling and incomplete or limited knowledge about the disease given by physicians. The findings in this study emphasize on public awareness of hypertension among the socially/economically backward classes of Indian society and making a habit of prescribing generic, low cost drugs to patients on lifelong management.. The ability to identify indicators of low medication adherence is crucial in improving clinical care and treatment of hypertension.

## LIMITATIONS

This study was conducted via verbal communication with self-reporting as the source of information. The

disadvantages of recall bias, interviewer's bias and eliciting only socially acceptable responses can lead to overestimation of adherence. Also, this study did not include hypertensive patients not visiting the hospital during the time of study.

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