

ORIGINAL RESEARCH ARTICLE

PATIENT DEMOGRAPHICS AND DRUG PRESCRIPTION PATTERN AMONG
HYPERTENSIVE PATIENTS OF POKHARA VALLEY

GM Khan #, RK Thapa #, A Khakurel, G Shrestha, N Katila, S Bhurtel, P Thapa, K Parajuli

School of Health and Allied Sciences, Pokhara University, Kaski, Nepal.

#Equal Contribution as First Author.

*Correspondence to : Mr Gulam Muhammad Khan, School of Health and Allied Sciences, Pokhara University.
Email: gulamkhan@gmail.com

ABSTRACT

Hypertension is a common disease of the present world. Patient characteristics and use of anti-hypertensive agents directly affect the development and control of hypertension respectively. So, the objective of this study was to determine the patient demographics and drug prescription pattern among hypertensive patients of Pokhara valley. A community based descriptive cross-sectional study was conducted in different places of Pokhara valley. Performa was used for the collection of data and analysis was done using MS-excel and SPSS (version 17.0). The study showed that majority of the hypertensive patients were males of Brahmin and Newar community with susceptible age group of 60-69 years. Majority of the patients were non-vegetarian, non-alcoholic and non-smoker. The anti-hypertensive prescription pattern revealed that 80% of the patients were on monotherapy and calcium channel blockers were the mostly prescribed medication. Prescription of anti-hypertensive agents along with other medications for concomitant diseases was also observed. The prescription pattern was found to be rational and should be regularly monitored.

Key Words: Hypertension, Prescription pattern & Pokhara.

INTRODUCTION

Blood pressure (BP) means the force exerted by the blood against any unit area of wall of the blood vessel. ¹ The pressure wave transmitted along the arteries with each heartbeat is easily felt as the pulse, the highest (systolic) pressure is created by the contraction of the heart and the lowest (diastolic) pressure is measured as the heart fills. The standard unit for measuring BP is mmHg. ² Both the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High BP (JNC-VI) in 1997 and the 1999 guidelines from the WHO-International Society of Hypertension (WHO/ISH) have agreed that both systolic blood pressure (SBP) and diastolic blood pressure (DBP) should be used to classify hypertension (HTN). ² Systolic HTN has been associated with increased fatal and non-fatal cardiovascular (CV) events and its treatment has been shown to reduce CV morbidity and mortality. So, the current classification emphasizes both systolic as well as diastolic standards. ³ HTN is defined conventionally as “a sustained increase in BP \geq 140/90 mmHg, a criterion that characterizes a group of patients whose risk of HTN-related CV disease is high enough to merit medical attention”. ⁴

After the establishment of primary HTN, it is necessary to consider whether or not to treat the person with drugs and which drugs to use if it is better to start a drug therapy. ⁵ Other factors such as the level of BP, the age and gender of the patient,

the severity of organ damage (if any) due to high BP and the presence of CV risk factors must all be considered. ⁶ Lifestyle modifications should be the foundation of the initial therapy for HTN. A thiazide-type diuretic should be considered as initial therapy in most patients with uncomplicated HTN. The initial therapy for patients with Stage-2 HTN should be considered with two drugs including a diuretic paired with one of the other recommended first-line drugs.

The goal of AHT is to abolish the risks associated with BP elevation without adversely affecting quality of life. Drug selection is based on efficacy in lowering BP and in reducing CV end points including stroke, myocardial infarction and heart failure. ⁷ The drug treatment of HTN is complex and sometimes various drugs or combinations of drugs have to be tried to find what regimen is effective and suits the patient. A first-line treatment is one of the thiazides, effective at a low dosage and especially useful in the elderly. β -blockers, such as oxprenolol, acebutol or atenolol are also first-line treatments. Angiotensin Converting Enzyme inhibitors (ACE-I) and Calcium-Channel Blockers (CCBs) can be used if the first-line choices are not effective. ⁸

The aim of this study was to determine the patient demographics and AHT prescription pattern in hypertensive patients of

Pokhara valley. The research contributes in understanding of the hypertensive patients and current prescribing pattern of AHT.

MATERIALS AND METHODS

Study type

A community-based descriptive cross-sectional study was performed.

Study Site

The study was conducted in various parts of Pokhara valley, Nepal.

Criteria of enrolment

Inclusion Criteria

Patients who were under medication with one or more anti-hypertensive agent were included in the study.

Exclusion criteria

Patients who had mental illnesses or language barriers, which rendered them unable to answer the study questionnaires, and who were pregnant were excluded from the study.

Sample Size

Total number of patients enrolled in the study was 79.

Tools

Performa

The Performa form was prepared in both English and Nepalese languages. It contained the patient’s socio-demographic details, food habit and other lifestyle related information such as smoking and drinking habit, observed blood pressure and patient’s present medication information.

Study Variables

Performa was prepared for documenting the demographic details of the enrolled patients for describing the study respondents. The socio-demographic table consisted of several variables like patient’s name, age, gender, ethnicity, date of diagnosis of HTN, date of start of AHT, etc. Several lifestyles related risk factors associated with HTN such as smoking status, drinking status and dietary status were also included. It also contained a table to note down the present medication information such as name, strength and frequency of all the medications currently taken by the patient.

Data Analysis

Data analysis was done by using MS-Excel 2007 and SPSS software, version 17.0.

RESULTS AND DISCUSSION

The detail of age distribution of respondents is shown in the Figure 1.

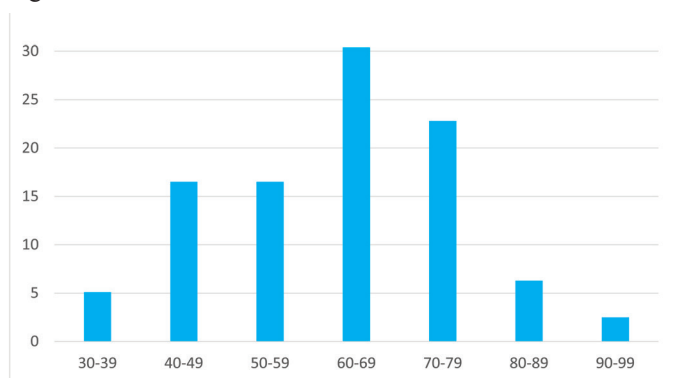


Figure 1: Age distribution of respondents

Majority of respondents were in the age group of 60-69 years. The mean ± standard deviation of the age of respondents was 61.78 ± 13.97 years. Blood pressure tends to rise with age. Therefore, people above 60 years are mostly susceptible to high blood pressure which is supported by the data mentioned above.⁹ It was found that 55.7% of the total respondents were male and 44.3% were female as shown in the Table 1.

Table 1: Gender wise distribution of respondents

Gender	No of respondents (%)
Male	44 (55.7)
Female	35 (44.3)

Although there are no sex-related differences in the development of HTN, our study showed that hypertensive males were more prevalent than females.

The distribution of study respondents according to their ethnicity is shown in Figure 2.

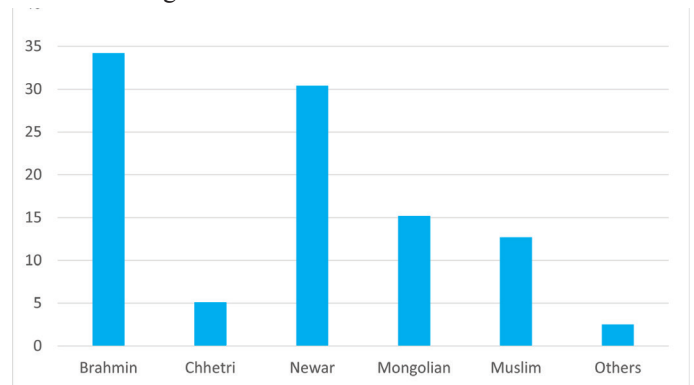


Figure 2: Ethnic distribution of respondents

Among several ethnic groups, majority of the respondents i.e. 34.2% were Brahmin, 30.4% were Newar, 5.1% were Chhetri, 15.2% were Mongolian and 12.7% were Muslim. Majority of the population in Nepal is Brahmin and Chhetri.¹⁰ As expected, majority of the hypertensive patients were Brahmin but surprisingly few were Chhetris. Newar hypertensive patient showed second highest prevalence. High fat containing diet and tradition of alcohol consumption among Newar population might have led to increased HTN occurrence.

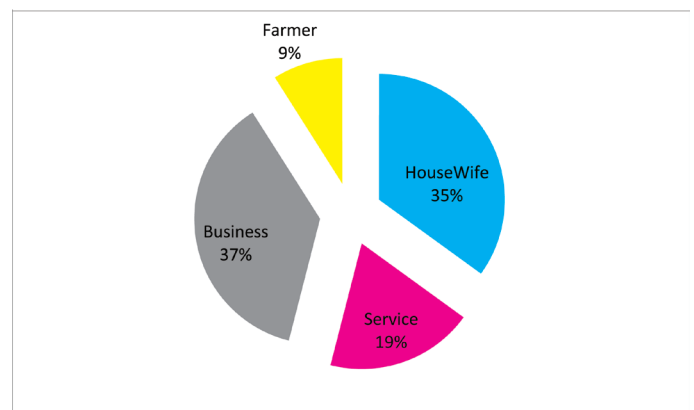


Figure 3: Occupational status of respondents

The occupational status of the study respondents are presented in Figure 3. Majority of the total respondents were businessmen followed by housewives. Work stress and long working hours might have contributed to the increased incidence of HTN among businessmen.¹¹ Housewives in Nepal mainly stay at home; and lack of exercise and increased diet might have contributed to higher prevalence rate of HTN. The distribution of study respondents according to their educational status is shown in Figure 4.

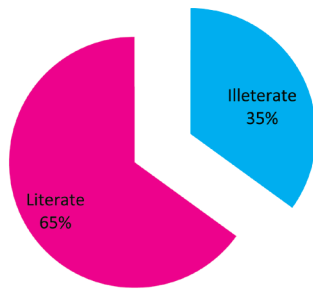


Figure 4: Educational status of respondents

Surprisingly, the prevalence of HTN was high among literate population as compared to illiterate. This data is supportive to the fact that literacy rate is increasing and less number of the respondents who were very elderly might have been unable to attend the school.

The status of the lifestyle related risk factors for HTN in the respondents is given in the Table 2.

Table 2: Lifestyle related status of respondents

Lifestyle related status	No. of Respondents (%)
1. Dietary habit	
Vegetarian	9 (11.4)
Non-vegetarian	70 (88.6)
2. Alcohol-taking habit:	
Yes	20 (25.3)
No	59 (74.7)
3. Smoking habit:	
Smoker	9 (11.4)
Non-smoker	70 (88.6)

According to the division of the dietary habit as non-vegetarian and vegetarian, majority of the respondents were found to be non-vegetarians. The result was similar to that found by Gul et al.¹² High fat containing meat might have been specially responsible for HTN. The alcohol taking habit of the respondents showed that majority of the total respondents were non-alcoholic. Although alcohol consumption increases chances of HTN, surprisingly the result was opposite in our study.¹³ It was also found that majority of respondents were non-smokers. Smoking habit is not directly linked to develop HTN and the result obtained supported this fact.

The study showed that 80% were prescribed with a single anti-hypertensive agent (AHA), 16% with two and only 4% with

more than two as shown in the Figure 5.

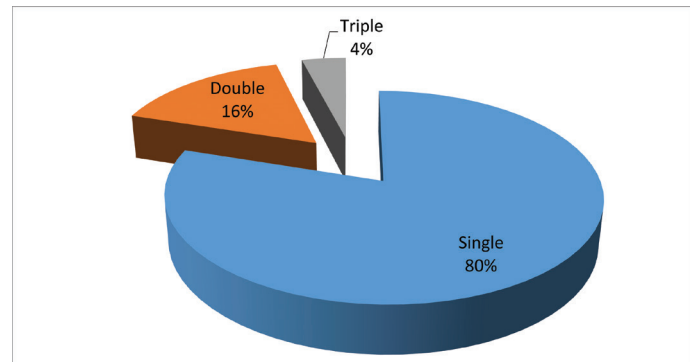


Figure 5: Type of anti-hypertensive treatment

The treatment for HTN includes single therapy initially and if HTN is not controlled then only multiple therapy is used. This fact is supported by the data presented. The various classes of AHA that were prescribed to the study respondents along with their frequencies are shown in the Figure 6.

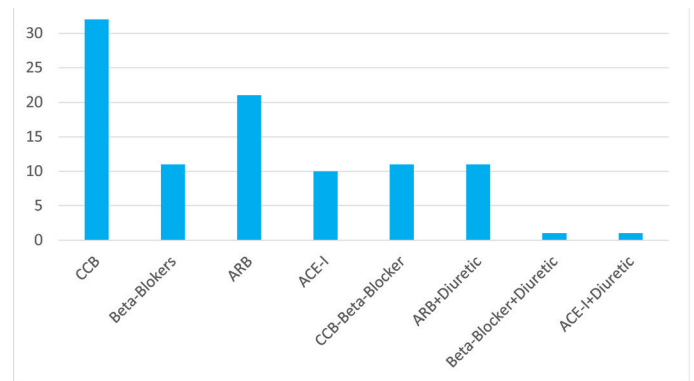


Figure 6: Classes of anti-hypertensive agents used

(CCB – Calcium Channel Blockers, ARB – Angiotensin Receptor Blocker, ACE-I – Angiotensin Converting Enzyme Inhibitor)

It was determined that majority of the respondents were prescribed with calcium channel blockers.

The total number of medications that were used in 79 respondents was 179. Out of the total number of the drugs (n=179), 98 (54.7%) drugs were of the antihypertensive class. Apart from the AHA, 81 drugs were of other classes. The other major classes of drugs used were antidiabetic, antihyperlipidemic, antiplatelet, antipsychotic and gastrointestinal drugs as shown in the Figure 7.

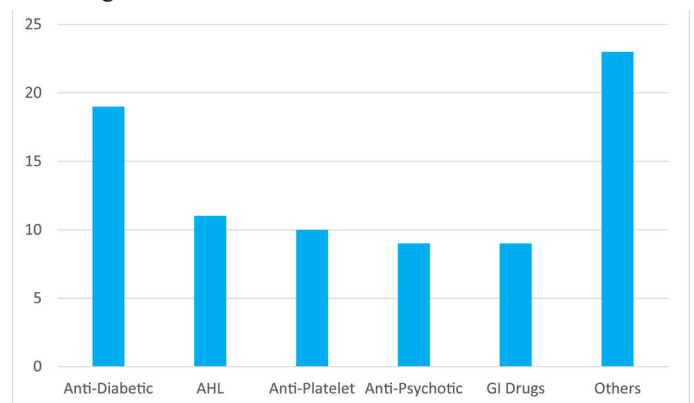


Figure 7: Classes of drugs prescribed to the respondents

HTN along with concomitant diseases such as diabetes, psychosis, hyperlipidemia and gastrointestinal problems were observed in the patients and hence different other classes of drugs were prescribed to them.

CONCLUSION

The study provides an insight about the hypertensive patients of Pokhara valley along with their AHT. Majority of the patients were under single AHT and this supports rational prescribing pattern. Further studies to assess the timely changes in the prevalence pattern of HTN and AHT prescription is warranted.

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