

COMPLIANCE TO ANTIHYPERTENSIVE TREATMENT AMONG HYPERTENSIVE PATIENTS AT A TERTIARY CARE HOSPITAL

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ABSTRACT

Objective: To assess the compliance of hypertensive patients to the treatment prescribed by the physician.

Study Design: Cross-Sectional Study.

Place and Duration of Study: Sheikh Zayed Medical College, Rahim Yar Khan, 01 month (June to July 2023).

Methodology: All patients who presented to the medical outpatients department from June to July 2023 and fulfilled the inclusion criteria were inducted in the study. Predesigned questionnaires were used for data collection. The study subjects were hypertensive patients who attended the outpatient department of the Medical unit of the hospital. The subjects included were at least 20 years old and using antihypertensive drugs for at least 6 months. The non-probability, convenience sampling technique was used for sample collection. The questionnaire included information regarding the sociodemographic status of the participants and questions that assessed compliance to antihypertensive therapy. Data were collected, and analyzed by using SPSS version 23.

Results: Total 190 hypertensive patients were included in the study. Out of 190 study subjects, 88 (46.31%) were found to be compliant to their antihypertensive drug treatment, while 102 (53.69%) were non-compliant. The high cost of the medicines ($p=0.04$) and forgetfulness ($p=0.05$) significantly predicted noncompliance to antihypertensive treatment.

Conclusion: The level of compliance to antihypertensive medication was poor in more than half of the hypertensive patients. The significant predictors of non-compliance were forgetfulness and the high cost of medicine.

Key words: Antihypertensive agents, Compliance, Hypertension.

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INTRODUCTION

Hypertension refers to an elevated blood pressure. Adhering to the advice given by the healthcare professional regarding the schedule, amount, and frequency of drug use is known as medication compliance. It is measured in relation to a time span¹.

Globally about 1.28 billion people, 30-79 years of age, suffer from hypertension and around two-thirds are from low- and middle-income countries. Forty-six per cent of the hypertensive patients are ignorant of their illness. Approximately 42%

of adult patients are diagnosed as hypertensive and are receiving treatment. One in five persons (21%) have controlled hypertension. Hypertension is among the main causes of early mortality across the globe. Increased westernization and urbanization have been linked to the rising incidence of hypertension, with urban regions showing a greater frequency than rural ones. Furthermore, it is anticipated that the prevalence of hypertension will keep rising worldwide. There will be 1.56 billion persons worldwide with hypertension in 2025, which is about a 60% increase from the current estimate².

A study showed good compliance in Indian patients³. A meta-analysis showed that non-compliance to antihypertensive treatment is high in low to middle-income Asian countries⁴. A cross-sectional study carried out in Faisalabad, Pakistan, revealed similar results, showing poor compliance rates of the antihypertensive treatment among participants⁵. Another study from Pakistan showed that non-compliance could potentially explain poor blood pressure control in the area⁶.

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On comparing the earlier research data from Pakistan, frequency was found to be greater among men and in metropolitan regions. The incidence will probably rise over time quickly. Our findings highlight the value of high-caliber, long-term research to better understand hypertension and develop preventive and management strategies⁷.

Pakistan has a high rate of urbanization, its citizens consume a high caloric diet, have high salt and saturated fat intake and less fruits and vegetables in their diets. Numerous studies have proposed that these modifications are one of the reasons of hypertension being more common in urban than rural populations. Pakistan must enhance its efforts to prevent hypertension, which calls for the development of a prudent preventative strategy and the strengthening of existing anti-hypertension laws. There is no nationwide research on the disease, the most recent national inquiry was carried out more than 20 years ago. Despite the fact, we took into account several small- to intermediate-scale studies on the prevalence of hypertension from all around Pakistan^{7,8}.

These results collectively suggest that hypertension is and will remain a significant concern for healthcare professionals. Certain lifestyle changes must be made in addition to antihypertensive medications to regulate blood pressure. Some adjustments include dietary changes, smoking cessation, cutting back on drinking, controlling weight gain, increasing physical activity, and managing stress. In addition to lifestyle changes, individuals may need to take one or more antihypertensive medications to effectively regulate their blood pressure. The patients need to take the medication for the rest of their lives^{9,10}.

The most common consequences of hypertension, such as stroke, coronary heart disease, retinopathy, nephropathy and peripheral vascular disease, can be prevented or delayed with effective management of blood pressure¹¹. According to a 2022 study, the risk probability of stroke among hypertensive patients was 78.9%, (males 91.0%, females 70.7%), and with the persistence of hypertension, it would increase¹². Although trained healthcare professionals are responsible for teaching patients, each patient is ultimately responsible for adhering to their treatment plan. Merely one-third of hypertensive patients were adhering to their antihypertensive medication, according to a previous study^{13,14}.

The present study was conducted to assess the compliance of hypertensive patients to the treatment prescribed by the physician.

METHODOLOGY

This cross-sectional, observational research was carried out at a tertiary care hospital, Sheikh Zayed Medical College, Rahim Yar Khan. Ethical approval was sought from the Institutional Review Board (Reference number: 05/RDSU/SZMC, Date: 08-03-2023).

All patients fulfilling the inclusion criteria, and presenting to the medical outpatients department (OPD), from June to July 2023, were included in the study after their informed consent. Predesigned questionnaires were used to obtain data from the patients. The study subjects consisted of hypertensive patients who attended the OPD of the hospital's medical unit. The subjects included were 20 years and above of age, using antihypertensive drugs for at least the last 6 months. The exclusion criteria included patients with hypertension, not receiving medication. A non-probability convenience sampling technique was used for sample collection. The questionnaire included information regarding the sociodemographic status of the participants, and questions to assess

compliance with antihypertensive therapy.

The data were collected and analyzed, using SPSS version 23. Noncompliance with antihypertensive medication was labelled when the patient either omitted a single dose or stopped taking antihypertensive medicines altogether. All variables were either numerical or categorized. The chi-square test was applied for the categorical variables, as a test of significance, to determine the association between them. Variables included were sociodemographic e.g. sex, age, marital status, medication, and information regarding health care providers, and were analyzed, with compliance taken as a dependent variable. Some other variables like high cost of medicines, forgetfulness to take medications, availability of free medications in government hospitals, side effects of medication, trust in the efficacy of drugs, incurability of the disease and poor health education were also measured as the predictors of the treatment compliance. Statistical significance was taken at $p < 0.05$.

RESULTS

A total of 190 hypertensive patients were included in the study, 102 (53.68%) were males and 88 (46.34%) were females. The mean age of the study subjects was 56 ± 12 years. Out of all patients, 88 (46.31%) were married, and 102 (53.69%) were unmarried or widowed. Among the study subjects, 75 (39.5%) were illiterate and the rest had education standards as given in Table 1. Employment status was as given in Table 1. Total 88 patients (46.31%) were observed as compliant to the

CAPSULE SUMMARY

Lack of compliance with the prescribed treatment worsens the condition.

In this study compliance with antihypertensive treatment was evaluated at a tertiary care hospital. Predictors of drug compliance were also determined.

Compliance was found to be poor in more than half of the patients. The important predictors of noncompliance were forgetfulness and the high cost of medicines.

Table 1: Sociodemographic characteristics of the population

Variable	Frequency (n=190)	Percentage (%)
Sex		
Male	102	53.68
Females	88	46.32
Marital status		
Married	88	46.31
Widowed	82	43.15
Single	20	10.52
Education		
Illiterate	75	39.47
Primary	60	31.57
Matriculation	36	18.94
Fsc and above	19	10.00
Occupation		
Employed	105	55.26
Unemployed	41	21.57
Retired	44	23.15

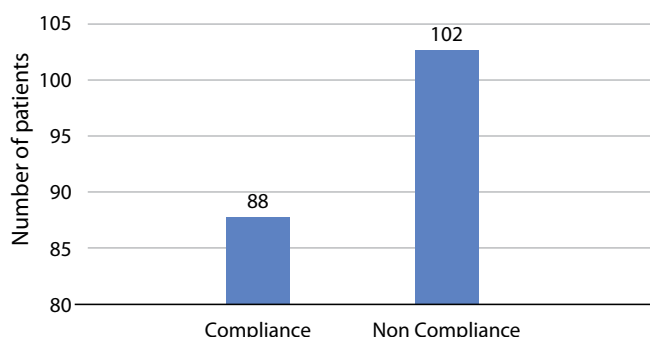


Figure 1: Compliance to Antihypertensive treatment among patients with Hypertension

antihypertensive drug treatment, while 102 study subjects (53.69%) were noncompliant (Figure 1).

The analysis of the predictors of antihypertensive drug treatment noncompliance showed that the high cost of the medicines (p=0.04) and forgetfulness (p=0.05) significantly predicted noncompliance to antihypertensive treatment (Table2).

DISCUSSION

Compliance to antihypertensive drugs treatment is of paramount importance as far as control of hypertension and prevention of disease is concerned⁹. The developing countries are struggling for good healthcare systems and when combined

Table 2: Predictors of drug compliance to antihypertensive medicines

Variables	Odds ratio	95% Confidence interval	p-value
Trust in drug efficacy	3.691	0.152-7.641	0.28
High cost of medicines	1.53	0.617-4.562	0.04
Government hospital drug provision	2.729	0.175-5.138	0.31
Side effects of drugs	0.712	0.019-3.149	0.19
Forgot to take drugs	0.152	0.175-1.629	0.05
Incurability of disease	0.068	0.017-0.274	0.35
Poor health education	1.715	0.451-2.472	0.21

with patient characteristics or attitudes towards health, adherence or compliance rates are very poor¹⁵. The results of this study showed that 88 (46.31%) study subjects were compliant with the prescribed antihypertensive drug treatment, while 102 (53.69%) subjects were noncompliant. The poor compliance among hypertensive patients in our study is comparable with other regional studies¹⁶. In one study, out of 306 outpatients with hypertension, 42.2% of patients were compliant with the prescribed medication. Medication adherence was substantially impacted by comorbid diseases(p<0.05) and multiple medications (p-values <0.05)¹⁷. Some socioeconomic, demographic, and environmental variables such as age, health and literacy were associated with adherence^{18,19}. Multiple variables, like socioeconomic, demographic and clinical factors have been explored in the quest for a more dependable no-adherence prediction. Even in the trials from which the predictive model was derived, composite score produced from several predictive parameters, while statistically significant, does not always result in precise prediction for individual patients²⁰.

In the current study, a few variables, including trust in drug efficacy, high cost of medicines, incurability of the disease, government hospital drug provision, side effects of drugs, forgetfulness to take drugs, and poor health education, were analyzed as predictors of compliance to the treatment. It was noted that the analysis of the predictors of antihypertensive drug noncompliance showed the high cost of the medicines, (p=0.04) and forgetfulness (p=0.05) significantly predicting noncompliance to antihypertensive treatment. There was a substantial decrease in compliance among the individuals who stated that their medicines were not easily accessible due to high costs. These results were in line with a previous study²¹. Even if the patients had the will but were unable to obtain the prescribed medication were less likely to comply. Participants in the previous studies who had experienced the side effects of the prescribed drugs had less compliance than the patients who had no side effects ever (p=0.19) This was similar to the findings of a study that showed that patients in whom side effects were reported had more chances of stopping the drugs,

resulting in a poor compliance²². Some hypertensive patients in that study missed to take the prescribed antihypertensive drugs. However, there was no statistically significant difference between the variables. Previous literature evidenced that adherence to antihypertensive drugs was noted to be sub-optimal, and was determined by the presence of comorbidity, lack of health education, counselling, over-the-counter drug practice and multiple drugs prescribed as a combination for the management of hypertension^{23,24}.

CONCLUSION

This study showed poor antihypertensive treatment compliance. Less than half of the patients reported compliance with the prescribed drugs. The significant predictors of noncompliance were forgetfulness and the high cost of medicines.

ETHICAL APPROVAL: Reference number: 05/RDSU/SZMC,
Date: 08-03-2023

CONSENT FOR PUBLICATION: Written, informed consent was obtained from the study participants.

AVAILABILITY OF DATA: Data is available from the corresponding author on a justified request.

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AUTHORS' CONTRIBUTION

- **Ghulam Mustafa:** Conception and design, critical revision
- **Muhammad Zafar Majeed:** Drafting the article, acquisition of data, analysis and interpretation of data,
- **Manzur Ahmed Manzur:** Drafting the article, acquisition of data, analysis and interpretation of data

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