

Noncompliance to Antihypertensive Medication in Patients with Essential Hypertension

HUSSAIN LIAQUAT MEMON¹, SYED ZAFAR AHMED², SHER MUHAMMAD³, ABDUL BARI BABAR⁴, JAVERIA⁵, AYAZ MIR⁶

¹Assistant Professor Cardiology, NICVD Karachi Pakistan

²Instructor Cardiology, Tabba Heart Institute Karachi Pakistan

³Consultant Cardiologist, Civil Hospital Karachi Pakistan

⁴Senior Registrar Cardiology, Hamdard College of Medicine & Dentistry, Hamdard University Karachi Pakistan

⁵Resident General Surgery, Liaquat University of Medical & Health Sciences Jamshoro Pakistan

⁶Assistant Professor of Adult Cardiology, NICVD Karachi Pakistan

Corresponding author: Hussain Liaquat Memon, Email: doctorhussain99@gmail.com

ABSTRACT

Background: The most common and important treatable cause of non-communicable diseases is hypertension. Hypertension leads to high mortality and morbidity. The management of hypertension is not even close to the optimal target, despite the fact that there are effective, cheap, and safe drugs available in the markets of developing countries.

Objective: This research aims to study antihypertensive therapy and examine the level of compliance with this therapy, along with the factors that contribute to non-compliance in this area.

Study design: A cross-sectional study

Place and Duration: This study was conducted at NICVD Karachi from December 2021 to December 2022.

Methodology: All of the patients involved had hypertension, and they were adults. All the patients were those who regularly attended the hypertension clinic of this hospital, and they had been taking antihypertensive drugs for at least 1 month. A closed-ended questionnaire was used to interview the patients before the test was conducted. The data that was gathered through the questionnaire included gender, age, attendance of the patient at the hypertension clinic, patients having compliance with prescribed antihypertensive therapy drugs, and the reasons for non-compliance.

Results: There were a total of 300 patients, of whom 150 were female and 150 were male. The mean age was 51 years. The majority of the participants were from the age group of 41 to 60 years, representing 52% of the participants. The majority of the hypertensive patients (65%) had poor compliance with the drugs they were prescribed. A total of 58% of the patients were not regular attendees at the clinic. Overall, 26% of participants stopped using the drugs because there were no symptoms seen after they started using them.

Conclusion: The percentage of hypertensive patients who had poor compliance with the prescribed drugs was very high.

Keywords: Adults, hypertension, compliance, antihypertensive drugs

INTRODUCTION

Countries that are well-developed undergo an epidemiological transition due to which they have to face the extra burden of both non-communicable and communicable diseases [1]. The most common, as well as an important treatable cause, among non-communicable diseases is hypertension [2]. Hypertension leads to high mortality and morbidity. The management of hypertension is not even close to the optimal target, despite the fact that there are effective, cheap, and safe drugs available in the markets of developing countries [3].

Pakistan is one of those countries where there is a high prevalence of hypertension. There is a study in Pakistan that shows 18% of the adult population is suffering from hypertension, and the prevalence is high in the urban population [4]. The National Health Survey of Pakistan states that there are 5.3 million females and 5.5 million males who suffer from hypertension, and only >3% have controlled hypertension [5]. It is said that in this area, hypertension and complications in the hospital's inpatient and outpatient departments are very high [6]. However, the exact data is not available.

The degree to which the patient obeys the advice related to medical, dietary, and lifestyle changes, takes treatments as prescribed, and regularly takes appointments for the purpose of follow-ups is called compliance [7]. Compliance can be expressed in terms of the percentage of prescribed doses that have been completed. Moreover, it can be examined in a number of ways, which can be the following: clinical measures (use of questionnaires, clinical judgement of doctors, and evaluation of promptness for appointments), pharmacological measures (using biological markers integrated into the tablets), and physical measures (counting remaining pills, verifying prescription renewals) [8]. Despite the fact that there is no gold standard system that can be used to measure drug compliance precisely, the Medication Event Monitoring System (MEMS) or electronic pill counter can be used as the best possible system to measure compliance [9]. Although pharmacological measures have higher

specificity and sensitivity, they are still difficult to use in standard practice.

When the patient has a poor understanding of hypertension, poor knowledge, a poor perception of hypertension, complex antihypertensive drugs, and financial constraints, it is said to be poor compliance [10]. When the patient takes at least 80 percent of their antihypertensive drugs, they are considered to be sufficiently compliant with their medication [11]. This research aims to study antihypertensive therapy and examine the level of compliance with this therapy, along with the factors that contribute to non-compliance in this area.

METHODOLOGY

This is a cross-sectional study. Our hospital serves a wide range of residents from both rural and urban areas. All of the patients involved had hypertension, and they were adults. All the patients were those who regularly attended the hypertension clinic of this hospital, and they had been taking antihypertensive drugs for at least 1 month. It took 14 months to do a sample selection. Secondary and primary hypertensive patients were included. Patients who were pregnant and had hypertension were not included in this research. Also, patients with multiple comorbid conditions were excluded.

A closed-ended questionnaire was used to interview the patients before the test was conducted. The informed written consent of participants was taken. The data that was gathered through the questionnaire included gender, age, attendance of the patient at the hypertension clinic, patients having compliance with prescribed antihypertensive therapy drugs, and the reasons for non-compliance. When the participant regularly attended the follow-ups and regularly took all prescribed drugs for a minimum of six days a week, it was considered good compliance. There was also a section that focused on the reasons that were associated with poor and good compliance. The categorical variables were expressed in percentages. Appropriate statistical software was used to analyze the data.

RESULTS

There were a total of 300 patients, of whom 150 were female and 150 were male. All of the participants' ages ranged from 20 to 80 years. The mean age was 51 years. The majority of the participants were from the age group of 41 to 60 years, representing 52% of the participants. Most of the participants in this research (70%, n = 210) were from suburban and rural areas, while the remaining 30% (n = 90) were from urban areas. Only a small proportion of participants had formal education (35%, n = 105). Table 1 shows the level of compliance with drugs among hypertensive patients.

Table 1: Level of compliance with drugs among hypertensive patients

Compliance level	N	%
Good	105	35
Poor	195	65
Total	300	100

Table number 2 shows the regularity of hypertensive patients attending the clinic.

Table 2: regularity of hypertensive patients attending the clinic

Regularity	N	%
Not regular	174	58
Regular	126	42
Total	300	100

Table number 3 shows factors that were responsible for poor compliance.

Table 3: factors that were responsible for poor compliance

Factors	N	%
Lack of funds	40	13.3
Forgetfulness	15	5.0
Busy schedule	9	3.0
Stopped using drugs because no symptoms after using drugs	78	26.0
Non-availability of drugs	25	8.3
Exhaustion of prescribed drugs	45	15.0
Alternative medicine	19	6.5
Side effects of drugs	8	2.6
Suggestions from unqualified doctors	37	12.3
The idea that hypertensive drug has to continue life-long	24	8.0

DISCUSSION

According to the results of this research, it was observed that the majority of hypertensive patients (65%) had poor compliance with the drugs they were prescribed. There are not enough studies conducted on this matter in Pakistan, but the burden of hypertension in Pakistan is very high. A recent study conducted by Hussain et al. revealed similar results to our research. According to their results, 85% of the patients had poor compliance with the drugs [12]. Another study by Alam et al. revealed that there was a lack of awareness of using antihypertensive drugs among both urban and rural populations [13]. However, there are some studies that show the opposite results. There was research conducted by Almas et al. that showed that the majority of hypertensive patients had good compliance with the drugs (57%), and the remaining 43% had poor compliance with the drugs [14]. Another study by Shaikh NA revealed similar results, showing that 54% of the hypertensive patients had good compliance with the drugs [15]. There was a study conducted in Switzerland that showed good compliance in the majority of the patients (79.8%) [16].

There are a number of factors that are responsible for the poor compliance of hypertensive individuals with drugs. These factors depend on religious, cultural, and socioeconomic backgrounds [17]. The difference in factors can also be seen in developed and underdeveloped countries. According to our research, 26% of participants stopped using the drugs because

there were no symptoms seen after they started using them. A total of 13.3% of patients stopped using drugs due to a lack of funds. There are also many situations where some unqualified doctors suggest the patients stop using the drugs because their BP is under control. This factor was considered important in our research. Some factors that were less important were busy schedules, forgetfulness, side effects of drugs, and taking alternative drugs. There was a Japanese study conducted that revealed that the majority of their patients, representing 63.8%, were taking 95% to 100% of the drugs that were prescribed to them [18]. On the other hand, WHO research in Bangladesh and India discovered that just 25% of patients were complying with the recommendations [19]. Economic constraints, annoyance with daily drug consumption, the adoption of alternative treatments, and feelings of well-being were all recognized in studies conducted in African nations like Nigeria as barriers to compliance [20].

There were a few limitations to this research. Firstly, the sample size of our research was small. Secondly, the degree of compliance with the drug was mostly based on clinical judgement.

CONCLUSION

In conclusion, the percentage of hypertensive patients who were having poor compliance with the prescribed drugs was very high, and there were a number of factors associated with this poor compliance.

REFERENCES

- Ahmed N, Abdul Khaliq M, Shah SH, Anwar W. Compliance to antihypertensive drugs, salt restriction, exercise and control of systemic hypertension in hypertensive patients at Abbottabad. *J Ayub Med Coll Abbottabad*. 2008 Apr 15; 20(2):66-9.
- Hashmi SK, Afridi MB, Abbas K, Sajwani RA, Saleheen D, Frossard PM, Ishaq M, Ambreen A, Ahmad U. Factors associated with adherence to antihypertensive treatment in Pakistan. *PloS one*. 2007 Mar 14; 2(3):e280.
- Hajjar I, Kotchen TA. Trends in prevalence, awareness, treatment, and control of hypertension in the United States, 1988–2000. *JAMA* 2003; 290:199–206.
- Muxfeldt ES, Nogueira AR, Salles GF, Bloch KV. Demographic and clinical characteristics of hypertensive patients in the internal medicine outpatient's clinic of a university hospital in Rio de Janeiro. *Sao Paulo Med J* 2004; 122:87–93.
- Pakistan Medical research Council. National health survey 1990-1994: health profile of Pakistan. Islamabad: PMRC. 1998.
- Qureshi NN, Hatcher J, Chaturvedi N, Jafar TH. Effect of general practitioner education on adherence to antihypertensive drugs: cluster randomised controlled trial. *Bmj*. 2007 Nov 15; 335(7628):1030.
- Eze-Nliam CM, Thombs BD, Lima BB, Smith CG, Ziegelstein RC. The association of depression with adherence to antihypertensive medications: a systematic review. *Journal of hypertension*. 2010 Sep; 28(9):1785.
- Saleem F, Hassali MA, Shafie AA, Awad AG, Bashir S. Association between knowledge and drug adherence in patients with hypertension in Quetta, Pakistan. *Tropical Journal of Pharmaceutical Research*. 2011; 10(2).
- Ali K, Adil SO, Soomro N, Bibi A, Kalam S. Drug compliance and its associated factors among hypertensive patients in Pakistan: A cross-sectional study. *Hospital Pharmacy*. 2018 Dec; 53(6):389-92.
- Rehman A, Sattar A, Abaidullah S, Hassan M. Evaluation of Cardiovascular Risk Factors in Patients with Essential Hypertension. *Ann King Edward Med Coll* 1999;5:134–7
- Wolf-Maier K, Cooper RS, Kramer H, Banegas JR, Giampaoli S, Joffres MR. et al. Hyper tension treatment and control in five European countries, Canada, and the United States. *Hypertension*. 2004; 43:10–17.
- Hussain SM, Boonshyer C, Ekram ARMS. NonAdherence to antihypertensive treatment in essential hypertensive patients in Rajshahi Bangladesh. *Anwer Khan Modern Medical College Journal* 2011; 2(1): 9-14.
- Alam DS, Chowdhury MAH, Siddique AT, et al. Awareness & control of hypertension in Bangladesh Follow up of hypertensive cohort. *BMJ open* 2014; 4: 6.
- Almas A, Hameed A, Ahmed B, Islam M. Compliance to antihypertensive therapy. *J Coll Physician & Surg Pak* 2006; 16:23–6.
- Shaikh NA. Blood Pressure Control, follow-up and Drug Compliance among Hypertensive Patients at Civil Hospital, Karachi. *Med Channel* 1999;5:5–10
- Muesch R, Schroeder K, Dieterle, et al. Relationship between insufficient response to antihypertensive & poor compliance with treatment: A prospective case control study. *BMJ* 2001; 32: 143-5.
- Eight report of the Joint National Committee (JNC-8). Management of high blood pressure in adults. *JAMA* 2014; 311(5): 507-20.
- Fujii J, Seki A. Compliance improving strategies in hypertension: the Japanese experience. *J Hypertens* 1985; 3(1): 19-22.
- Thankkapan KR and Hypertension study group. Hypertension among the elderly in Bangladesh and India: A multicentre study. *Bulletin of the World Health Organization* 2001; 79(60): 490-9.
- Isezuo AS, Opera TC. Hypertension awareness among Nigerians in a Nigerian tertiary health institution. *Sahel Medical Journal* 2000; 3(2): 93-6.