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Attitude and adherence to anti-hypertensive treatment among parents of medical students in Calicut, Kerala - A cross-sectional study

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ABSTRACT

Background

Hypertension is a chronic disease characterized by elevation of blood pressure. Adherence to antihypertensive medications is crucial for achieving hypertension control. Uncontrolled hypertension is an important risk factor for stroke, coronary heart disease, peripheral vascular disease, heart failure, and chronic kidney disease. Our study aimed to check for anti-hypertensive drug compliance for known hypertensive patients among the parents of medical students at Malabar Medical College. The study also aimed to determine the reasons and the complications of non – compliance.

Methods

A cross-sectional study was conducted at Malabar Medical College Hospital, Calicut. Participants were known hypertensive parents of Third MBBS students. Data was collected using English and Malayalam questionnaires. Socio-demographic details, attitude towards treatment, and adherence to anti-hypertensive drugs were assessed using a semi-structured questionnaire. Results were expressed as frequencies, mean, standard deviation, and proportions.

Results

A total of 42 parents among the students were found to be known hypertensives. Of these 39 (92.8%) participated in the study. The mean age was 56.44 ± 6.57 years. Male to female ratio was 2:1. The average duration of hypertension was 6.7 ± 6.9) years. Only 3 (7.7%) were strictly adherent to their anti-hypertensive regimen. Twenty-six (66.7%) subjects attempted to be compliant with the medications. Various reasons for non-compliance were side effects of the drugs (8, 20.5%) and traveling (14, 35.9%). About a fifth of the study participants (8, 30.5%) skipped medicines sometimes and 13 (33.3%) unintentionally forgot to take medicines Blood pressure monitoring was done by 34 (73.9%). Most participants (33, 84.6%) felt the need to change their lifestyle.

Conclusion: Adherence to antihypertensive drugs and weekly BP monitoring was low. Sensitization regards to medication compliance is recommended.

Keywords: Hypertension, Adherence to anti-hypertensive medications, Anti-hypertensive treatment

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INTRODUCTION

Hypertension is a chronic disease characterized by elevation of blood pressure. Medication compliance is the act of adherence to the advice by the physician with respect to the timing, dosage, and frequency of anti-hypertensive drugs [1]. Uncontrolled hypertension is an important risk factor for stroke, coronary heart diseases, peripheral vascular disease, heart failure, and chronic kidney disease [2,3]. Adherence to antihypertensive medications is crucial for achieving hypertension control. Despite more efficacious treatments available, non-adherence to the medications can be catastrophic. High blood pressure was documented to be a primary or contributing cause for half a million deaths in the United States in 2018 [4].

According to the "Rule of halves", only about half of the hypertensive subjects in the general population were aware of the condition, only about half of those aware of the problem were being treated, and only about half of those treated were considered adequately treated [5]. Patient's knowledge about the disease, past experiences with the health-care system, adherence to other prescriptions, the doctor-patient relationship, patient's perception of health, and the benefits of the advice are factors associated with adherence [6,7].

In our study, the objective was to assess anti-hypertensive drugs' compliance and attitude towards treatment among known hypertensive parents of third year medical students at Malabar Medical College. The study also aimed to determine the reasons and the complications of non – compliance.

Material and Methods

Study setting: Malabar Medical College and Research Centre

Study design: A Cross-sectional study was conducted. A non-probability purposive sampling method was used.

Study period: The study was conducted during January 2021

Study population: Known hypertensive parents of a class of 150 3rd year MBBS students

Inclusion criteria: Parents already diagnosed with hypertension. 42 parents were found to be hypertensive.

Exclusion criteria: Non-hypertensive parents and those unwilling to participate.

Sample size: 39 of the 42 hypertensive parents participated in the study.

Protocol, as set out by the Helsinki Declaration, was followed. Institutional ethics committee of Malabar Medical College Hospital and Research Center, Kozhikode, Kerala, India, approved the study. The confidentiality of participants was maintained. Participants' consent was taken online before form submission

Study tool: A bilingual (English and Malayalam) pre-tested close-ended questionnaire was used. It consisted of 3 parts:

Part A: Consisted of questions on demography to get an overview of the patient.

Part B: Questions with regards to compliance and regularity of anti-hypertensive drugs. Self-reported adherence, attitude, and compliance with the medications were assessed.

Part C: Consisted of questions about the complications due to hypertension.

Data collection and analysis:

Questionnaires were prepared and shared in Google Forms via the son/daughter of the study subjects. The data was analyzed using Microsoft Excel. Results were expressed as Mean, Standard Deviation, and Proportion.

Results

Of the 42 study subjects identified as hypertensive parents of the 3rd year MBBS students, 39 participated in the study.The mean age of the study subjects was 56.44 years with SD ± 6.57 years. There were 26 males and 13 females in the study. Male to female ratio was 2:1. Out of the 39 subjects, 16 (41%) were graduates, 8 (20.5%) had professional degree, 7(17.9%) each completed intermediate/diploma and high school and 1 (2.6%) was illiterate. Out of the 39 subjects, 12 (30.8%) were clerks, shop owners or farmers, 10 (25.6%) were professionals, 8 (20.5%) were unemployed, 4 (10.3%) were skilled workers and, 1 (2.56%) each are semi-skilled worker and unskilled worker. (Table 1)

Table 1: Sociodemographic variables among the study population (N=39)

Variable	N	%
Gender		
Male	26	66.7
Female	13	33.3
Education		
Professional	8	20.5
Graduate	16	41.1
Intermediate/diploma	7	17.9
High school	7	17.9
Illiterate	1	2.6
Occupation		
Professional	10	25.6
Semi-professional	3	7.7
Clerk, Shop-owner, Farmer	12	30.8
Skilled worker	4	10.3
Semi-skilled worker	1	2.56
Unskilled worker	1	2.56
Unemployed	8	20.5

The average duration of hypertension was 6.7 (SD ± 6.9) years. Only 3 (7.7%) were strictly adherent to their anti-hypertensive regimen. Twenty-six (66.7%) subjects attempted to be compliant with the medications. Various reasons for non-compliance were side effects of the drugs (8, 20.5%) and traveling (14, 35.9%). About a fifth of study participants (8, 30.5%) skipped medicines sometimes and 13 (33.3%) unintentionally forgot to take medicines (Table 2).

Table 2: Anti-hypertensive medication compliance

Responses	N	%
Strict adherence to the anti-hypertensive medicine regimen	3	7.7%
Stopped taking medications due to the side effects of medicines	8	20.5%
Skip medicines at times	8	20.5%
Forget to take medicines	13	33.3%
Miss medications due to work or travel	14	35.9%

Of the 39 participants, 10 (25.6%) felt numbness in their limbs or blurred vision recently and 15 (38.5%) felt distress during their daily activities

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Table 3: Attitude and practice toward hypertension control

Responses	N	%
Monitoring of blood pressure	34	73.9
Monthly monitoring of blood pressure	27	69.2
Weekly monitoring of blood pressure	7	17.9
Consultation with a specialist since diagnosis	26	66.7
Change in drug or dosage of medication since diagnosis	12	30.8
Felt the need to change lifestyle	33	84.6

Blood pressure monitoring was done by 34 (73.9%). Monitoring was done weekly (7, 17.9%) and monthly (27, 69.2%). About two-thirds (26, 66.7%) had consulted a specialist at least once post-diagnosis. About one-third (12, 30.8%) had to change their drug or dosage of medication since diagnosis. A majority (33, 84.6%) felt the requirement to change their lifestyle (Table 3).

DISCUSSION

Hypertension continues to remain a challenging non-communicable disease. Hypertension compliance is crucial for positive health. A cross-sectional study at Mumbai found that only 39.4% of the participants were compliant to anti hypertensive medications [8]. Common reasons for skipping doses were forgetfulness (41.2%) and discontinuing the medication when feeling well (30.3%). [7] These reasons were similar to our study's findings. Compliance in our study (66.7%) was higher than the compliance (23.7%) in another community-based study done in Aligarh [9].

A community-based cross-sectional study[10] in July 2016 among 189 known hypertensives in rural Kerala found High adherence (46%), medium (41.3%), and low adherence (12.7%). The compliance was higher in our study. A meta-analysis done by Tadess Melaku Abegaz et al.[11], comprising 12,603 patients found almost half (45.2%) of the hypertensive patients were non-adherent to medications. A study by Fortuna et al. reported that 37.5% reported low adherence [12]. A record-based study in Jamaica over a period of 18 years (1995 and 2013) found that 75% of the patients who attended public primary care clinics had uncontrolled hypertension [13]. Another cross-sectional study by Emmanuel Acheampong et al, at a Hypertension Clinic at the Kintampo Municipal Hospital, Ghana found noncompliance to antihypertensive therapy was 58.6% [14]. This non-compliance is higher than in our study. Higher compliance in our study could be attributed to a family member linked to medical education.

Philip S Wang, Rhonda L Bohn, found out that depression was significantly associated with non-compliance [15]. Almost three-fourths (73.8%) of the patients monitored their blood pressure. A majority (33, 84.6%) felt the need to change their lifestyle. Similar knowledge to change without the attempt to change was observed in a study in Sri Lanka [16]. Our study has the limitation of being a single-center study with a small sample size. Bigger multi-centric studies are recommended.

CONCLUSION

In our dipstick study for hypertension drugs' compliance amongst the medical students' parents, it is found that 66.7% showed adherence. Blood pressure was being monitored by 34 (73.9%). Most participants (33, 84.6%) acknowledged the need to change their lifestyle. Traveling and forgetfulness were the most common reasons for non-compliance. Sensitization regards to medication compliance is recommended.

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