

Impact of Patients' Knowledge, Attitude and Practices on Hypertension on Compliance with Antihypertensive Drugs in a Resource-poor Setting

[Az Gelirli Toplumlarda Hipertansiyon Hastalarının Bilgi, Tutum ve Uygulamalarının Antihipertansif İlaçlara Uyuma Etkisi]

SUMMARY

AIM: The study objective was to assess the knowledge, attitudes and practices on hypertension of 240 adult Nigerian Africans with hypertension and their impact on compliance with antihypertensive drugs

METHOD: It was a descriptive survey of 240 consented consecutive adult patients with hypertension who attended the Cardiology Clinic of the Federal Medical Centre, Ido-Ekiti, Nigeria, between April 2008 and March 2009. The hospital is rural health institution in south west Nigeria

RESULTS: One hundred and fourteen patients (47.5%) were men and 126 (52.5%) were women. Mean age was 48.8±13.2 years. Mean systolic and diastolic BP were 156.8±25.1 mmHg and 98.4±18.7 mmHg respectively. Only less than half (47.1%) showed good knowledge of their hypertension. However, 141 (58.8%) possessed good knowledge of their antihypertensive drugs. Knowledge of hypertension was better in women than in men (59.3% vs 40.7%, p=0.014).

Compliance to medications was good in only 77 (32.1%) of the patients. The reasons attributed to included: poor knowledge of the disease and ignorance of the need for long-term treatment (95, 32.6%); high cost of medications (63, 21.7%); religious practices and cultural beliefs (37, 12.5%); adverse drug reactions (19, 6.5%); inadequate access to medical care (18, 6.2%); and use of complimentary medications (60, 20.5%).

CONCLUSION: The majority of our hypertensive patients still have a poor knowledge of their disease with a significant negative impact on compliance with medications. No doubt, there is a need to invent more effective education strategies directed towards the public in general and the patients in particular.

ÖZET

AMAÇ: Çalışmanın amacı hipertansiyonu olan 240 yetişkin Nijerya Afrikalı'nın hipertansiyon üzerine bilgi, tutum ve uygulamalarının antihipertansif ilaç uyumuna etkilerini değerlendirmektir.

YÖNTEM: Bu tanımlayıcı araştırma, Nisan 2008 ve Mart 2009 tarihleri arasında Nijerya'nın İdo Ekiti eyaletinde bulunan Federal Tıp Merkezi Kardiyoloji Kliniğine başvuran 240 hipertansiyonlu yetişkin üzerinde gerçekleştirilmiştir. Hastane güney Nijerya'nın batısındaki kırsal kesimde kurulu bir sağlık kuruluşudur.

BULGULAR: Katılımcılardan, 114 hasta (%47,5) erkek, 126 hasta (%52,5) kadındı. Yaş ortalaması 48,8±13,2 yıl olarak bulunmuştur. Ortalama sistolik ve diastolik kan basıncı 156,8±25,1 mmHg ve 98,4±18,7 mmHg ölçülmüştür. Katılımcıların yarısından birazı azı (%47,1) hastalığı konusunda geniş bilgiye sahiptir. Ancak, 141 (%58,8) kişi kullandığı antihipertansif ilaç konusunda detaylı bilgiye sahiptir. Hipertansiyon konusunda bilgi düzeyi kadınlarda erkeklere göre daha iyi bulunmuştur (sırasıyla %59,3 ve %40,7, p=0.014). Tedavide ilaç uyum sadece 77 hastada (%32,1) yeterli bulundu. Uyumsuzluğun nedenleri: hastalık hakkında bilgisizlik ve hastalığın uzun vadeli tedavi gerektirdiğini bilmeme (95, %32,6); ilaçların pahalı olması (63, %21,7); dini uygulamalar ve kültürel inançlar (37, %12,5) advers ilaç reaksiyonları (19, %6,5); tedaviye yetersiz ulaşım (18, %6,2) alternatif tıp kullanımı (60, %20,5).

SONUÇ: Araştırmaya katılan hipertansif hastaların çoğunluğunda, ilaç uyum ve hastalık konusunda bilgi düzeyi zayıf olduğu görülmüştür. Kuşkusuz; topluma ve özellikle de hastalara yönelik daha etkin eğitim stratejileri geliştirilmesine ihtiyaç bulunmaktadır.

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INTRODUCTION

Hypertension (HT) has been recognized as a common cardiovascular disease and a major risk factor for congestive heart failure, ischaemic heart disease, chronic renal failure and stroke (1-3).

Hypertension has become a significant problem in many developing countries experiencing epidemiological transition from communicable to non-communicable chronic diseases (4-6). The prevalence of HT in Nigeria, which was 15.3% (urban) and 10.6% (rural) in the general population

(7-8) was later estimated in the hospital setting to be 17-20% (9). There is no doubt that knowledge and attitudes of patients have impact on the management of their illnesses, and improving knowledge is known to improve compliance with treatment in conditions such as hypertension (10-14). Poor compliance with prescribed drugs is a common and important problem in clinical practice which can result in treatment failure and poor outcomes (15). In HT, knowledge and attitudes of the patients can influence compliance, the blood pressure control, morbidity and mortality of the patients. The study objective was to assess the knowledge, attitudes and practices on HT of adult Nigerian Africans with HT and their impact on compliance with antihypertensive drugs

MATERIAL AND METHOD

It was a cross sectional survey conducted in a rural health institution in south west Nigeria between April 2008 and March 2009. The protocol for the study was approved by the Ethical and Research Committee of the Hospital. Two hundred and forty consecutive adult Nigerians with HT consented to participate in the study. The eligibility criteria are as follow: 1, they had a diagnosis of HT at least one year ago; 2, they had been using antihypertensive drugs for at least one year; and 3, they were at least 18 year old

Clinical Evaluation, Definition and Measurements

Three blood pressure readings were obtained at ≥ 5 min intervals with the subject in the sitting position. Blood pressure was measured using mercury sphygmomanometer (Accoson, London, UK) with appropriate cuff and systolic blood pressure (SBP) and diastolic blood pressure (DBP) based on Korotkoff first and fifth sounds respectively. HT is defined as persistent elevation in blood pressure $\geq 140/90$ mmHg (1). The average of the last two readings was used for the analyses. Weight and height were measured and body mass index (BMI) was calculated as weight (in kilogram) divided by the square of height (in meter). Obesity was defined as a $BMI \geq 30$ kg/m²

Assessment of Knowledge, Attitudes and Practices on Hypertension

Patients' knowledge, attitudes and practices on HT were assessed using a standardized and structured questionnaire which was developed and pre-tested for the study. It had both closed and open-ended questions and was written in English. Clarification

was provided whenever respondents had difficulties with any aspect of the questionnaire. Questions were translated into the local Yoruba language for respondents who could not understand English. Consent was obtained after the purpose of the study was adequately explained to the respondents. The questionnaire covered sociodemographic, occupational and educational variables, information on knowledge of HT and its treatment, attitude toward and practices affecting compliance to antihypertensive drugs. Closed ended questions often included three or more answering options in addition to the option "I do not know", which was a possible option for many questions. Answering option, "No" was always preceding option, "Yes". Responses to the questions on knowledge were scored. The total score obtainable was 12 and any score less than 7 was described as poor knowledge.

Assessment of Compliance with Antihypertensive Drugs

Compliance to antihypertensive drugs was assessed for each participant using the pill-counting method. The pill-counting method is the traditional 'gold standard' for measuring drug compliance and it is relatively appropriate for resource-poor settings like ours.

Data Analysis

The data collected were analysed with SPSS 11.5 software. Percentages and proportions were used to describe categorical variables while means and standard deviations were used for numerical variables. Chi-square was used to analyse differences between variables as appropriate. $P < 0.05$ was taken as indicating statistical significance.

RESULTS

The study participants consisted of 114 (47.5%) men and 126 (52.5%) women. The mean age was 48.8 ± 13.2 years (48.9 ± 13.8 for men and 47.4 ± 12.8 for women). The means of SBP and DBP were 156.8 ± 25.1 mmHg and 98.4 ± 18.7 mmHg respectively. The mean duration of HT was 6.4 ± 5.2 years and that of BMI was 23.9 ± 5.7 Kg/m². Forty three (17.9%) of the participants had coexisting diabetes mellitus (DM). Less than half (47.1%) showed good knowledge of HBP. For instance, 54.6% and 37.9% knew that high salt intake and obesity respectively were associated with HBP.

Table 1. Reasons for poor compliance with antihypertensive drugs

Reasons	Frequency	%
Poor knowledge of the disease and ignorance of need for long-term treatment	95	32.6%
High cost of antihypertensive drugs	63	21.7%
Religious practices and cultural beliefs	37	12.5%
Adverse drug reactions	19	6.5%
Inadequate access to medical facilities and care	18	6.2%
Use of complimentary medications	60	20.5%

Table 2. Impact of knowledge of hypertension on level of compliance with drugs

	Good compliance		Poor compliance		Total	
	N	%	N	%	N	%
Good knowledge	69	28.8	44	18.3	113	47.1
Poor knowledge	8	3.3	119	49.6	127	52.9
Total	77	32.1	163	67.9	24	100

One hundred and forty one (58.8%) possessed good knowledge of their antihypertensive drugs. Majority (78.8%) of the participants with good knowledge of HT had at least primary school education. Knowledge of HT was better in women than in men. For example, 59.3% of women versus 40.7% of men ($p=0.014$) had good knowledge of hypertension. One hundred and twenty nine respondents (53.8%) believed that the goal of treatment was to cure the disease while 79 (32.9%) believed that it was to control their blood pressure.

Only 77 (32.1%) showed good compliance to their antihypertensive drugs. The reasons attributed to poor compliance included: poor knowledge of the disease

and ignorance of need for long term treatment (95, 32.6%); high cost of drugs (63, 21.7%); religious practices and cultural beliefs (37, 12.5%); adverse drug reactions (19, 6.5%); inadequate access to medical facilities and care (18, 6.2%); and use of complimentary medications and practices (60, 20.5%)

DISCUSSION

The study shows that more than half of our patients have poor knowledge of their disease. Although the study was conducted in a clinical setting that inherently include health conscious people, this

finding is not unexpected in view of the dysfunctional health system in the country where there is acute shortage of workforce with large populations of patients and rarely any useful time to attend to patients meaningfully. A similar problem was also found in patients with other chronic diseases such as diabetes mellitus (16,17). However, data on patients' knowledge of their HT are improving in other developing countries with similar epidemiological transition as in Nigeria. This calls for a holistic reform of our healthcare delivery system and an institution of a nationwide grass root programme of mass public education on HT (18,19).

Majority of the patients with good knowledge of HT had at least a primary school education. This finding is not unexpected as the patients' level of education is generally known to have positive influence on their understanding of specific health education programmes and relevant behaviour change techniques (14,20). However, it is important to note that many patients still have a lopsided understanding of the aim of their treatment when more than half of them believe that they can be cured of HT. This obviously has a ready consequence in poor compliance, poor control of HT and increased risk of morbidity and mortality (21-23).

In our study, compliance with antihypertensive drugs was poor. Although the study was done on out-patients in a clinical setting, and the method of assessment of compliance might be subjective, findings are not largely different from reports of previous studies (24-27). Reasons for poor compliance included poor knowledge of disease and ignorance of need for long-term treatment, high cost of medications, adverse drug reactions, religious practices and cultural beliefs, lack of access to medical care and facilities and use of complimentary medications and practices. Among out-patients, compliance with antihypertensive drugs range from 20% to 56% (28,29). Poor compliance with drugs is an inherent problem in the treatment of chronic asymptomatic conditions and is one major reason why HT may not be treated effectively with drugs.29 Poor compliance to antihypertensive drugs may also account for apparent resistant to treatment in more than one third of patients with HT (30,31). In this study, poor knowledge of HT and of antihypertensive drugs had a significant negative impact on compliance. Patient's level of education, skilled occupations and being health conscious have been

previously shown to be associated with improved compliance among patients with HT (24,32).

Although the issue of compliance with antihypertensive drugs requires a holistic approach that takes into consideration all the identified factors, there is need to invent and adopt new means of educating the public in general and the patients in particular (33).

CONCLUSION

The poor level of compliance with antihypertensive drugs in this study underscores the need to develop strategies to launch population-wide programmes on primary prevention of HT (34). This appears to be proactive and more cost-effective than antihypertensive drugs and the increased morbidity and mortality associated with HT and its complications. However, relevant measures should also be taken to address the various lapses in knowledge, attitudes and practices of patients on HT which negatively impact on compliance with drugs. To cap it all, the issue of adequate and effective patient education can not be overemphasized

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