

ANTIHYPERTENSIVE THERAPY AMONG HYPERTENSIVE PATIENTS AS SEEN IN THE MIDDLE BELT OF NIGERIA

I. A. Katibi and J. K. Olarinoye

Department of Medicine, University of Ilorin Teaching Hospital, Ilorin, Nigeria

Reprint requests to: Dr. I. A. Katibi, Department of Medicine, University of Ilorin Teaching Hospital, P. O. Box 13880, Ilorin, Kwara State, Nigeria. E-mail: iakatibi@skannet.com

Abstract

Background: In spite of increased awareness on hypertension among Nigerians, control of blood pressure among hypertensive patients is still unacceptably poor. This study was therefore designed to assess the compliance rate to antihypertensive therapy among Nigerians and factors influencing it.

Method: Two hundred and twenty four consecutive hypertensive patients were prospectively studied using a pre-tested questionnaire.

Results: A total of 100 males (44.6%) and 124 females participated in the study. The age ranged between 35-82 years. Calcium channel blockers were the most frequently prescribed medication (39.3%) followed by diuretics (14.3%). Combination therapy was seen in 35.7% of the patients. B-blockers were the rarest drug as a single agent (1.8%). Using multivariate analysis, access to the hospital was the only independent predictor of Systolic Blood Pressure level. 39.3% of the respondents volunteered history of having stopped their drugs at one time or the other over a one year period for different reasons with high cost and scarcity of drugs being the most prevalent. 85.7% of the patients spent between two hundred and two thousand Naira monthly on drug procurement.

Conclusion: Calcium channel blockers are rapidly gaining ground as first line antihypertensive agents in tertiary hospitals in Nigeria. This study has underscored the need to bring health care centres closer to the people in a bid to improve the control of blood pressure.

Key words: Hypertension, drugs, therapy, Nigerians

Introduction

Adequate blood pressure (BP) control is crucial to though not exclusively related to reduction in morbidity and mortality associated with hypertension.

¹ Among several others, compliance to therapy is the key factor towards the attainment of good control of BP. ² Various studies highlighting psychosocial and economic factors modulating compliance to antihypertensive therapy have been reported albeit mostly among the Caucasian population. ³⁻⁶ This study was therefore embarked upon to re-assess the compliance rate to antihypertensive therapy among Negroes including the determination of other variables that may influence it. This has become necessary in view of the rapidly changing socioeconomic profile of the people of Nigeria.

Materials and Methods

Two hundred and twenty four hypertensive patients were enrolled into the study at University of Ilorin Teaching Hospital, Ilorin, Nigeria in the year 2002. Non-willingness to participate in the study by the patient was the only exclusion criteria. Hypertensive

patients with other concomitant medical conditions were also enrolled into the study. HBP in this context was diagnosed using the recommendation of JNC (VII) on the detection, evaluation and monitoring of high blood pressure⁷. Subjects were either hypertensive patients on antihypertensive drugs or newly referred hypertensive patients to the authors for initiation of therapy. BP was measured in the sitting position after resting for about 5-10 minutes using the right upper arm and an appropriately sized cuff. Systolic and diastolic BP were taken at the first and fifth Korotkoff's sound respectively. A minimum of three different readings were taken at five minutes' interval and the average taken. The study was accomplished using a pre-tested questionnaire administered either by the investigators or other physicians working with them and who have been specifically trained to do so. Enrolees were sometimes allowed to fill-in the questionnaire on their own if they were educated enough to do so. Data were then analyzed using Epi Info version 6 computer software.

Results

The study comprised of 100 males (44.6%) and 124

females with the age range being 35-82 years. Figure 1 shows that most of the patients were on calcium channel blockers as monotherapy (39.3%) followed by diuretic (14.3%). However, combination therapy was quite common (35.7%). Among the patients studied, β -blockers were the rarest choice as a single agent (1.8%). Suffice to also mention that 1.8 % of the patients could not recall the names of the drugs they were taking.

One hundred and forty four patients (64.3%) have had their drugs reviewed at one time or the other since commencement of therapy. The most frequently stopped class of drugs was diuretic while the least was calcium channel blocker.

Ninety six respondents (39.3%) volunteered history of having stopped their drug at one time or the other in the last one year. Common reasons proffered for stopping drugs included high cost of drug (22.7%), scarcity of drugs (18.2%) and belief that it is not necessary to take the drugs (18.2%). Other equally weighty reasons given by others included "irregular salary", feeling of good BP control and psychological dissatisfaction with perpetual use of drug.

Table 1 shows the distribution of the cost of drug procurement among the enrollees. One hundred and ninety two patients (85.7%) spent between two hundred Naira (US\$1.4) and two thousand Naira (\$14.3) monthly on drug procurement. Very few

patients spent less than two hundred Naira (3.6%) and greater than two thousand Naira (7.1%) monthly. Figure 2 illustrates the monthly earning capacity of the respondents. Applying multivariate analysis to the level of systolic blood pressure (SBP), distance commuted by patients to receive care was the only independent predictor among distance, monthly earning, drug cost, duration of hypertension and knowledge of complications ($R = 0.341$, significance of change = 0.019, $df = 1$). Similarly, correlation coefficient between SBP and other variables were generally low with knowledge of complications having the highest ($r = 0.38$, 2- tailed significance = 0.782). Distance from the hospital had the most statistically significant correlation coefficient ($r = 0.29$, 2- tailed significance = 0.029).

Table 1: Distribution of the cost of drug procurement among 224 hypertensive patients

Cost of drug (Naira)	No. (%)
< 200	8 (3.6)
200 – 500	48 (21.4)
501 – 1000	80 (35.7)
1001 – 2000	64 (28.6)
2001 – 4000	16 (7.1)
Unknown	8 (3.6)

Figure 1: Choice of antihypertensive drugs in 224 patients

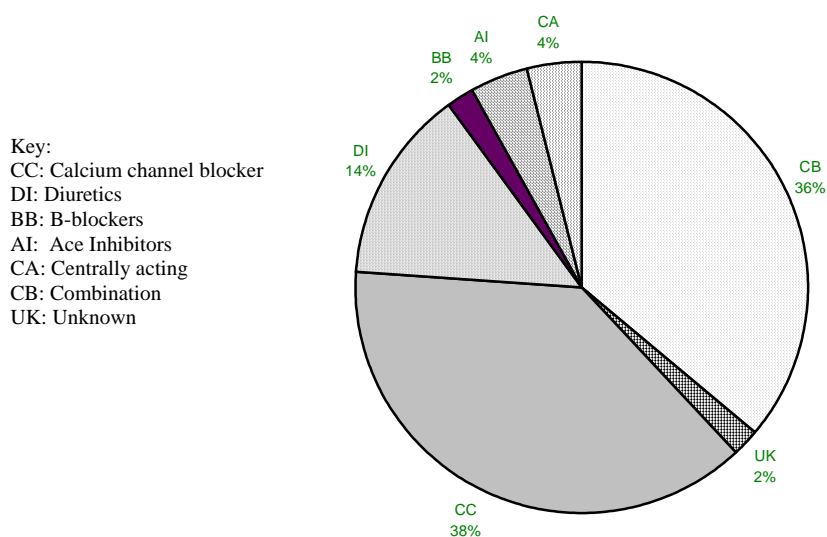
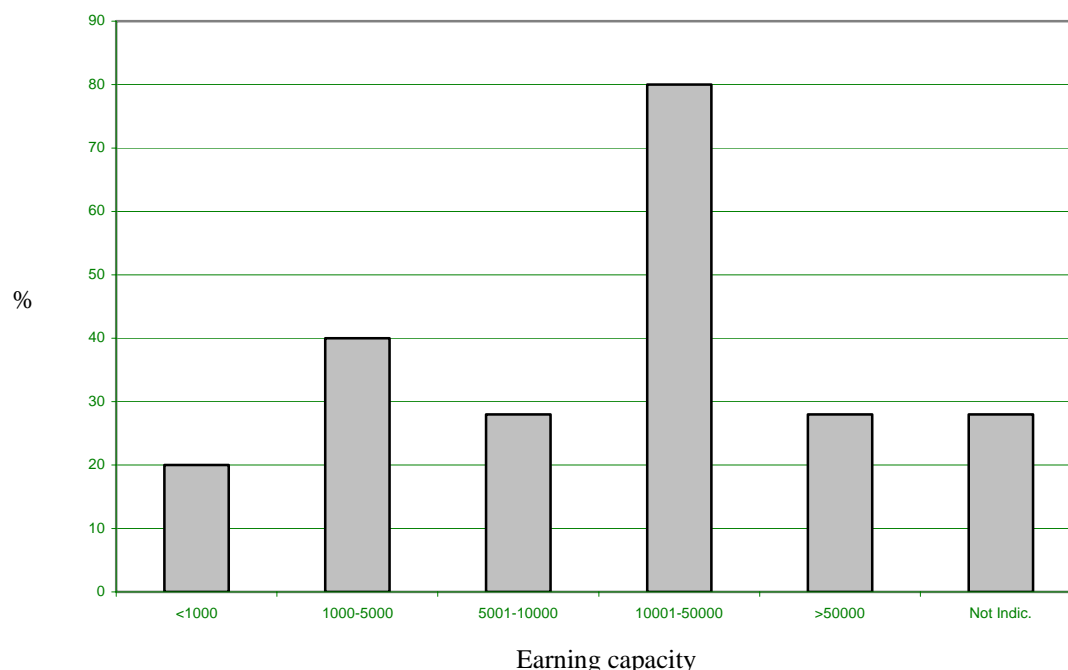


Figure 2: Monthly earning capacity of 224 hypertensive patients (in Naira)



Discussion

This study has revealed that calcium channel blockers are the most commonly prescribed antihypertensive drugs (39.3%) among this subset of patients attending our teaching hospital and even commoner as monotherapy than combination therapy. Similar percentage was also reported by Salako among patients attending University College Hospital, Ibadan with 37.3% and 5.4% of their patients taking nifedipine and amlodipine respectively.² Diuretics was however, still reported as the mainstay of therapy either as single agent or combination therapy in the Ibadan study. The difference in the choice of diuretics as the mainstay probably reflects individual consultant's preference/practice and degree of adherence of the two centres to the old norm. The observation from this study would suggest a shift from the old practice in which diuretics were the mainstay of therapy either as single agent or combination therapy. This discovery becomes significant giving the fact that calcium channel blockers are not only more expensive, particularly amlodipine but are also less readily available for drug refill to patients. The implication of this on long term compliance cannot therefore be over emphasized. Caution therefore may need to be exercised in the preferential choice of nifedipine to diuretics as against amlodipine for which there exists clinical evidence of additional benefits to patients.⁸ Choice of nifedipine in particular and calcium channel blockers in general may be better reserved only for those patients who can comfortably afford it, not only in the short term but also long term. This tallies with the views earlier expressed by Ikeme⁹ a decade ago and it would appear as though aggressive marketing by representatives of pharmaceutical companies is the

major cause rather than any proven clinical superiority. β -blockers were the rarest antihypertensive choice for monotherapy in this study contrary to the practice in the western world where these agents are usually the mainstay. This finding was also corroborated by Salako who reported that the least proportion (6.3%) of their patients were on β -blockers.²

It is also worthy of note that calcium channel blockers were the least common drugs to be discontinued or substituted with another while diuretics were the most common. This would probably suggest that patients on calcium channel blockers had lesser incidence and severity of side effects compared with other classes of drugs. Diuretics are particularly notorious for urinary frequency which could be very unpleasant to most patients. 39.3% of the enrollees volunteered history of having stopped their drug at one time or the other in the last one year. The proportion is expected to be higher than this in reality as a significant number would have hidden the information from the doctor for fear of being rebuked. The proportion of non-adherent patients is even better than 60% obtained among Afro-Caribbean population in inner London.¹⁰ Most important reasons put forward by the respondents were high cost of drugs, scarcity of drugs and belief that it was not necessary to take the drugs regularly. This last reason was shared by both the Afro-Caribbean and Nigerian patients but belief on the need to supplement with traditional herbs was particularly strong among the Afro-Caribbean population.

Access to the hospital was the only independent predictor of SBP level. This study has underscored the need to bring health care centres closer to the people in the bid to improve the control of blood pressure.

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