



ANTIHYPERTENSIVE REGIMEN AND BLOOD PRESSURE CONTROL IN PATIENTS WITH HYPERTENSION IN A TERTIARY HOSPITAL IN ZARIA-NIGERIA

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ABSTRACT

Hypertension is a major public health problem worldwide. In Nigeria, records have shown an increasing prevalence with suboptimal evaluation of blood pressure (BP) control. Generally, antihypertensives have recorded significant successes in BP control over the years. This study was aimed at investigating antihypertensive regimens and BP control in patients with hypertension. The study was a retrospective study on randomly selected hypertensive patients receiving treatments in Ahmadu Bello University Teaching Hospital (ABUTH) Zaria. Patients' demographics, co-morbidities, BP readings and antihypertensives were collected from the patients' case files using a semi-structured Performa between July, 2013 and June, 2015. Data obtained were presented in charts and figures as percentages. A total of 94 patients were captured in the study. The patients were mostly females (71.3%) and between the ages of 41-60 years (64.0%). Combination therapy with mostly diuretics (bendroflumethiazide and hydrochlorothiazide) were recorded (91.0%). Overall BP control was low (35.1%). In conclusion, the study revealed maximal utilization of antihypertensive combination therapy with a poor overall BP control. A non-pharmacological approach alongside rational use of the antihypertensive regimen is encouraged.

Keywords: Antihypertensive, Blood Pressure control, Diuretics, Regimen, Retrospective

INTRODUCTION

Hypertension is a public health problem worldwide due to its high prevalence, asymptomatic character, chronicity, cerebrovascular and cardiovascular (Lopes, 2002; Douglas and Agodoa, 2003). Adequate control of blood pressure (BP) is important in order to reduce its morbidity and mortality (Aronow, 2012; Ogah and Rayner, 2013).

Hypertension is the most common cardiovascular risk factor in Nigeria (Ogah *et al.*, 2012). A large percentage of hypertensive subjects have poor blood pressure control (Ayodele *et al.*, 2004). The prevalence of hypertension in Nigeria is at an alarming rate and up to 40-45% of adults have been reported (Hendriks *et al.*, 2012; Murthy *et al.*, 2013; Commodore-Mensah *et al.*, 2014).

Control of blood pressure remain the most significant way to reduce the hypertension complications (Chobanian *et al.*, 2003). Studies have shown a relationship between low antihypertensive medication adherence, uncontrolled blood pressure and increased risk of

cardiovascular morbidity and mortality (Esposti *et al.*, 2011).

Generally, antihypertensives had recorded significant successes in BP control over the years. They include the ACE inhibitors (e.g. Lisinopril), Angiotensin blockers (e.g. Lorsatan), Beta blockers (e.g. Propranolol), Calcium channel blockers (e.g. Nifedipine), Centrally acting (e.g. Methyldopa) and Diuretics (e.g. Hydrochlorothiazide). However, more than two third of hypertensive individuals cannot be controlled by one antihypertensive drug, and will require two or more drugs selected from different drug classes (Materson *et al.*, 1993).

Though, drugs are the main stay in hypertension management, optimal BP control depends on right selection of monotherapy and combination therapy. There are no data regarding the possible relationship between antihypertensive regimen and BP Control in Nigerian tertiary hospitals. Therefore, the aim of this study is to identify antihypertensive regimen and blood pressure control in patients with hypertension in Ahmadu Bello University Teaching Hospital Zaria.

MATERIALS AND METHODS

Study design

The study was a retrospective cross sectional study on hypertensive patients attending clinics in Ahmadu Bello University Teaching Hospital Zaria (ABUTH) between the periods of July, 2013 and June, 2015. The definition of controlled BP in this work was considered as mean systolic BP <140 mmHg and diastolic BP <90 mmHg, above which was termed uncontrolled (WHO, 2014). The study was approved by the hospital research ethics committee (HREC).

Study population

All patients who received antihypertensive, who were diagnosed with hypertension, who were aged 18 and above and who had at least two (2) BP readings within the study period were included in the study. Patients who had no

hypertension diagnosis and those who had no BP readings were excluded from the study.

Data collection and Presentation

Data were collected from the patients' case files using a semi-structured Performa. The data collected include; patients demographics, co-morbidities, base line BP, antihypertensive regimen (both monotherapy and combination therapy) and post therapy BP readings. The data obtained were presented in tables, charts and figures as percentages.

RESULTS

The results showed a total of 94 hypertensive patients were recruited in the study, with mostly Females (71.30%), and majority were aged 41-60 years (Figure 1).

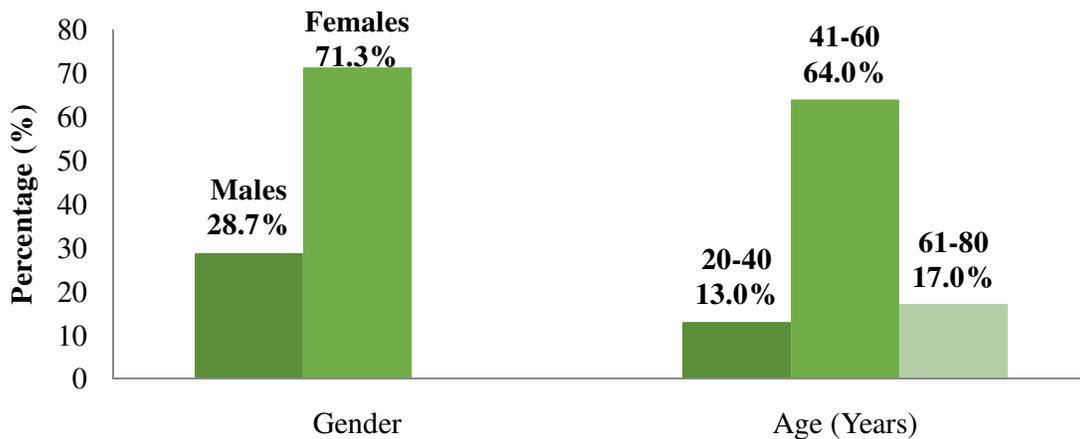


Figure 1: Demographics of Hypertensive Patients

Table 1. Showed combination therapy was mostly utilized (91.0%) with 3 drugs in most cases (45.7%). Diuretics (bendroflumethiazide and hydrochlorothiazide) were the most commonly

used antihypertensive drugs, which accounted for 38.0%; this was followed by calcium channel blockers (19.9%) such as Nifedipine, and ACE inhibitors (18.1%) such as Lisinopril.

Table 1: Antihypertensive utilization pattern among hypertensive patients

Antihypertensive	All patients (n=94)
Monotherapy	8 (8.5%)
Combination therapy	86 (91.5%)
Diuretics	101 (38.0%)
Angiotensin converting enzyme inhibitors	48 (18.1)
Angiotensin receptor blockers	19 (7.1%)
Calcium channel blockers	53 (19.9%)
Centrally acting	7 (2.6%)
Beta-blockers	38 (14.3)
2-drug combinations	22 (27.2%)
3-drug combinations	37 (45.7%)
4-drug combinations	22 (27.2%)

Figure 2 showed that majority of the patients had their overall blood pressure uncontrolled (65%) within the study period.

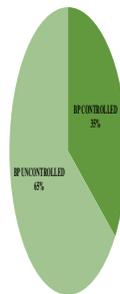


Figure 2: Blood Pressure control among the studied hypertensive patients

DISCUSSION

Our study identified higher proportion of female hypertensive (71.3%) than male, this is similar to a survey of hypertension control among 536 randomly selected hypertensive patients that revealed higher proportions of female patients (M : F; 1 : 63) (Salako *et al.*, 2002). Women tends to visit clinics more frequent than men, and are likely to be diagnose with hypertension. The physiological and hormonal cyclical changes, and of course their fatty, emotional and life styles makes them vulnerable to hypertension

The study revealed diuretics (bendroflumethiazide and hydrochlorothiazide) were the most commonly prescribed antihypertensive drug group either alone or in combination with other drugs such as amiloride. Moreover, this study recorded 91.0% combination therapy, 9.0% monotherapy and 35.0% overall BP control. Similar studies identified a combination therapy (73%), monotherapy (27%) and BP control (33%). In contrast, another study recorded as high as 70.7% BP control (Adedapo *et al.*, 2012). Review of other studies shows that increased usage of combination therapy is associated with

higher proportions of rate of BP control. This is in consonance with the JNC 7 guidelines that state that small doses of different classes of antihypertensive drugs is more beneficial than a high dose of one (JNC 7, 2004).

Furthermore, the variance of the overall rate of blood pressure control in this study (35.0%) with most previous findings may be attributed to the much higher predominance of females. The closest in percentage of blood pressure control to that obtained in this study are 25.4% (Salako *et al.*, 2002), and 29% (Etuk *et al.*, 2008) [with the latter having a female percentage of 54.5%]. Females have been relatively less responsive to antihypertensive therapy (Odili *et al.*, 2008)

Conclusion

In conclusion, the study revealed maximal utilization of antihypertensive combination therapy containing mostly diuretics but with poor overall BP control. A non-pharmacological approach such as lifestyle modification and diet alongside rational use of the antihypertensive regimen is encouraged.

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