

Case Report

Incidence of hypertension in Taura, Northern Nigeria: Lessons for our health care

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The control of hypertension is very important because it leads to incidence rate reductions for stroke, ischaemic heart disease and renal failure. It was the objective of this paper to present experiences encountered in the management of hypertension in Taura health clinic with an emphasis on drug therapy, as well as to draw lessons for the improvement of the health care system in Nigeria. Case series of nine patients with ages ranging from 26 to 75 years were examined over six month period and all presented with hypertension. The continuous nature of treatment appeared to be an economic burden on the patients which resulted in poor compliance. In conclusion, healthcare planners should endeavour to give top priority towards the management of hypertensive patients either under medication regimen or in any health facility, with the subsidizing and cheap availability of their drugs.

Key words: Hypertension, antihypertensives, modifuretic, methyl dopa.

INTRODUCTION

Incidence of hypertension is well known to vary from place to place. Generally, higher figures can be obtained in urban relative to rural settlements. The control of hypertension is known to lead to reductions in incidence rates of stroke, ischaemic heart disease and renal failure.

Some studies have estimated that about 15% of the population can be regarded as hypertensive, though only a proportion of them could be diagnosed or had received some form of treatment. However, the figures may be overestimated because many of those observed have had their blood pressure checked only once (Macleod, 1988). Sometimes, it is not possible to take their blood pressure at three separate occasions in a relaxed atmosphere as well prescribed by the World Health Organisation. Notwithstanding significant advances in hypertension recognition and control, it remains the major risk factor for coronary, cerebral and renal vascular diseases which cause over half of the deaths in the USA (Braunwald, 1988). This implies that management of hypertension should be of top priority considering the morbidity and mortality which accompanies it.

Despite the above-mentioned knowledge, hypertension

is poorly controlled and remains a major health problem particularly among minority populations, the poor, those with lower levels of education, as well as those with limited access to medical care (Keeler et al., 1985; Benett and Shea, 1988; Shea et al., 1992). Studies have shown substantially higher incidence rates of the major adverse effects of hypertension (ischaemic heart disease, stroke, renal failure etc) in African Americans compared to Whites (Shea et al., 1992).

A review of hypertension cases was carried out in Taura health clinic in Taura, a rural town in the Northern part of Nigeria. The objective of this paper to present experiences encountered in the management of hypertension in Taura health clinic with an emphasis on drug therapy, as well as to draw lessons for the improvement of the health care system in Nigeria.

MATERIALS AND METHODS

Location of study was Taura Local Government - a typical rural settlement located in Jigawa State of Northern Nigeria. Taura, with a population of over 8,000, and made up of mainly sedentary farmers, and attained local government status in the 1990s. The period of study was six months.

Many cases presented without any specific symptoms attributed to hypertension e.g. headache and few with one or more of related complications, or associated with pregnancy. However, it was only nine cases that were evaluated as typical for hypertension from the many cases. A descriptive approach was employed for analysis.

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CASE REPORTS

Patient A, a 70 years old male, presented with heart failure. He was a known hypertensive. Upon examination, there was elevated blood pressure. He was admitted. Blood pressure was controlled with dietary advice, modiuretic and methyldopa with the adjunctive heart failure regimen. He was discharged and kept on regular check-up appointments however the compliance was poor.

Patient B was a 60 years old man. He had headache, joint pains, weakness of the body and frequency of micturition. He was a known hypertensive. Modiuretic was first administered followed by methyldopa with dietary advice. This was later changed to Brinerdin. He was treated appropriately using both diet and drug therapy. Follow-up was satisfactory and compliance was good.

Patient C, a 26 year old female, was brought semi-conscious to the clinic five days after delivery. Before the incident, she complained of one-sided headache pre-delivery, dizziness and weakness of the body with shivering. On examination, she was semiconscious, febrile, restless and responding to pain by withdrawal reflexes. She had elevated blood pressure (180/120 mmHg) and pedal oedema. Post-sedation, she was administered hydralazine, and other supportive treatment. She regained consciousness the following day and was continued on methyldopa, modiuretic, and dietary advice. With consequent follow-up, she did not need any anti-hypertensives. She maintained regular checks.

Patient D was a 58 years old male. He presented with joint pains and occasional frontal headaches. His blood pressure elevated on examination. He was treated with modiuretic, methyldopa coupled with dietary advice and exercise. With time, he did not need anti-hypertensive drugs. He was on regular checks as slight increase in blood pressure was observed whenever joint pains re-occurred. There was fair compliance.

Patient E was a 60 years old female presented with one-sided headache, dizziness, joint pains and generalized weakness. Her blood pressure elevated on examination so she was placed on modiuretic, methyldopa and low salt diet. She was also treated for osteoarthritis. On follow-up she was weaned off anti-hypertensive drugs till she was placed on methyldopa one tablet daily. Compliance here was fair although she was not regular with her checks as she claimed she had to source funds for the check-up.

Patient F, a 42 years old male presented with frontal headache, dizziness, insomnia, chest and upper abdominal pain. On examination, he raised blood pressure together added with signs of peptic ulcer disease. An appropriate treatment for peptic ulcer (dietary and drug therapy) was given together with modiuretic and methyldopa which controlled the blood pressure. On follow-up visits, anti-hypertensives were weaned off and she was later placed on regular checks.

Patient G was a 75 year old female who presented with breathlessness, headache, dizziness and chest pain. She was a known hypertensive who was also on treatment for heart failure for about four years. On examination, she was in cardiac failure with raised blood pressure of 190/135 mmHg. Heart failure regimen was immediately commenced together with modiuretic and methyldopa. The blood pressure was later stabilized on 2 x 2 two tablets twice daily methyldopa one tablet daily modiuretic. The plan to change her to an appropriate one-daily antihyper-tensive did not succeed because she could not procure the drug which resulted in poor compliance with treatment. The patient later died.

Patient H was a middle aged (50 years old) obese female who presented with headache and knee pains bilaterally (worse on the right) and was unable to walk. On examination, her blood pressure was raised. She was started on antihypertensives (modiuretic and methyldopa); treated for the joint pain and was advised appropriately on diet and the importance of exercise. Her blood pressure stabilized without the need for antihypertensives. She was placed on regular check-up visits.

Patient I was a 45 year old man who presented with fever, one-sided headache, chest pain and dizziness. On examination the blood pressure was found to be elevated. The fever was controlled and he was also started on antihypertensives (modiuretic and methyldopa). With dietary advice he was eventually controlled on methyldopa one-two times daily and one-daily modiuretic. The compliance was poor. He did not attend the check-up visits regularly.

DISCUSSION

In about 10 to 15% of cases, hypertension can be shown to be a consequence of a specific disease or abnormality hence secondary hypertension e.g. coarctation of the aorta, renal disease, and endocrine disorders. However in the majority of cases, it is not possible to define a specific underlying cause, i.e., essential hypertension. This is familial and more frequent in blacks but less in American and Japanese people (Macleod, 1988). In the Taura Health Clinic, most patients presented with symptoms of headache (mostly one-sided or frontal), dizziness and weakness of the body. Other symptoms include polyuria, chest pain and complications like heart failure as seen in two of the patients. Complications of hypertension principally involve the central nervous system, the retina, the heart and kidney. Stroke, carotid atheroma and transient ischaemic attacks (TIA) are common central nervous complications. Hypertensive retinopathy, ischaemic heart disease, heart failure following sustained and prolonged left ventricular hypertrophy, as well as progressive renal failure are other

complications. In the Framingham Cohort, the risk of developing coronary heart disease was twice among hypertensives compared with normotensives, and the risk for stroke was eight times higher (Castelli and Anderson, 1986).

Also noted is the association of diabetes with hypertension as seen in one of the patients. Atherosclerosis occurs commonly and extensively in diabetes.

Thus diabetics are more prone at an earlier age than other people to myocardial infarction and hypertension (Macleod, 1988).

Generally, treatment of hypertension has the objective to reduce the risk of complications and to improve the chances of patient survival. There is a well known agreement that hypertension should be treated with anti-hypertensive drugs either when it is severe (e.g. 160/100 mmHg at age of 20 years; 170/110 mmHg at over 50 years), or if it is associated with retinal, cardiac or renal damage. However, it is also very important to identify the presence of any risk factors and institute general measures apart from drug treatment which for most of the time is life long.

Diet is important and reduction of table salts in foods helps in reducing blood pressure. This includes the exclusion of monosodium glutamate 'Maggi white' from the diet because of its high sodium content. Instead, to make the food more palatable patients can be advised to be using the small 'maggi' cubes for cooking. These contain less sodium/salt. Though the dietary aspect may not be lower the blood pressure substantially to reach normal levels it definitely helps. Other general measures include the stoppage of cigarette smoking. Cigarette smoking contributes in an additive fashion to the probability that an individual will develop or succumb to cardiovascular disease (Hopkins and William, 1986), in the Framingham population, the likely-hood of hypertension increased with an increased body weight (Wolf et al., 1983). Thus the blood pressure of the obese hypertensive often falls in response to weight reduction. This was also employed in one of the patients seen at the clinic even though her own took a long time due to non-compliance of the patient. However, importance of regular exercise was stressed to patient on check-up. It should be noted that patients, who have high blood pressure on first examination which subsequently settles under review, are more likely to develop sustained hypertension (Macleod, 1988) - thus, the need for regular check-ups of patients.

Excessive alcohol consumption may cause or exacerbate hypertension and should be moderated. Relaxation should also be advised that is, avoidance of stress but this is usually difficult to achieve. The use of anti-hypertensive drugs is indicated if the hypertension is moderate or severe and also in mild cases depending on prevailing circumstances as decided by the medical practitioner e.g. the presence of complications. The

Framingham study has indicated that treatment of even mild hypertension substantially lowers the probability of stroke occurrence (Castelli and Anderson, 1986).

Principal agents for single treatment of hypertension can include thiazide diuretics, beta adrenoceptor antagonists, central acting adrenoceptor blocker, A.C.E. (angiotensin-converting enzyme) inhibitors, vaso-dilators and calcium antagonists. The thiazide diuretics are usually the first step in treatment and part of the multiple drug therapy. An example is modiuretic (amiloride hydrochloride 5mg, hydrochlorothiazide 50 mg). This drug is readily available and was part of the treatment in all cases managed in the clinic. The use of the β -adrenoceptor blocking agents eg. propranolol, metoprolol, atenolol are not popular in our environment but however they are very popular in the West.

The hypotensive effects of β -blockers in the treatment of mild to moderate hypertension are well documented (Prichard and Gillam, 1964; Leishman et al., 1970; Persson and Ulrich, 1973). However, some investigators have obtained less impressive results in African patients when using β -blockers alone compared to others in East Africa who have reported unequivocally good result (Humpherys and Delvin, 1968; Richardson et al., 1968; Seedat and Reddy, 1971; Aderounmu et al., 1981; and Abdullah, 1983). The central adrenoceptor blockers e.g. methyldopa was the most widely used antihypertensive drug until the late 1960s when the β -blockers became popular. In addition, clonidine and guanabenz- which act similarly to methyldopa have fewer side effects have become available. The site of action is within the central nervous system (reduce sympathetic outflow). Some of the side effects include dry mouth, sedation, orthostatic hypotension, impotence and galactorrhoea. It is still a very safe drug in pregnancy and thus still very useful in the treatment of gestational hypertension. However, in this environment methyldopa is still very popular because it is easily available but its use is fast declining in the urban area when other substitutes are easily available because of some of the side effects like impotence and problems of compliance. The once daily drugs are now more preferable.

These once-daily drugs include the calcium channel blocker which is becoming increasingly popular. These include the first generation 'Nifedipine', to second generation 'Isradipine' and 'Amlodipine', the latter having longer half life and being more tolerable (Isah and Obashohan, 1994). Other combinations include Brinerdin (reserpine, polythiazide). In one of the patients seen in the clinic Brinerdin was used to replace the combination of modiuretic and methyldopa and this resulted in better compliance. For active and working men, the once-day antihypertensive taken in the morning with breakfast has been shown to be more effective. Hydrallazine is also very well utilized especially in hypertensive crisis (as obtained in a case managed in the clinic) and in hypertension refractory to treatment with diuretics, β -

blockers or central adrenoceptor acting agents. Consideration of cost plays a vital role for therapy, especially for chronic disorders where compliance may be a determinant of therapeutic outcome. Hypertension is such a disorder that requires continuous control to avoid the development of complications. For example, the annual cost of treatment for drugs has risen by 300 – 3900% (N252.00 in 1988 to N1008.00 in 1994 for modiuretic), without commensurate increase in real income of people (Isah et al., 1994). This is a major problem resulting to the poor compliance of patients. However, it is found that the price of the once- daily drugs e.g. Brinerdin, Norvasc (Amlodipine) is about the same as drug combinations (total cost), e.g. modiuretic and methyldopa and the readily availability of such drugs will aid patient's compliance.

A special mention of gestational hypertension which include pre-eclampsia is important. Though not a common occurrence, it can be detected early during antenatal check- up if routine blood pressure measurements are done and the urine tested for protein when there is oedema. The patient encountered in the clinic was an un- booked case who delivered at home and with the history obtained, she must have been hypertensive before delivery. She was lucky not to have had eclampsia. Thus, there is need for the encouragement for women to attend routine antenatal checks. In this respect, success is being recorded at maternal section of health clinics because of the drive and mobilization towards this.

Conclusion

In conclusion, the important place of hypertension in our health care system cannot be over-emphasized considering the debilitating effects which it unleashes in our communities. More attention should focus on this aspect of medical care. Also, the continuous nature of hypertension treatment in typical Africa remains a stressful economic burden on patients and this, as obtained in the present study, resulted in poor compliance of many cases. Therefore, health care planners should endeavour to give top priority towards the management of hypertensive patients either under medication regimen or those obtained in any health facility, together with the subsidizing and cheap availability of their drugs. This would go a long way to improve the compliance and well being of hypertensive patients as well as the general population.

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