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MEDICINE

Incidence of Hypertension and related Diseases in the Adult Medical Wards at Komfo Anokye Teaching Hospital, Kumasi, Ghana

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SUMMARY

Between January and July 1990 all admissions to the adult medical wards of the Komfo Anokye Teaching Hospital, Kumasi, Ghana were studied. Among 2431 consecutive admissions, the prevalence of hypertension was 14.39%. Hypertension was found to be commonest in the age group 55-64 (26.86%). Stroke (CVA) was the most common complication of hypertension with 37.71%, followed by congestive cardiac failure with 15.14%. Myocardial infarction was rare accounting for 0.28%. Hypertension was often associated with Diabetes mellitus in 4.28%. It was observed that all the patients with chronic uraemia were hypertensive. They could not be adequately treated in our present medical set up.

Keywords: Hypertension, stroke (cardiovascular accident), myocardia infarction

INTRODUCTION

In 1929, Donnison [1] reported from Kenya that high blood pressure was rare in people of African descent. A year later (1930), Shattuck [2] wrote about hypertension in Liberia and indicated that it was not yet a serious health problem. By then only few reference to the problem had been made among blacks. The situation today is vastly different. We know from epidemiological, clinical and pathological studies on the continent of Africa that Hypertension is indeed the most common cardiovascular condition in the African, Akinkugbe. [3] In Ghana Binder [5], Haddock [6], Pobee [8,9] and others have described vividly hypertension in the hospital, in the rural and urban societies in Accra and southern parts of Ghana. We also observe that hypertension and hypertensive diseases are common among the patients admitted into the wards of the Komfo Anokye Teaching Hospital in Kumasi. There is no published work on hypertension in Kumasi.

The purpose of the this study is to establish the incidence of hypertension and to create awareness of its related diseases among hospital admission at Komfo Anokye Teaching Hospital in Kumasi. It is important that the magnitude of hypertension as a problem should be clearly defined in this society. Although population studies are warranted in order to quantify this problem, selected material which forms the basis of this communication may serve as useful pilot study. It is intended to promote more research into hypertension in this society, because new knowledge may be extremely important in deciding the most appropriate measures for a decline in the morbidity and mortality of hypertension.

MATERIALS AND METHODS

Between Juanuary 1990 and July 1990, there were 2,431 patients, 350 of whom were admitted for complicated hypertension into the adult medical wards of the Komfo Anokye Teaching Hospital, Kumasi. This is a medium sized (750 beds) referral hospital which serves Kumasi and the northern sector of Ghana. People living in this area can be classified into three societies.

(a) those with unchanged traditional beliefs and attitude

(b) those who live in a changing rural society and

(c) those in urban society - a society difficult to define and some of them not truly urban.

Only patients who remained in the wards for longer than three days were included in the study. Blood Pressure was measured on each patient eight hourly for three days.

When the blood pressure was higher than that defined for age (WHO) [10] on admission, it was retaken at three different sittings with the subject reclining with three readings at each sitting. The average of the lower readings was recorded, Phases

I and V of the Korotkov sounds being the end points. All the figures are in mmHg.

Hypertension was considered worthy of treatment as follows: (Mokhobo [11].

(1) For subjects 30 years and over BP 160/100. The diastolic pressure being strictly adhered to

(2) For subjects 20 to 30 years BP 160/95 as the cut-off point

(3) Whilst under 20 years, BP 140/90 was taken as the upper limit of normal.

A personal simplified scheme of grading retinopathy was employed, based on the major gross changes of the Keith-Wagner-Baker grades. Diagnosis of complications and other associated diseases was made on clinical grounds, routine laboratory blood analysis and urinalysis such as Hb, WBC, Sickling FBS & RBS, Urine albumin, Sugar, Granular casts, Red & White blood cells. Other investigations inluded serum creatinine and serum electrolyte. Further tests and further clinical evaluation were determined by physical signs and abnormal laboratory results and when necessary other investigations such as ECG and Chest radiography were requested. With the help of a simplified questionnaire which included KAP (Knowledge Attitude and Practice) further relevant information was obtained from patients or their immediate relatives when the patient was not in a position to answer questions. Due to various religious and cultural beliefs, it was very difficult to get permission from relatives to do antopsies in those patients who died in the course of this study. The few autopsies which were done have not been discussed in this paper.

At initial presentation most of the patients had one or more diseases. For the purpose of clarity only the major diagnoses have been listed.

Table I shows an analysis of hypertension, complications and associated diseases, Mortality rate. It is noted that stroke emerges as the leading cause of disablement (37.71%) in both males 82 (23.34%) and females 50 (14.28%). Congestive cardiac failure is common (15.14%) and myocardia infarction appears uncommon (0.28%). The mortality rate of patients with chronic uraemia is 100%.

Table II shows the age distribution of hypertension. There is a rise in blood pressure with increasing age. Hypertension is commonest in the age group 55-64 (25.86%). The male (176) female (174) ratio is 1:1. Tables III and IV show other target organs damage from hypertension. Table V shows some important results from the questionnaire. A certain margin of error should be allowed in all cases since patients or their relatives may not be able to give accurate details of age, ailment and treatment. 164 (46.86%) patients were unaware that they were hypertensive. 130 (69.89%) of those previously diagnosed admitted to irregular medical treatment. 35 (18.81%) patients previously diagnosed defaulted from clinics looking for complete cure elsewhere.

TABLE I

350 PATIENTS WITH A MORBID EVENT, ADMITTED TO THE WARDS

DIAGNOSIS	NO. OF PATIENTS	MORTALITY
1. Cerebrovascular Accident (CVA)	132(37.71%)	37(28.03%)
2. Hypertensive Encephalopathy	34(9.71%)	4(11.76%)
3. Severe Hypertension BP only	78(22.28%)	4(5.12%)
4. Hypertension + Epistaxis	8(2.28%)	- -
5. Hypertensive CCF	53(15.14%)	10(18.86%)
6. Hypentension + Diabetes Mellitus	15(4.28%)	2(13.33%)
7. Hypentension and Chronic uraemia	9(2.57%)	9(100%)
8. Hypertension and CRF	13(3.57%)	4(30.76%)
9. Hypertension + Myocardial infarction	1(0.28%)	- -
10 Others	7(2.00%)	1(14.29%)
	350	66(18.86%)

Severe Hypertension $\geq$ 200/120mmHg

TABLE II

AGE DISTRIBUTION 350 PATIENTS WITH HYPERTENSION

AGE	NO. OF PATIENT	%
15 - 24	11	3.14
24 - 34	10	2.86
35 - 44	42	12.00
45 - 54	90	25.57
55 - 64	94	26.86
65 - 74	62	17.71
>75	41	11.71
	350	99.85

TABLE III

FUNDOSCOPY FINDINGS

No. of patients examined	350
No. with retinopathy I-II	80
No. with retinopathy III-IV	13 (CVA-4, chronic Uraemia-4, *severe' hypertension - 2, others - 3)

Total No. with retinopathy - 93(26.57%)
* severe hypertension $\geq$ 200/120 mmhg

TABLE IV

CARDIAC CHANGES OF HYPERTENSION

No. of ECG	- 48
No. of Lv. Hypertrophy	- 14 (28.16%) Sokolow-lyon Voltage Criterion (RV5 or RV6 + SV1 = 3.5mV).
No. of Chest radiograph	- 80
No. of Lv enlargement	- 47 (58.75%)

TABLE V

QUESTIONNAIRE - RESULTS

Unaware of being hypertensive	- 164 (46.86%)
Aware of being hypertensive	- 186 (53.14%)
Aware but admit to irregular medication	- 130 (69.86%)
Aware but avoid orthodox medicine	- 35 (18.81%)

DISCUSSION

This study highlights the prevalence of hypertension among hospital admission at the Komfo Anokye Teaching Hospital, Kumasi. It is noted that 350 (14.39%) patients were admitted for complicated hypertension. The social strata of Kumasi is perhaps not that different from that of Ibadan (Nigeria) which Lloyd, (1967) [12] and Akinkugbe (1969) [4] have described as a city village. It is populated mainly by farmers, small traders, factory workers, clerks, a few African elite comprising senior civil servants, university teachers, lawyers, doctors and top business executives. There is no evidence of heavy industrialization.

The diagnosis of hypertension, complications and associated diseases were made mainly by clinical examination and by some basic laboratory investigations. In Kumasi X'ray films and ECG recordings are not readily available.

Confronted with these limitations, an attempt has been made to analyse some hypertension cases in the ward. However within these limitations stroke emerges as a leading complication of hypertension in Kumasi. Mokhobo [11] made a similar observation at a medium-sized referral hospital serving the people of Lesotho and Swaziland.

Davis [13] wrote in 1948: "Hypertensive disease is the commonest cause of congestive cardiac failure in Kampala causing very nearly one-third of the deaths". In West Africa, Akinkugbe [4] and Pobee [7] described stroke and congestive cardiac failure, as the common cause of morbidity from hypertension. Parry and Gordon [14] reported that hypertension is a common cause of heart disease in Ethiopia. Our observations are in consonance with the above authors. we find that stroke and congestive cardiac failure, are the most common complications of hypertension in Kumasi. The male/female ratio of hypertension is 1:1.

Mokhobo [11] stated that Coronary heart disease was uncommon among Africans even under suitable conditions such as are provided by hypertension. Over the period 1961-70 Falase et al (1973) [17] found that there had been 26 cases in Nigerians with CHD admitted to University College Hospital, Ibadan which gave a rate of 120,500 hospital inpatients population. In a study of 1,000 South-African non-white hypertensive patients, Seedat [15] found no evidence of CHD either in form of angina pectoris or myocardial infarction among the Blacks. Although congestive cardiac failure occurred in 15.14% of the hypertensive patients and there was ECG evidence of left ventricular hypertrophy in 28.16% we found only 1 patient (0.28%) with myocardial infarction. Our study supports the rarity of CHD among Africans.

It was also observed that hypertension is often associated with diabetes Mellitus. We found 15 (4.28%) patients to be hypertensive prior to the detection of diabetes Mellitus. Seedat [15] and many others have made similar observation.

Prevalence of retinopathy (26.57%) predominantly all grade I and II was observed. One would have expected more severe changes in the stroke patients, chronic uraemic patients and those with severe hypertension. Pobee [7] quotes the prevalence of retinopathy in 65 inpatients in Accra to be 63%. On the other hand Akinkugbe observes that retinopathy is rare among Africans [3a, 3, 7]. We expect more studies into this problem.

Endstage (chronic) renal failure is a well known complication of primary hypertension among Africans [16]. In this communication the causes of the chronic renal failure (CRF) vis a vis chronic uraemia have not been established. It was, however, observed that all the patients with chronic uraemia were hypertensive. At present, patients who have chronic renal failure, which progresses into the terminal stage (uraemia) cannot be adequately managed, since the treatment with regualr dialysis or renal transplantation is not available in Ghana. This is seen in nine patients who were admitted because of chronic uraemia. None of them survived. Further research into this field is to be encouraged. We are also advising that facilities should be made available in the future planning of the Health Services in Ghana to manage patients with uraemia.

Our study also shows that 46.86% of the patients were unaware that they were hypertensive. 69.89% were aware of it but admitted to irregular medical treatment. 18.81% defaulted from the clinics to look for cure from spiritualists and traditional healers who readily promise cure for every ailment. This implies that health education should be intensified in this society particularly with regard to hypertension and its related diseases.

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REFERENCES

1. *Donnison, C.P. (1929). Blood Pressure in the African Native. Lancet. i:6-7.*
2. *Shattuck, G.C. (1930). The African Republic of Liberia and the Belgian Congo; Report of the Havard Expedition of Liberia. Havard University Press, Cambridge.*
3a. *Akinkugbe, O.O.(1968).The rarity of Hypertensive Retinopathy in the African. American Journal of Medicine, 45:401.*
3. *Akinkugbe O.O. (1980). High Blood Pressure in the African context. Tropical Doctor, 10:56-58.*
4. *Akinkugbe, O.O.; Ojo, O.A. (1969). Arterial Pressure in rural and urban populations in Nigeria. British Medical Journal, 2:222.*
5. *Binder, E. (1962). Cardiovascular diseases in Accra, (Ghana) as suggested by an analysis of post-mortem records. West African Medical Journal, 10:158-170.*
6. *Haddock, D.R.W., et al (1970). Cerebrovascular accidents in Ghana. Transactions of the Royal Society of Tropical Medicine and Hygiene, 64:300-310.*
7. *Pobee, J.O.M. (1983). Blood Pressure Studies in West Africa. WHO cardiovascular projects in Ghana.*
8. *Pobee, J.O.M., et al (1977). Blood Pressure distribution in a rural Ghanaian population. Transactions of the Royal Society of Tropical Medicine and Hygiene, 71:66-72.*
9. *Pobee, J.O.M., et al (1979). Is Hypertension a problem in Ghana? Tropical Doctor, 9:89-92.*
10. *WHO (1962). World Health Organisation technical Report, series No. 231.*
11. *Mokhobo, K.B. (1976). Arterial Hypertension in rural societies. East African Medical Journal, 53:440-444.*
12. *Lloyd, P.C. (1967). In the city of Ibadan, edited by P.C. Lloyd, A.L. Mabogunje, and B. Awe, Pg.3 Cambridge University Press, London.*
13. *Davis, J.N.P. (1948). Pathology of Central African Natives. IX cardiovascular diseases. East african Medical Journal, 25:454-467.*
14. *Parry, E.H.O. and Gordon, C.G.I. (1968). Ethiopian Cardiovascular Studies. Case finding by mass miniature radiograph.*