

*Original Article*

## **Clinical features of the arterial hypertension in a medical emergency service in Abidjan**

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**Abstract:** The authors studied the clinical features of high hypertension (blood pressure over 240 mmhg for the systolic and over 140 mmhg for the diastolic pressure) in 300 black African patients observed in the unit of medical emergency at Abidjan.

In this unit arterial hypertensions represented 8.27% of the cases and was the main cause of mortality (12.9 % VS 7.2 % for the others causes).

The common complications were heart failure (29%) stroke (21%), encephalopathy (19%) and renal failure (16%). Diabetes was associated in 8.33% of cases. The high rate of mortality is observed when there was stroke (25.4%) and renal failure (25%).

There was significant increase in mortality linked to high blood pressure.

**Key words:** Arterial hypertension; renal failure; stroke

### **Introduction**

It is well established that arterial hypertension (AHT) is sever and more frequent in black Africans than in whites.

In Africa, arterial hypertension affects about 10 to 15 % of population and 5 to 12 % of hospitalised patients [3].

The aim of this work was to study the different clinical features of high blood pressure {over 240 mmhg for systolic (SBP) and 140 mmhg for diastolic

blood pressure (DBP)} among patients presented to the medical emergency unit and to assess the hypertensive complications.

### **Materials and methods**

From March 1991 to March 1992, 300 cases with arterial hypertension among a total of 7491 patients presented to the medical emergency service of Treichville Teaching Hospital. All patients were black African.

We measured blood pressure with sphygmomanometer while patients at rest and in lying position. Hypertension was diagnosed if arterial pressure was above or equal to 160 mmhg for systolic and or 95 mmhg for diastolic blood pressure.

We studied age, sex, blood pressure, visceral complications, associated factors and mortality at short term. Heart failure, cerebral stroke and hypertensive encephalopathy had been diagnosed on the basis of clinical aspects and complementary test. Renal function was estimated by the level of serum creatinine in 149 cases.

### **Results**

#### *Epidemiological aspects*

Three hundred patients were included, 116 Women (38.7 %) and 184 Men (61.3 %). Their ages ranged from 16 to 89 years. The average age was  $51.08 \pm 14.70$  years for men and  $50 \pm 13.69$  for women.

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Most of these patients (58%) were from lower socioeconomic classes with precarious financial means. The main functional symptoms were as follows: dizziness (38.33%), headaches (35%) and eye troubles (15.7%).

#### *Blood pressure figures on admission*

According to these figures, patients had been divided into four groups (A, B, C, D) as shown in table 1.

**Table 1.** Distribution according to the tensional figures on admission

Group	Blood pressure	N	0%
A	140 < SBP < 240 80 < DBP < 140	236	78.8
B	SBP > 240 80 < DBP < 140	18	6
C	140 < SBP < 240 DBP < 140	20	6.6
D	SBP > 240 DBP > 140	26	8.6

A.H.T = Arterial hypertension  
 A = A.H.T. from moderate to severe  
 B = High systolic A.H.T.  
 C = High diastolic A.H.T.  
 D = High A.H.T.

#### *Visceral complications*

- **Neuro Sensorial complications:**  
 A neurosensorial attack was observed in 120 cases (40%).
  - Hypertensive encephalopathy was seen in 57 cases (19 %) among which there were: 25 cases of coma (26.32 %), 10 cases of convulsions (17.54 %) and 7 cases of losing consciousness (12.28 %).
  - Cerebral stroke occurred in 63 cases including: 25 cases (39.68%) of transient cerebro-vascular accident (C.V.A) and progressive C. A. V. characterised by a neurological deficit lasting more than 24 hours in 38 cases (60.32 %).
- **Cardiovascular complications:**  
 It was observed in 87 patients (89%), left ventricular failure in 63 cases (72.47%) and a global cardiac failure in 24 cases (27.5%). Chest X ray was done in 41 cases which revealed cardiomegaly in 24 patients. ECG was

done in 39 patients, abnormalities were present in 24 of them as: left ventricular hypertrophy with left ventricular over load, ventricular extrabeat and left bundle block. Echocardiography was done in 11 patients. It showed hypertensive cardiomyopathy in all patients.

- **Renal complications:**  
 It was observed in 48 cases (16%) of our patients. It was functional acute renal failure in 21 % and chronic renal failure in 79% with a high serum creatinine up to 20 mg/l.

#### *Malignant arterial hypertension*

Twelve cases of malignant hypertension had been observed in this group (300 subjects), with a prevalence of 4 %. These patients presented with a DBP > 130 mmhg, heart and renal failure and ocular fundal changes (stage III or IV). This group included 9 men (75 %) and 3 women (25%).

The mean age of these patients was  $47.83 \pm 9.12$  years. The average blood pressure was  $244.16 \pm 27.12$  mmhg and  $147.5 \pm 14.85$  mmhg for systolic and diastolic respectively. The mortality in this group was 25 %.

#### *Hypertension and diabetes*

The association of hypertension and diabetes had been observed in 25 patients: 20 cases of diabetes type II and 5 cases of diabetes types I (insulin-dependant).

#### *Etiological aspects*

In this work 85% (255 cases) of the whole group their hypertension seemed to be essential. We found some etiological causes which were as follows:

- Gravidic hypertension: 1 case
- Polycystic Kidney disease: 4 cases
- Chronic glomerulonephritis: 12 cases
- Chronic hypertensive nephropathy: 28 cases of which it was impossible to determine whether the kidney was victim or a cause of arterial hypertension.

#### *Factors of mortality*

We observed 34 cases (11.30 %) of death among our patients. The complications related to these cases are shown in table 2.

**Table 2.** Distribution according to factors of mortality

	Dead N=34	Living N=266	X <sup>2</sup>	P
Cerebral stroke	16(47.0%)	47(17.7%)	15.621	P<0.001
Renal failure	12(35.3%)	36(13.5%)	10.621	P<0.001
Cardiac failure	9(26.5%)	78(29.32%)	0.119	NS
Encephalopathy	5(14.7%)	52(19.5%)	0.459	Ns
Diabetes	4(11.7%)	21(7.9%)	0.591	Ns

### Role of the tensional figures

The role of tensional figures in mortality rates are illustrated in table 3.

**Table 3.** Mortality according to high tensional figures

Arterial hypertension	N	Dead patients	%
High systolic / diastolic hypertension	26	8	30.76
High systolic hypertension	18	4	22.2
High diastolic hypertension	20	2	10.5
Others (SBP < 240 – SDP < 140)	236	20	8.5

We noted in our study that neither age, sex, nor the duration of hypertension were the exclusive severity factors.

### Discussion

Neurosensory functional symptomatology was the main reason of consultation in our study like in other African series [3]. It was principally dizziness (38.33%), followed by headaches (35%). More than 75 % of hypertensive patients followed at medical emergencies had moderate to severe hypertension (78.8% cases).

We observed that number of hyper systolic pressure and hyper diastolic pressure are nearly equal. High hypertension was observed in 8.6% of our patients. These figures are lower than those reported by Renambot (17.4%) at the Institute of Cardiology in Abidjan [2].

Neurosensory complications were the most frequent clinical feature in our study (120 cases - 40%). Among these patients we found hypertensive encephalopathy in 19% cases and cerebrovascular accident in 21% cases. 60 % of these presented with major accident.

Cerebrovascular accidents are the most frequent complications in Black African and often reveal the hypertensives and cause death from 5 to 37.9 % [3-6].

In this study 87 patients (29%) had cardiac diseases. 63 cases (21%) with left cardiac failure and 24 cases

(8%) with global cardiac failure. The rate of mortality was 9.52 % in the first group and 12.50 % in the second group, with a total rate of mortality of 10.35% for all cardiac patients.

Most of the other African observations agree that in hypertensive Black African, congestive heart failure occurred more frequently than ischemic heart disease [3].

In our work, 48 patients (16%) presented with renal disease of which 38 cases with organic renal failure. Other studies on chronic renal failure in Tropical Africa and in south African Blacks found that hypertensive renal disease is a major cause of chronic renal failure [1-2]. Hypertension is also a major cause of end - stage renal failure in Blacks in USA with an almost eight folds higher age and sex adjusted incidence than whites. In UK, Pazianas [11] found that hypertension was the most important cause of end-stage renal failure in Afro-Caribbeans, being found in 23 of 55 (41.8 %) of their patients.

There were 92 cases of hypertension (30.66%) without clinical signs; 3 of these patients had high hypertension. This means that asymptomatic hypertension does not prejudice its severity.

Essential hypertension was found in 255 patients (85%) for whom we couldn't find any cause. However, in 45 hypertensive patients (15%), etiology could be found which was mainly renal disease.

The rate of mortality in hypertensive patients was significantly, higher (P<0.001) than other diseases received at the medical emergencies during the same period (12.9% (80/160) VS 7.2% (498/6871).

Comparing the prevalence of complications between dead and the living patients showed that cerebral stroke and renal failure were the major factors of mortality with significant difference (P<0.001). But heart failure, hypertensive encephalopathy and diabetes were infrequent in the group of dead patients.

As far as tensional figures concerned, there was a correlation between the average figures of blood pressure and mortality. The mean of systolic pressure was over 271.2 mmhg in dead patients (P<0.001) and the mean of diastolic pressure was over 126.5 mmhg (P<0.02). We also noticed that for both diastolic and systolic blood pressure there was significant increase of mortality rate (P<0.05 and P<0.001 respectively).

Although the rate of mortality increased with the level of blood pressure yet, the rate of this increase was not the same in the group of high hypertension.

In conclusion, hypertensives presented to the medical emergencies at Treichville Teaching Hospital have pejorative prognosis especially when blood pressure is high and when there are cerebral stroke and/or renal failure.

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