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Epidemiological and Clinical Profiles of Patients Admitted for Hypertensive Crisis in Two Reference Hospitals in the City of Yaounde

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ABSTRACT

Hypertensive crises, characterized by a sudden and severe rise in blood pressure with or without acute target organ damage, remain a significant public health concern due to their high morbidity, mortality, and management cost. Understanding their epidemiological and clinical features is crucial for effective intervention strategies, especially in resource-limited settings. We conducted a retrospective descriptive study at the Yaoundé University Teaching Hospital and the Yaoundé General Hospital from January 2019 to December 2023. We included the complete medical records of patients aged 18 years and above who were admitted for hypertensive crises. Sociodemographic, clinical, and treatment-related data were collected and analyzed using SPSS version 26. A total of 181 cases were included, with a prevalence of hypertensive crises estimated at approximately 8%. The mean patient age was 56.5 ± 12.3 years, and the sex ratio (M:F) was 0.77. Of these, 76.2% had known hypertension, and 88.3% were on antihypertensive treatment, though only 11% demonstrated adherence. A sedentary lifestyle was the most common risk factor (81.1%), and headache was the leading symptom (34.4%). Hypertensive urgencies accounted for 48.6% of cases. Neurological complications were the most frequent, notably stroke (32.5%) and hypertensive encephalopathy (6.6%), followed by acute pulmonary edema (2.7%). Hypertensive crises predominantly affected middle-aged adults, especially women with poorly controlled hypertension and sedentary lifestyles. Hypertensive urgencies were more common than emergencies, with neurological symptoms being the most frequent clinical presentations. Improved prevention, education, and adherence strategies are urgently needed.

Keywords

Blood pressure, Hypertensive, Neurological symptoms, Adherence.

Introduction

According to the World Health Organization (WHO), cardiovascular diseases are responsible for 17 million deaths annually worldwide, including 9.4 million deaths due to complications of hypertension [1]. In Cameroon, the prevalence of hypertension is estimated at 30% among adults, meaning that approximately one in three adults is hypertensive. Hypertensive crisis are defined as a sudden and significant rise in blood pressure (BP) with clinical signs of acute end-organ damage in the case of hypertensive emergencies, or without such signs in the case of hypertensive urgencies [1,2]. These conditions insidiously affect

the active fraction of the population, regardless of socioeconomic status, and often present with complications such as stroke, acute coronary syndrome, and acute pulmonary edema [3,4]. Hypertension-related complications represent a significant public health issue both nationally and globally due to their high morbidity, mortality and treatment costs [5,6].

Materials and Methods

Study design and Setting

This was a descriptive cross-sectional study based on a retrospective review of medical records from January 1, 2019, to December 31, 2021. The study was conducted at the Yaoundé University Hospital Center(YUHC) and the Yaoundé General Hospital (YGH) over a period of 8 months (from November 1, 2023, to May 30, 2024).

Study Population

Hypertensive crisis were defined as systolic and/or diastolic BP ≥180/110 mmHg. Hypertensive urgencies were characterized by marked BP elevation (systolic ≥180 or diastolic ≥110 mmHg) without acute target organ damage. Hypertensive emergency were defined by a BP ≥180 mmHg systolic or ≥110 mmHg diastolic with evidence of acute target organ damage, including stroke, hypertensive encephalopathy, retinopathy, acute left ventricular failure, acute coronary syndrome, acute kidney injury, or aortic dissection. Malignant hypertension was defined as diastolic BP ≥120 mmHg with hypertensive retinopathy and/or nephropathy.

Data Collection

We reviewed the records of patients aged over 18 years admitted for hypertensive crisis at YUHC and YGH, totaling 201 cases on 2000 admissions. After excluding 20 incomplete files, 181 patient records were included in the final analysis. Variables collected included sociodemographic data, medical history, clinical forms, age, sex, known hypertension and its treatment, cardiovascular risk factors, comorbidities, symptoms, systolic and diastolic BP, and signs of acute organ damage.

Ethical Considerations

Ethical clearance was obtained from the Institutional Ethics and Research Committee of the Faculty of Medicine and Biomedical Sciences, University of Yaoundé I. Research authorization was granted by both YUHC and YGH. Data confidentiality was maintained. Data were entered into Excel and analyzed using SPSS version 26.0.

Data Analysis

Data were analyzed using SPSS version 26.0 for Windows. Continuous variables were expressed as means ± standard deviations or medians with interquartile ranges. Categorical variables were presented as frequencies and percentages. Differences between groups (emergencies vs. urgencies hypertensive) were analyzed using Chi-square or Fisher's exact test. A p-value < 0.05 was considered statistically significant.

Results

We enrolled 181 patients with hypertensive crisis, representing a prevalence of approximately 9%. The most affected age group was 50–59 years. The mean age was 56.53 ± 12.3 years (range: 27 to 88 years) (Figure 1).

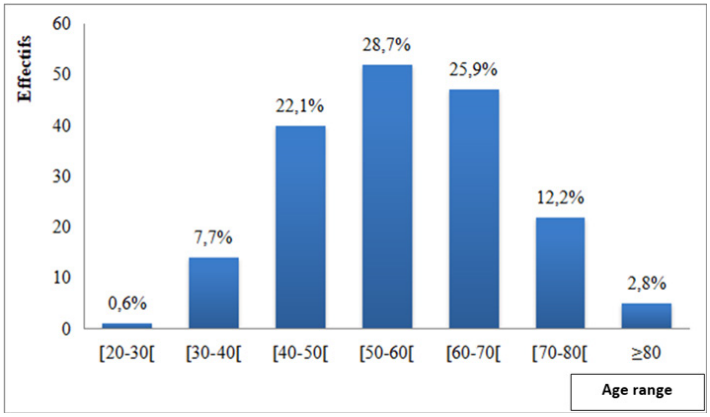

Figure 1: Age distribution

Females were predominant (56.35%; sex ratio: 0.77). Informal sector workers accounted for 35.36% of the study population. A total of 74% of patients had a known history of hypertension, but 51% were non-adherent to treatment. Type 2 diabetes was present in 5.5% of patients and 2.2% had both hypertension and diabetes. The most common risk factor was physical inactivity (81.1%). Symptoms varied, with headaches being the most common, affecting 34.4% of patients (Figure 2).

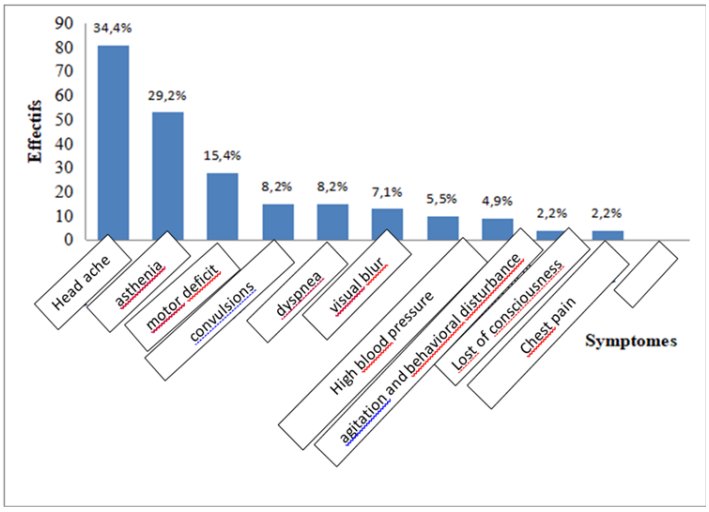

Figure 2: Distribution by symptoms.

Urgencies hypertensive accounted for 48.6%, emergencies hypertensive for 47.5%, and malignant hypertension for only 3.8% (Figure 3). Among hypertensive emergencies, strokes were the most frequent clinical presentation (32.5%) (Table 1).

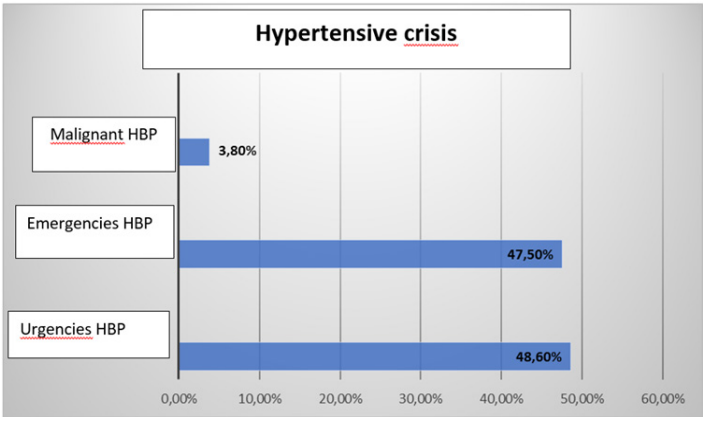

Figure 3: Types of hypertensive crisis.

Table 1: Clinical forms of hypertensive emergencies.

Clinical form	Effectif (n=181)	Frequence (%)
AVC	59	32,5
Hypertensive encéphalopathy	12	6,6
Acute kidney injury	5	2,7
Acute pulmonary edema	5	2,7
Acute coronary syndrome	3	1,6
Hypertensive retinopathy	2	1
Others	95	52,9
Total	181	100

Discussion

The objective of this study was to assess the epidemiological and clinical profiles of patients admitted for hypertensive crisis in two major referral hospitals in Yaoundé. We found a prevalence of approximately 8%, with hypertensive urgencies being slightly more frequent (48.6%) than emergencies ones (47.5%). The most common symptoms were headaches, fatigue, and neurological deficits. Among emergencies, strokes (32.5%) were the most frequent complications, followed by hypertensive encephalopathy (6.6%), acute kidney injury, and pulmonary edema (2.7% each).

Sociodemographic Profile

Our prevalence was higher than that reported in studies by Nkoke et al. in Buea and Nakalema et al. in Uganda (6.2% and 5.1%, respectively) [7,8]. This discrepancy may stem from our recruitment from multiple hospital departments, including internal medicine and emergency units, unlike the other studies that focused solely on emergency departments.

Our mean age of 56.53 ± 12.3 years is close to findings by Nkoke et al. (51.1 ± 14.9 years) and Vallelonga et al. in Italy (60.7 ± 13.9 years) [7,9]. This aligns with the known vascular aging process and lifestyle factors. The female predominance (56.35%) is consistent with Calderon et al. in Peru and Vallelonga et al., where menopause and reduced estrogen protection, specific female risk factors, contribute to elevated BP in women [9,10].

Clinical Profile

Known hypertension was present in 76.2% of patients, close to the 80% reported by Shao et al. in Tanzania [11]. However, adherence to antihypertensive treatment was low (11%), much lower than the 48.6% adherence reported by Abebe et al. in Ethiopia [12], likely due to cost, side effects, or discouragement.

Physical inactivity was the leading risk factor (81.1%), followed by menopause (29.8%) and obesity (21.5%), consistent with Shao et al. Sedentary lifestyle and poor diet and obesity lead to major cardiovascular complications such as hypertensive emergencies [11]. The most frequent symptom was headache (34.4%), similar to the 46.8% reported by Fragoulis et al. [13], which aligns with the Dieulafoy neurosensory signs described in hypertension. Hypertensive urgencies (48.6%) were slightly more common than emergencies ones (47.5%), with malignant hypertension in only 3.8%, resembling the findings by Nakalema et al. (67% hypertensive urgencies) [8]. Underdiagnosis due to limited diagnostic resources and poor BP measurement practices may explain this. Among hypertensive emergencies, stroke was the leading complication (32.5%), similar to Yizengaw et al. (38%) [14]. In contrast, Tall et al. in South Africa found acute pulmonary edema (66%) to be more common [15]. In Cameroon, strokes dominate due to high hypertension prevalence, poor treatment adherence, and limited access to appropriate care.

Conclusion

Hypertensive crisis primarily affect young adult women, particularly those with sedentary lifestyles and poor treatment adherence, with a high prevalence about 8%. Hypertensive urgencies are the most common form, with stroke being the main clinical complication.

Study Limitations

The retrospective design and poor quality of medical records were major limitations. However, this is one of the few cross-sectional studies conducted over a two-year period that explores the epidemiological and clinical aspects of hypertensive crisis in Cameroon.

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