

# Hospital Prevalence of Arterial Hypertension in the Cardiology Department of National Reference Teaching Hospital

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**Abstract:** *Introduction:* Arterial hypertension is a frequent pathology in cardiology consultations in Chad. We report these observations with the aim of determining the prevalence of arterial hypertension in cardiological consultation at the National Reference University Hospital in N'Djamena. *Methodology:* We conducted an 8-month retrospective study from September 12, 2019 to April 16<sup>th</sup>, 2020, in the Cardiology Department of the National Reference Teaching Hospital. The variables studied were socio-demographic and clinical. *Results:* out of 352 patients seen, 121 met the selection criteria, ie a hospital prevalence of 34.34% with a female predominance. The average age was 64.5 years old with extremes ranging from 17 to 94 years old. Household were the most represented with 47.93% of cases. The most common antecedents were multiparity, arterial hypertension during pregnancy, hyperuricemia with respectively 21, 48% then 4.95% for each of the last two. The most common associated cardiovascular risk factors (FDRCV) were obesity and diabetes with 13.22% and 6.61%. Grade III systolic hypertension was the most represented with 33.05% as well as grade III diastolic hypertension with 32.23% of cases. *Conclusion:* Hypertension is a public health problem in Chad. Hospital prevalence has almost tripled in 26 years in the same department.

**Keywords:** High Blood Pressure, Prevalence, Chad

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## 1. Introduction

High blood pressure is a major public health problem. Formerly known as a disease of the West, it also affects developing countries [1-4]. In Africa, its prevalence varies between 20 and 30% [5-8]. It affects all races, ethnicities and socio-professional layers [2]. Called the silent killer, hypertension causes frequent and serious complications. Support is expensive and often poorly followed. We report these observations with the aim of determining the prevalence of arterial hypertension in cardiological

consultation at the National Reference University Hospital in N'Djamena.

## 2. Methodology

This was an 8-month descriptive cross-sectional study from September 2019 to April 2020 carried out in the cardiology department of the National Reference Teaching Hospital. Were included in the study, all the patients seen in consultation during the period, having agreed to participate in the study and who were declared hypertensive according to

the WHO criteria. The variables studied were socio-demographic (age, sex, origin, profession) and clinical (history, associated cardiovascular risk factors, reason for consultation, systolic and diastolic blood pressure). The data were entered and analyzed using office 2010 software and EPI info 3.5.3.

### 3. Result

Out of 352 patients consulted, 121 of them met the selection criteria, for a hospital prevalence of 34.34%. The mean age of the patients was 64.5 years old with ranges of 17 and 94 years. The most common age groups were 60 - 79 years old, 40 - 59 years old and 80 - 89 years old with respectively 31.40%, 28.09% and 27.27% (Table 1). The male / female sex ratio was 0.77 with a female predominance (Figure 1). The majority of our patients were in the Chadian capital with 74.43% (Figure 2). Women households and traders were the most represented with 47.93% and 9.9% (Table 2) The most common antecedents were multiparity, arterial hypertension during pregnancy, hyperuricemia with respectively 21, 48% then 4.95% for each of the last two (Table 3). Among the associated cardiovascular risk factors, obesity and diabetes were the most common with 13.22% and 6.62% (Table 4). Dyspnea, palpitations, and headaches were the most frequently reported as a reason for consultation, with 14.87%, 13.22% and 9.91% respectively (Table 5). Grade III hypertension was the most common in systolic arterial hypertension with 33.05% of cases (Table 6). Among the diastolic hypertensive patients, 32.23% were grade III (Table 7).

Table 1. Distribution of patients by age group.

Age range	Patient	Percentage (%)
0 - 20 years old	3	2.4
20 -39 years old	13	10.74
40-59 years old	34	28.09
60- 79 years old	38	31.40
80- 99 years old	33	27.27
Total	121	100

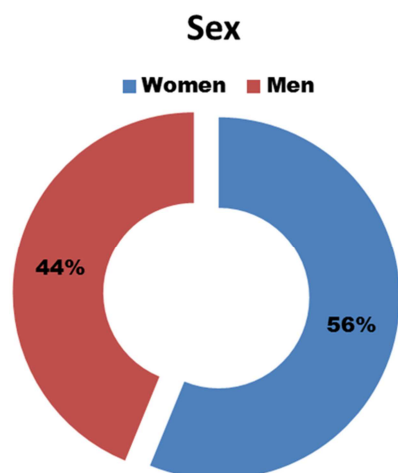


Figure 1. Distribution of patients by gender.

Table 2. Distribution of patients by profession.

Profession	Patients	Percentage (%)
Municipal agent	1	0.82
Veterinary agent	1	0.82
Butcher	1	0.82
Driver	2	1.65
Trader	12	9.9
Farmer	8	6.61
Student	6	4.96
Breeder	1	0.82
Teacher	4	3.33
Contractor	1	0.82
Official	3	2.47
Refrigeration engineer	1	0.82
Engineer	1	0.82
Marabout	1	0.82
Household	58	47.93
Carpenter	2	1.65
Military	4	3.33
Restorer	1	0.82
Tailor	2	1.65
Technician	1	0.82
Unemployed	10	8.26
Total	121	100

Table 3. Distribution of patients according to history.

History	patients	Percentage (%)
Medical		
Asthma	1	0.82
Stroke	3	2.47
Prostate cancer	1	0.82
Dilated Cardiomyopathy	1	0.82
Functional colopathy	1	0.82
Pulmonary fibrosis	1	0.82
Anorectal fistula	1	0.82
Hyperuricemia	6	4.95
Hemorrhoid	2	1.65
Hepatitis B	1	0.82
Heart failure	1	0.82
Renal failure	2	1.65
Goitre	1	0.82
Peptic ulcer	4	3.30
Peptic esophagitis	1	0.82
Pulmonary tuberculosis	2	1.65
HIV	1	0.82
Parkinson's	1	0.82
Psychiatric disorderS	1	0.82
Surgical		
Lithotomy	1	0.82
myomectomy	1	0.82
Thyroid cystectomy	1	0.82
Obstetrical		
Eclampsia	1	0.82
Pregnancy hypertension	6	4.95
Multiparous	26	21.48

Table 4. Distribution of patients according to the associated cardiovascular risk factors.

Associated cardiovascular risk factors	Patient	Percentage (%)
Diabetes	8	6.61
Tobacco	3	2.47
Alcohol	1	0.82
Obesity	16	13.22
Nothing	93	76.86
Total	121	100

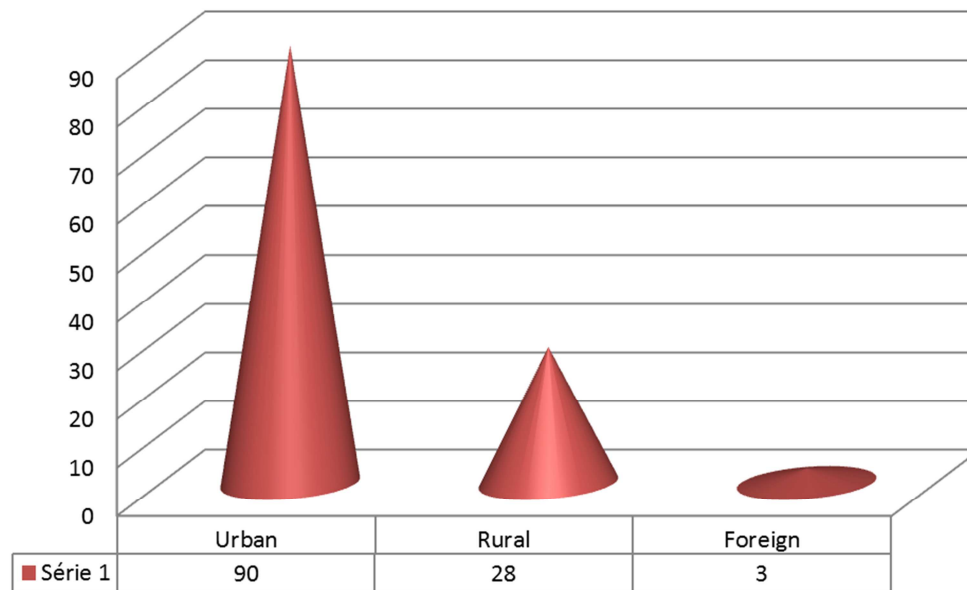


Figure 2. Distribution of patients according to dwelling place.

Table 5. Distribution of patients according to the reason for consultation.

Motif de Consultation	Patients	Percentage (%)
Anxiety	1	0.82
Ascites	1	0.82
Preoperative assessment	2	1.65
Headache	12	9.91
Headache + tinnitus	1	0.82
Headache + visual blurring	3	2.47
Headache + visual blurring + dizziness	7	5.78
Headache + dizziness	5	4.13
Headache + anxiety	1	0.82
Headache + tinnitus + dizziness	6	4.95
Headache + palpitation	6	4.95
Headache + dizziness + palpitation	2	1.65
Headache + cough	1	0.82
Cardiomegaly	3	2.47
Chest pain	1	0.82
Dyspnea	18	14.87
Epigastralgia	2	1.65
Visual blur	1	0.82
Hyperglycemia	1	0.82
Generalized edema	6	4.95
Palpitation	16	13.22
Polyarthragia	1	0.82
Maternity referral	3	2.47
HTA monitoring	16	13.22
Cough	3	2.47
Dizziness	1	0.82
Vomiting	1	0.82
Total	121	100

Table 6. Distribution of patients according to systolic blood pressure.

Systolic hypertension	Patient	Percentage (%)
No Hypertension	5	4.13
Grade 1	38	31.40
Grade 2	38	31.4
Grade 3	40	33.05
Total	121	100

Table 7. Distribution of patients according to diastolic blood pressure.

Diastolic hypertension	Patient	Percentage (%)
No Hypertension	21	17.35
Grade 1	28	23.14
Grade 2	33	27.27
Grade 3	39	32.23
Total	121	100

## 4. Discussion

We report a hospital hypertension prevalence of 34.34% over a period of 8 months. DAMOROU F. J. M in Togo in 2008 found a hospital prevalence of 22% of cases. [9] MOUANODJI M. found a prevalence of 12% in 1993, at the Cardiology department of the National Reference Teaching Hospital. [10] Over a 26-year interval, hospital prevalence in Chad has increased by about 200% of cases compared to data from MOUANODJI M. This could be explained by the epidemiological transition experienced by African countries. The average age was estimated to be 64.5 years with extremes ranging from 17 to 94 years old. DAMOROU F. J. M and MOUANODJI M. had respectively found a mean age of  $53.48 \pm 15.02$  years old and 45.3 years old. The female sex represented 56.19% against 43.80% of the men, with a sex ratio of 0.77. The majority of our respondents came from the city of N'Djamena, which represented 74.43% of cases. 47.93% of our respondents were households. Obesity was only 13.22% in our patients, although lower than the figures in the literature. DAMOROU F. J. M. had regained an obesity rate of 56.8%. DENOLLE in France in its series of 5,136 patients and TWAGIRUMUKIZA in its study of 144 cases had also found rates of 52% and 54.9% respectively in 2001 [11, 12]. On the other hand, CHAMONTIN in France for 3 months out of 156,470 cases and KOFFI in Côte d'Ivoire on a sample of 220 cases found frequencies of 30%

and 41.6% respectively [13, 14]. This difference is explained by the fact that the latter assessed obesity according to BMI greater than 30 Kg / m<sup>2</sup>. The breakdown by sex showed us that women were more obese than men in a proportion of 71.7% against 37.6%. The association between diabetes and arterial hypertension was found in 6.61% of patients. Our results were similar to those found by MORGENSEN in the USA in 2003 in his study on 457 patients and DONELLE in France in 2001 in a series of 5246 patients, who found 7.5% and 8% respectively [15, 11]. In our study, 14.87% of our patients had dyspnea as a reason for consultation, 33% had grade 3 systolic arterial hypertension and 32% of our respondents had grade 3 diastolic arterial hypertension.

## 5. Conclusion

High blood pressure is a public health problem in developing countries, especially in Chad, a country which, like other African countries, is currently experiencing an epidemiological transition. Thus, the prevalence of hypertension has almost tripled in 26 years in the same department of Cardiology. This is why a large multicenter study is needed to detect and manage so many patients in order to avoid complications.

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