

**Target Organ Damage and Cardiovascular Risk in Hypertensive Patients in Kara
(North Togo)**

Tcherou T^{1*}, Yayehd K², Atta D B³, Pio M⁴, Abena T Y⁵, Languede K⁶, Pessinaba S², Bakai A M¹, Baragou S⁴, Damorou F².

¹ Department of cardiology, University teaching hospital of Kara, Togo

² Department of cardiology, University teaching hospital of Campus, Lomé, Togo

³ Cardiology service of regional hospital of Sokode, Togo

⁴ Department of cardiology, University teaching hospital of Sylvanus Olympio, Lomé, Togo

⁵ Cardiology service of regional hospital of Kara Tomdè, Togo

⁶ Cardiology service of regional hospital of Tsevié, Togo

*Corresponding Author: Tcherou Tcha, Department of cardiology, University teaching hospital of Kara, Togo. E-mail: tcheroutcha@gmail.com; tel: +288 93 23 84 93

Abstract

Objectives: To establish the profile of target organ damage and assess the overall cardiovascular risk in hypertensive patients followed in Kara city.

Methodology: This is a prospective cross-sectional study conducted from July 2016 to June 2019 in three health centers in Kara city (North Togo). We included all hypertensive patients (old and new case) received in an outpatient setting and having carried out the minimum hypertension assessment making it possible to identify the different target organ damage. The overall cardiovascular risk was assessed according to the Framingham model. Data analysis was done by Epi info 3.5.4 software.

Results: The average age was 53.2 years with a female predominance (301 women versus 248 men). Associated cardiovascular risk factors were: Obesity and/or overweight (50.3%), abdominal obesity (34.2%), dyslipidemia (32.5%), diabetes (12.6%) and smoking (6.5%). The prevalence of infra clinical damage was 48.4% and that of clinical damage was 27.7%. For subclinical involvement, micro albuminuria was the most common (45.9%) while left heart

failure was the most common complication (23.8%). The low, moderate, high and very high cardiovascular risk was respectively 12,9%; 15,9%; 45% and 26,2%.

Conclusion: The prevalence of target organ damage in hypertensive patients is very high in our environment. In the majority of cases (71.2%) the overall cardiovascular risk is either high or very high

Key words: hypertension, target organs damage, cardiovascular risk.

Introduction

High blood pressure (hypertension/HBP) is recognized worldwide as a public health problem because of its frequency and the risk of cardiovascular, renal and oculo-cerebral complications [1, 2]. Hypertension is the most important risk factor for cardiovascular disease, including ischemic heart disease and stroke, making it the leading cause of death worldwide [3]. Currently, hypertension affects about one-third of the world's adult population and its prevalence increases with age to reach and exceed 50% beyond the age of 60 [4].

The rapid epidemiological transition of cardiovascular disease in developing countries has not spared Togo, which has a high prevalence of hypertension exceeding one third of the adult population [5].

The seriousness of the hypertension lies in the extent to which target organs are reached. Early detection of these complications is therefore essential in current practice, making it possible to establish the cardiovascular risk profile and adapt treatment [6].

In developing countries, hypertension is most often diagnosed when complications have already set in. In a hospital study [4], conducted at the University Teaching Hospital of Campus of Lomé in hypertensive patients over 50 years of age, cardiac disease was the most common, with left ventricular hypertrophy (LVH) being the leading damage found in 40% of cases.

The aim of our study was to establish the profile of target organ damage and to evaluate the overall cardiovascular risk in hypertensive patients followed on an outpatient basis in three health facilities in the city of Kara.

Methodology

- Setting, type and period of study

Three health structures were used as a framework for this study. These are two public centers (Kara University Hospital Centre [UHC], which is the national reference center for the northern part of the country, and Kara Tomdè Regional Hospital Centre [RHC]) and one private structure (Fraternity medical office, which is the only private center in the town of Kara that has a cardiologist for outpatient consultations and cardiovascular examinations). This is a prospective cross-sectional study conducted over a 36-month period, from July 2016 to June 2019.

- *Study population and survey design*

The study population consists of all hypertensive patients (new or old cases) seen on a cardiology outpatient basis during the study period. At the first consultation, anthropometric parameters and hemodynamic constants are collected by a nurse. The cardiologist then examines the patient and requests the minimum hypertension assessment according to the recommendations of the European Society of Cardiology [7]. The patient is included in the study when he or she returns with the results of the requested test, which are recorded on a specially designed survey form.

- *Studied Parameters and definitions:*

Blood pressure (BP) was taken with a properly calibrated Omron electronic blood pressure monitor in a patient at rest for at least 10 minutes [7]. For new cases, hypertension is defined as blood pressure (BP) $\geq 140/90$ mm Hg at three consecutive visits over a period of at least three months. Old cases are any known hypertensive patient who is already under treatment.

The anthropometric parameters studied are weight and height measured using a manually operated scale with a measuring rod. The calculation of the body mass index (BMI) enabled the subjects to be classified into three categories: obese (BMI ≥ 30 kg/m²), overweight (BMI between 25 and 30 kg/m²) and normal weight (BMI < 25 kg/m²) [8]. Abdominal obesity is assessed by waist circumference (WC) which was measured midway between iliac crest and the lower-most margin of the ribs, with a bare belly and at the end of normal expiration. The WC is considered normal if it is less than or equal to 80 cm in women and 94 cm in men. Above these values, we concluded that the person has central obesity [9].

For target organ damage we considered sub-clinical damage and clinical damage or complications. For the infra-clinical disorders, we considered left ventricular hypertrophy (LVH) and left atrial hypertrophy (LAH) in the heart level; microalbuminuria (urinary albumin between 100 and 300 mg/24H) in the kidneys and hypertensive retinopathy (Keith and Wagener classification) at eye level. The clinical complications or damage taken into account in this study are:

- Chronic heart failure selected on the basis of clinical and ultrasound signs.
- Ischemic heart disease was selected on the basis of clinical (angina pain) and especially electrical arguments (sub endocardial and sub epicardial ischemia, sub endocardial and sub epicardial lesion or Q-wave necrosis). Patients with previous ischemic heart disease (acute coronary syndrome) with or without treatment are also included.
- Cardiac rhythm disorders such as ventricular and supraventricular extrasystoles, atrial fibrillations and atrial flutters.
- Stroke documented by scan and cases of sudden hemi-body deficit not documented by scan but considered as stroke and treated as such.
- Obliterative arteriopathies of the lower limbs retained on the basis of clinical arguments (intermittent claudication, pulse drop or abolition with the systolic pressure index [SPI] < 0.9).

- Renal failure with creatinine values greater than or equal to 115 $\mu\text{mol/l}$ in men and 107 $\mu\text{mol/l}$ in women: (creatinine clearance < 60ml/min).

The overall cardiovascular risk was evaluated according to the Framingham model (d'Agostino and al) [10], resulting in four groups of subjects: patients with a low, moderate, high and very high overall cardiovascular risk.

- *Data processing and analysis.*

Quantitative variables are presented as average \pm standard deviation and qualitative variables as number of patients followed by percentage. Chi-square tests were used to compare categorical variables and that of student test were used to compare quantitative variables. P values less than or equal to 0.05 were considered significant. Data processing was performed using Epi info 7 software.

Results

- *General characteristics*

A total of 549 patients were included, among who 301 women (sex ratio male / female = 0.82). The average age of the patients was 53.2 \pm 12.3 years with extremes of 22 and 80 years. Thirty-five percent of the patients (192 patients) were younger than 50 years of age; for 38% (209 patients) the age was between 50 and 60 years and for 27% (148 patients) the age was over 60 years. Other general characteristics of the study population are shown in Table 1 and the figure 1.

- **Different types of damage**

Sub-clinical damage are the most numerous and are found in 48.4% of cases. They are more frequent in women (49.8%) than in men (46.8%) without statistically significant difference ($p = 0.09$). The kidney (micro albuminuria = 45.9%) is the organ most affected, followed by the heart (LVH + LAH = 45.1%) and finally the eye (hypertensive retinopathy = 44.1%). Table 2 summarizes these sub-clinical findings by gender.

As with sub-clinical disorders, clinical disorders are more frequent in women (31.9%) than in men (22.6%); $p = 0.01$. Table 3 compares these different complications according to gender.

- **Overall cardiovascular risk**

Seventy percent of the patients were at high and very high risk with more women (77.02%) than men (64.79%). Table 4 compares cardiovascular risk by gender.

Discussion

The handling of hypertensive patients is based on the research for target organ damage and assessment of the patient's overall cardiovascular risk. Our study was carried out on a relatively

young hypertensive population (average age = 53.2 years) and including all the socio-professional sectors of activity, which shows the representativeness of our sample. The average age of the patients in our study is similar to that of Mbaye et al in Senegal [11] and Bachir et al in Algeria [12] who found respectively 53 and 56.7 years. These studies show that hypertensive patients are nowadays younger and younger because of the high prevalence of risk factors for this disease such as sedentary lifestyle, obesity and high salinity diet.

In our series, obesity and especially central obesity were more frequent in women than in men with a statistically significant difference ($p < 0.001$). Most studies of hypertensive patients [4-5, 12-15] show a female predominance of obesity and especially central obesity. The reasons for this feminine predominance are sedentary lifestyles, nibbling and sometimes the cultural conception which is favorable to this phenomenon. That's, obese women value their husbands [5, 16-17]. The prevalence of diabetes in our study (12.6%) is almost similar to other studies in the sub-region: Pessinaba et al [18] in Senegal and Goeh Akue et al [19] in Togo found 10.4% and 10.8% respectively. Diabetes stay a risk factor strongly linked to hypertension, thus potentiating the risk of complications.

The severity of this disease is determined by the extent to which the target organs are affected, whether it is infra-clinical or clinical in a hypertensive patient, and guides the different handling strategies in terms of primary, secondary and sometimes tertiary prevention. The prevalence of these disorders (sub-clinical: 48.4% and clinical: 27.7%) in our study is very high, as in most studies carried out in developing countries, probably due to delayed diagnosis and treatment.

For infra-clinical disorders: LVH is found in 39.3% by Nibouche et al [13] in Algeria; 40.1% by Damorou et al [4] in Togo; 16.7% by Mbaye et al [11] in Senegal and 13.4% by Boivin et al [20] in France. For micro albuminuria, it is found in 19.7%; 13.6% and 5.4% respectively by Nibouche, Lafer et al [21] in Algeria and Bovin. As for hypertensive retinopathy (44.1% in our study), it is variously appreciated by the different authors: Damorou et al found 79.8%; Nibouche et al found 9.1% and finally Fourati et al [22] found 32%. The global analysis of these rates shows that the prevalence of infra-clinical disorders in our study is much higher than in other studies except for the rate of retinopathy which Damorou et al. estimated at 79.8%. These high prevalence rates in our study are the result of the different constraints in the management of hypertension in our locality. These constraints include the financial difficulties of the population to obtain the necessary medication, the unavailability of qualified health care personnel and sometimes the beliefs of a mystical origin of hypertension responsible for the neglecting to take medication [23]. It is then necessary to raise awareness among the population on the causes and especially the management of hypertension and then propose strategies for primary and secondary prevention of complications. The majority of studies in south of the Sahara or in the Maghreb show that sub-clinical damage is more frequent in women; this is probably due to the other cardiovascular risk factors that women accumulate, in particular obesity, central obesity and sedentary lifestyle. On the other hand, Boivin et al reports higher rates in men: LVH (16.3% versus 10.5%; $p < 0.0001$); micro albuminuria (6.5% versus 4.3%; $p = 0.012$). In the same study [20], clinical disease was more common in men (26.3% vs. 13.5%; $p < 0.0001$). More frequent

target organ damage in men in industrialized countries is thought to be the consequence of more frequent active smoking in men, since smoking is a major cardiovascular risk factor.

Clinical damage or complications are also very common in our study as well as in most studies in developing countries. In our study we recorded 18.4% cases of renal failure, 13.1% cases of heart failure, 9.3% of ischemic heart disease and 8.2% of stroke. In a similar study in Ivory Coast N'guetta et al [24] recorded similarly high rates: 12.9% of heart failure, 9.9% of stroke and 6.7% of ischemic heart disease; on the other hand the prevalence of renal failure (3.2%) is much lower than ours. As with sub-clinical damage, clinical damage is also more frequent in women than in men with a statistically significant difference ($p = 0.01$). A similar observation was made by Lafer et al [21]: cardiac disease (23.13% in women against 11.87% in men), kidney failure (12.5% against 7.5%) and stroke (5.63% against 3.75%). It is clear from all these studies that the prevalence of complications on target organs is very high in developing countries. It is therefore necessary to accentuate strategies for the management of hypertension and above all to raise awareness of this scourge, which is the main cause of disability and death in the world.

Cardiovascular risk is the probability of a cardiovascular event occurring in a patient during a given period. There is clear evidence that certain factors such as hypertension, diabetes, dyslipidemia and smoking increase this risk. There are several formulas to assess this risk, but the oldest and most widely used is the Framingham formula which distinguishes between four levels of risk: low, moderate, high and very high. In our study, more than two thirds (71.2%) of patients had a high or very high cardiovascular risk. A similar study made in Benin by Houenassi et al [25], the authors found slightly lower rates (60% of high and very high risk). Munyapara et al [26] in the Democratic Republic of Congo and Bruckert et al [27] in France found respectively 34.2% and 20% of patients who had a high risk in their series. The high prevalence of high and very high risk patients in our study is related to the high prevalence of target organ damage. Indeed, the presence of a complication or target organ damage or the presence of diabetes classifies the patient at high risk. The therapeutic strategy in this case is secondary and tertiary prevention to allow a better quality of life for the patient.

Conclusion

The prevalence of target organ damage in hypertensive patients is very high in our locality. It is higher in women than in men, with a statistically significant difference in clinical impairment. In parallel with target organ damage, the rate of patients with high and very high cardiovascular risk (71.2%) is significantly higher than that of patients at low and moderate risk (28.8%).

References

[1] Fourcade L, Paule P, Mafart B. Hypertension artérielle en Afrique subsaharienne : actualité et perspectives. *Med Trop* 2007; 67: 559-67

- [2] Kearney PM, Whelton M, Reynolds K. Global burden of hypertension: analysis of worldwide data. *Lancet* 2005; 365: 217-23.
- [3] Douglas Mann Douglas Zipes Peter Libby Robert Bonow. *Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine*. Single numero 10th edition. Boston: Saunders; 2014, 2040 p
- [4] Damorou F, Pessinaba S, Tcherou T, Yayehd K, Ndassa SMC, Soussou B. Hypertension artérielle du sujet noir âgé de 50 ans et plus à Lomé: aspects épidémiologiques et évaluation du risque cardiovasculaire (étude prospective et longitudinale de 1485 patients). *Ann Cardiol Angeiol* 2011; 60: 61-6.
- [5] Yayehd K, Damorou F, Akakpo R, Tcherou T, N'Da N.W, Pessinaba S, Belle L, Johnson A. Prevalence de l'hypertension artérielle et description de ses facteurs de risque à Lomé (Togo) : résultats d'un dépistage réalisé dans la population générale en mai 2011. *Ann Cardiol Angeiol* 2013; 62: 43-50.
- [6] Heim A, Pasche A, Feihl F, Liaudet L, Waeber B. Hypertension : détection précoces des lésions des organes cibles. *Rev med suisse* 2007, 3: 32534
- [7] ESC/ESH Guidelines for the management of arterial hypertension. *European Heart Journal* (2013) 34, 2159 –219
- [8] WHO. Obesity: preventing and managing the global epidemic. WHO Technical Report Series number 894. World Health Organ Tech Rep Ser 2000; 894:i–xii [1–253].
- [9] Alberti K, George MM, Zimmet P, Shaw J. The metabolic syndrome. a new Worldwide definition. *Lancet* 2005; 366:1059–62.
- [10] D'Agostino Sr RB, Vasan RS, Pencina MJ, Wolf PA, Cobain M, Massaro JM, et al. General cardiovascular risk profile for use in primary care: the Framingham Heart Study. *Circulation* 2008; 117: 743–53.
- [11] A. Mbaye, B. Dodo, A.A. Ngaïde, N.F. Sy, K. Babaka, J.S. Mingou, M. Faye, S.A. Sarr, M. Dioum, M. Bodian, M.B. Ndiaye, A.D. Kane, M. Ndour-Mbaye, M. Diao, B. Diack, M. Kane, D. Diagne-sow, I. Thiaw, A. Kane. L'hypertrophie ventriculaire gauche chez le sujet noir Africain hypertendu : Résultats d'une enquête transversale, réalisée en milieu semi-rural au Sénégal. *Annales de Cardiologie et d'Angéiologie* ; 2017 (66) : 210-216
- [12] A. Bachir Cherif, S. Bennouar, A. Bouamra, A. Taleb, F. Hamida, M. Temmar, M.T. Bouafia. Prevalence of diabetes and dyslipidemia in hypertensive patients in the area of Blida (Algeria). *Annales de cardiologie et d'Angéiologie*. 67 (2018); 198-203.
- [13] Nibouche WN, Biad A. Hypertension artérielle au moment du diagnostic du diabète de type 2 de l'adulte. *Annales de Cardiologie et d'Angéiologie*; (65) : 152-8, 2016.

[14] Soulemane Pessinaba, Komlavi Yayehd, Machiude Pio, René Baragou, Yaovi Afassinou, Tchaa Tcherou, Findibé Damorou. L'obésité en consultation cardiologique à Lomé: prévalence et facteurs de risque cardio-vasculaire associés - étude chez 1200 patients. Pan African Medical Journal. 2012; 12:99.

[15] F. Damorou, K. Yayehd, M.P. N'cho Mottoh, T. Tcherou, E. Ehlan, N.W. N'da and F. Randrianarisoa. Prevalence and Determinants of Obesity among Workers in Lome (Togo). Research Journal of Cardiology 6 (1): 19-27, 2013. ISSN 1819-3404 / DOI: 10.3923/rjc.2013.19.27

[16] Poterico JA, Stanojevic S, Ruiz-Grosso P, Bernabe-Ortiz A, Miranda JJ. The association between socioeconomic status and obesity in Peruvian women. Obesity (Silver Spring) 2011, <http://dx.doi.org/10.1038/oby.2011.288>

[17] Yusuf S, Hawken S, Ounpuu S. Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study. Lancet 2004; 364: 937–52.

[18] S. Pessinaba, A. Mbaye, G.A.D. Yabéta, H. Harouna, A.E. Sib, A.D. Kane, M.B. Ndiaye, M. Mbaye-Ndour, K. Niang, D. Diagne-Sow, B. Diack, M. Kane, M. Bodian, J.-B.S. Mathieu, A. Kane. Enquête de prévalence des facteurs de risque cardiovasculaire en population générale à Saint-Louis (Sénégal). Annales de cardiologie et d'Angéiologie. 62 (2013); 253-8.

[19] E. Goeh Akue, Y.M. Afassinou, B.J.F. Ido, M. Pio, S. Baragou, S. Pessinaba, V. Kumako, M. Belo. Age vasculaire et risque cardiovasculaire chez les patients victimes d'accident vasculaire cérébral. Annales de Cardiologie et d'Angéiologie 64 (2015) 128–131

[20] J.M. Boivin, C. Koch, L. Vigié, L. Meppiel. Prévalence de l'atteinte des organes cibles chez des patients traités pour une HTA : comparaison homme/femme. Étude ESSENTIELLE. Annales de Cardiologie et d'Angéiologie ; 2015 (64) : 150-157.

[21] H. Lafer, S. Chemali, N. Benfenatki. Profil de l'hypertension artérielle chez le sujet âgé. Annales de cardiologie et d'angéiologie 64 (2015), S37-S98.

[22] M. Fourati, F. Ben Mrad, N. Kaffel, L. Trabelsi, M. Abid. Les facteurs de risque cardiovasculaires chez le sujet age. Analyse de 150 cas. J.I. M. Sfax Vol.1 N°5/6 ; Dec03/Mars 04 : 29-34

[23] Koffi J. Konin C, Gnaba A, NGoran Y, Mottoh N, Guikahue MK. Intérêt de l'éducation thérapeutique dans l'observance du traitement antihypertenseur chez le noir Africain. Annales de cardiologie et d'Angéiologie. 2018 ; (67) 9-13

[24] R. N'Guetta, H. Yao, I. Brou, A. Ekou, P. Do, I. Angoran, B.A. Kouamé, J.B. Anzouan-Kacou, K.E. Kramoh, A.M. Adoh. Prévalence et caractéristiques du syndrome métabolique chez les Hypertendus à Abidjan. Annales de Cardiologie et d'Angéiologie 65 (2016) 131–135

[25] Houénassi D, Tchabi Y, Awanou B, Véhouknpé-Sacca J, Akindès-Dossou Yovo R, Sehonou J, Atadokpédé F, Hounto F, Lawani R, Gnanon A, d’Almeida-Massougboji M, Agboton H. Évolution du risque cardiovasculaire des patients traités pour HTA à l’hôpital d’instruction des armées de Cotonou. *Annales de Cardiologie et d’Angéiologie* 62 (2013) 12–16

[26] Munyapara SA, Mundu MG, Kakudji IL. Evaluation du risque cardiovasculaire global des patients hypertendus suivis dans les centres médicaux militaires de Kinshasa, RDC. *Kisangani Médical* Juin 2015, Vol 6 numéro 1.

[27] Bruckert E, Bonnelye G, Thomas-Delecourt F, André L, Delaage PH. Evaluation du risque cardiovasculaire en médecine générale en France. *Archives of Cardiovascular Disease* (2011) 104, 381—387.

Table 1 : General characteristics

	Total population (n= 549)	Men (n= 248)	Women (n= 301)	<i>p</i>
Age (average ± SD)	53,2 ± 12,3	54,7 ± 12	51,6 ± 12,4	0,001
SBP (average ± SD)	156,1 ± 22,7	155,8 ± 22,5	156,3 ± 23	0,9
DBP (average ± SD)	91,5 ± 17,1	91,3 ± 17	91,7 ± 17,2	0,9
Diabetes : n (%)	69 (12,6)	27 (10,9)	42 (14)	0,9
BMI ≤ 25kg/m ² : n (%)	273 (49,7)	137 (55,2)	136 (45,2)	0,025
BMI between 25 and 30 kg/m ²	153 (27,9)	78 (31,5)	75 (24,9)	0,1
BMI ≥ 30 kg/m ² : n (%)	123 (22,4)	33 (13,3)	90 (29,9)	< 0,001
Overweight + obesity: n (%)	276 (50,3)	111 (44,8)	165 (54,8)	0,025
Central obesity : n(%)	188 (34,2)	66 (26,6)	122 (40,5)	< 0,001
Dyslipidemia : n (%)	178 (32,4)	54 (21,8)	124 (41,2)	0,001
Tobacco use : n (%)	36 (6,5)	24 (9,7)	12 (4)	0,01
Alcohol : n (%)	168 (30,6)	109 (43,5)	59 (19,6)	< 0,001
Previous familial hypertension	42 (7,6)	24 (9,7)	18 (6)	0,9

SBP = Systolic Blood Pressure, DBP = Diastolic Blood Pressure, BMI = Body Mass Index, SD = standard deviation

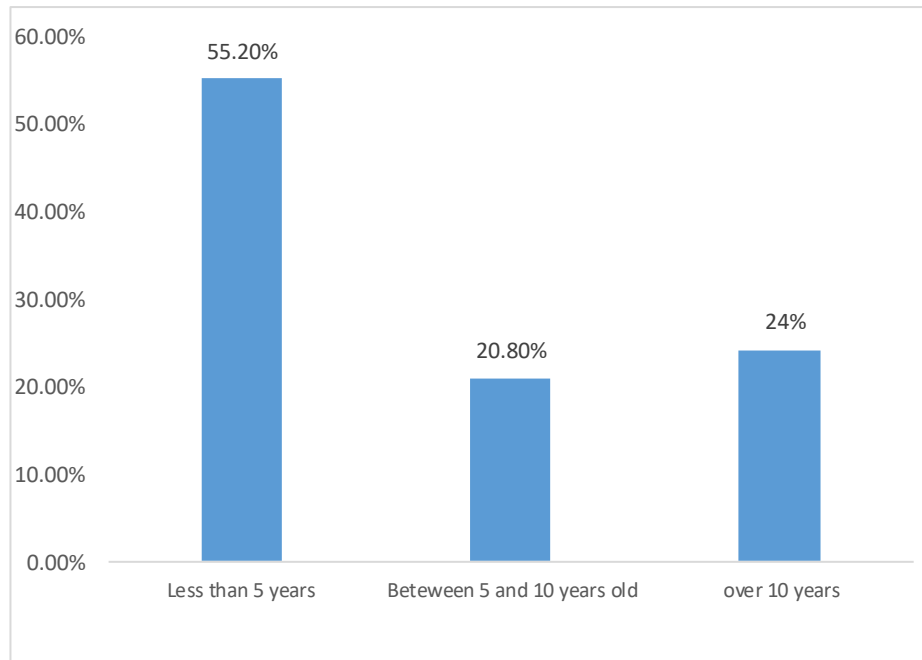


Figure 1: Duration of evolution of the hypertension

Table 2 : Subclinical damage

	Total population (n= 549)	Men (n= 248)	Women (n= 301)	<i>p</i>
LVH	236 (43%)	112 (45,2%)	124 (41,2%)	0,9
LAH	131 (23,9%)	61 (24,6%)	70 (23,3%)	0,95
Hypertensive retinopathy	242 (44,1%)	126 (50,8%)	116 (38,5%)	0,01
Stade I	80 (15,6%)	36 (12,1%)	44 (16,6%)	
Stade II	72 (12,9)	39 (13,7%)	33 (12,6%)	
Stade III	56 (10,2%)	25 (8,1%)	31 (12%)	
Stade IV	34 (6,2%)	26 (9,7%)	8 (3,3%)	
Microalbuminuria	252 (45,9%)	86 (34,7%)	166 (55,1%)	< 0,001

LVH = Left Ventricular Hypertrophy, LAH = Left Atrial Hypertrophy

Table 3 : Clinical damage or complications

	Total population (n= 549)	Men (n= 248)	Women (n= 301)	<i>p</i>
Rythm disorders	25 (4,5)	12 (4,8)	13 (4,3)	0,95
Left heart failure	131 (23,8%)	39 (15,7%)	92 (30,2%)	0,001
Global heart failure	72 (13,1%)	24 (9,7%)	48 (15,9%)	0,025
Ischemic heart disease	51 (9,3%)	26 (10,5%)	25 (8,3%)	0,9
Kidney failure	101 (18,4%)	37 (14,9%)	64 (21,3%)	0,05
Stroke	45 (8,2%)	16 (6,4%)	29 (9,6%)	0,1
OALL	58 (10,6%)	31 (12,5%)	27 (9%)	0,1

OALL = Obliterative arteriopathies of the lower limbs.

Table 4 : Overall cardiovascular risk

	Total population (n= 549)	Men (n= 248)	Women (n= 301)	<i>p</i>
Low risk	71 (12,9%)	41 (16,5%)	30 (10%)	0,025
Moderate risk	87 (15,9%)	46 (18,6%)	41 (13,6%)	0,1
Hight risk	247 (45%)	99 (39,9%)	148 (49,2%)	0,025
Very hight risk	144 (26,2%)	62 (25%)	82 (27,2%)	0,9
Total	549 (100%)	248 (100%)	301 (100%)	