

Epidemiological characterization of high blood pressure at a doctor's office in Viñales, Pinar del Río, Cuba

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Acronyms

HBP: high blood pressure

ACEI: angiotensin converting enzyme inhibitors

JNC: Joint National Committee

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ABSTRACT

Introduction: High blood pressure is the most universally widespread cardiovascular disease.

Objective: To characterize, from the epidemiological point of view, the arterial hypertension of the population older than 18 years from a doctor's office.

Method: Descriptive cross-sectional investigation at the Medical Office N° 14 from the University Polyclinic Fermín Valdés Domínguez in Viñales Municipality, from October to December 2013. From the 1079 individuals over 18 years of age belonging to this health area, an intentional sample of 180 patients diagnosed with high blood pressure was selected. The variables: age, sex, skin color, other chronic noncommunicable diseases, pharmacological treatment combination, and disease complications were analyzed.

Results: 38.3% of patients belong to the 51-60 years group. Male predominated with 118 patients (65.6%), and white skin with 121 (67.2%). Within those 180 hypertensive patients studied, 122 associated noncommunicable chronic diseases were found, predominantly diabetes mellitus (32.8%) and ischemic heart disease (29.5%). The majority of them used two drugs (58.3%) and 21.1%, three. Left ventricular hypertrophy (51.1%) and heart failure (38.9%) were the most frequently found complications.

Conclusions: There was a correlation between age and prevalence of high blood pressure. Males and white skin color prevailed. Type 2 diabetes mellitus was the main associated disease, the combination of two drugs was more frequent, and left ventricular hypertrophy was recognized as the predominant complication.

Key words: High blood pressure, Therapeutics, Complications, Epidemiology, Primary Health Care

Caracterización epidemiológica de la hipertensión arterial en un Consultorio Médico del municipio Viñales, Pinar del Río, Cuba

RESUMEN

Introducción: La hipertensión arterial es la enfermedad cardiovascular más extendida universalmente.

Objetivo: Caracterizar, desde el punto de vista epidemiológico, la hipertensión arterial de la población mayor de 18 años de un consultorio médico.

Método: Investigación descriptiva, transversal, en el Consultorio Médico N° 14 del Policlínico Universitario Fermín Valdés Domínguez del Municipio Viñales, de octu-

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bre a diciembre de 2013. De los 1079 individuos mayores de 18 años pertenecientes a esa área de salud, se seleccionó una muestra intencional de 180 pacientes con diagnóstico de hipertensión arterial. Se analizaron las variables edad, sexo, color de la piel, padecimiento de otras enfermedades crónicas no transmisibles, combinación de tratamiento farmacológico y complicaciones de la enfermedad.

Resultados: Un 38,3% de los pacientes pertenece al grupo de edad de 51 a 60 años. Predominó el sexo masculino con 118 pacientes (65,6%), y la piel blanca con 121 (67,2%). En los 180 hipertensos estudiados se encontraron 122 enfermedades crónicas no transmisibles asociadas, donde predominaron la diabetes mellitus (32,8%) y la cardiopatía isquémica (29,5%). La mayoría de los pacientes utilizaba dos fármacos (58,3%) y un 21,1%, tres. La hipertrofia ventricular izquierda (51,1%) y la insuficiencia cardíaca (38,9%) fueron las complicaciones más frecuentemente encontradas.

Conclusiones: Existió correlación entre la edad y la prevalencia de hipertensión arterial. Prevalcieron el sexo masculino y el color de piel blanco. La diabetes mellitus tipo 2 constituyó la principal enfermedad asociada, la combinación de dos medicamentos fue más frecuente, y la hipertrofia ventricular izquierda fue reconocida como la complicación predominante.

Palabras clave: Hipertensión arterial, Terapéutica, Complicaciones, Epidemiología, Atención Primaria de Salud

INTRODUCTION

Since more than a century, it is known that high blood pressure (HBP) decreases survival, which is why, for some authors, it is the most important health problem in developed countries¹. This is because it is common, usually asymptomatic, easy to diagnose and treat, and it has fatal complications if it is not adequately addressed. The National Institute of Hygiene and Epidemiology of Cuba reports a prevalence of 30% in urban areas and 15% in the rural ones¹.

The CARMELA² study reported a prevalence of 29% in individuals between 25 and 64 years in the city of Buenos Aires, higher than in other Latin American cities and it was estimated that at least one third of the urban population was hypertensive. This high prevalence is similar to that of the United States. In indigenous populations, there is a prevalence of 25.2% in Toba (Chaco province) and 28% in Wichis-Chorotes (Salta province)³.

It has been estimated that by 2025 there will be 1.5 billion people with HBP⁴. This disease is one of the most important medical health problems of the medicine in developed countries and in Cuba. Its control is the cornerstone to lessen significantly the morbidity and mortality, because the elevation of blood pressure causes cardiovascular, cerebrovascular and renal complications, leading to disability and death⁵.

In 2013, in Cuba, the prevalence of HBP was 214.8

per 1000 inhabitants, being the most affected the female sex, wherein a rate of 233.6 per 1000 population⁶ was found. In Pinar del Río, that rate for the same year was 269.9, beating other provinces of the country.

In the eighth report of the Joint National Committee (JNC 8) for the treatment of HBP in adults of 2014⁷, was suggested that the definition of HBP expressed in the JNC 7 (greater than 140/90 mmHg) remains reasonable. The only exception are adults older than 60 years, in whom a lower systolic blood pressure of 150 mmHg⁷ may be accepted.

The HBP represents a greater resistance to the heart, which responds by increasing its muscular mass (left ventricular hypertrophy) to address this overexertion. This increase in the muscular mass ends being detrimental because it is not accompanied by an equivalent increase blood flow and it may cause coronary failure and angina pectoris. In addition, the cardiac muscle becomes irritable and more arrhythmias occur. In those patients who have already had a cardiovascular problem, HBP can intensify the damage; also, HBP causes atherosclerosis and thrombotic phenomena that can produce myocardial and cerebral infarctions. In the worst case, this disease may weaken the walls of the aorta and cause dilation (aneurysm) or breaking, which would inevitably cause death⁸.

The most common symptoms are headache, dizziness, nausea, vomiting and nose bleeding. Neurological deficit and visual disturbances (candelillae)

may appear. But the most important sign is the finding by the doctor of high figures of blood pressure⁹.

High blood pressure is an important health problem aggravated by the close relationship it has with diseases that constitute the first causes of death and if we add that, the level of patients controlled in the country does not reach 50%, we easily realize that the control of this disease, of this risk factor, should be considered as a priority for the National Health System¹⁰.

This problem is present in the Doctor's Office N° 14 of the *Cooperativa República de Chile*, in the Viñales municipality, Pinar del Río, Cuba; because 17% of the population is hypertensive, hence, this disease is a health problem, reason why this research is developed, from the epidemiological point of view, to characterize HBP of the adults older than 18 years.

METHOD

An epidemiological, descriptive and cross-sectional research was conducted with hypertensive patients in the Doctor's Office N° 14, Viñales municipality, in Pinar del Río, Cuba; during the period from October to December, 2013. The studied population was integrated by 1079 individuals, over 18 years old, and the intentional sample consisted of 180 patients diagnosed with HBP.

Data were obtained through family health histories and medical records of each individual patient, where the following variables were collected: age, sex, skin color, non-communicable chronic diseases associated, type of hypotensive treatment used, and complications secondary to the HBP. For the analysis of the obtained data, relative (percentages) and absolute (number of cases) frequencies were determined, and they were expressed in tables for better understanding.

RESULTS

In **table 1** is shown the distribution of patients with HBP according to their age group, where most of them (69 patients) belong to the age group between 51-60 years (38.3%), followed by the group between 61-70 years, with 51 patients (28.3%).

The male sex was predominant (**Table 2**), with 118 patients, representing 65.6%, and white skin

color (**Figure 1**), with 121 hypertensive, representing 67.2%.

Table 1. Distribution by age of patients with hypertension. Doctor 's Office N° 14. Policlínico Universitario Fermín Valdés Domínguez. Viñales, Pinar del Río, Cuba. October-December 2013.

Age groups	Nº	%
Younger than 41	9	5,0
41 – 50	22	12,2
51 – 60	69	38,3
61 – 70	51	28,3
71 – 80	21	11,7
Older than 80	8	4,5
Total	180	100

Table 2. Distribution of patients with hypertension according to the sex.

Sex	Nº	%
Female	62	34,4
Male	118	65,6
Total	180	100

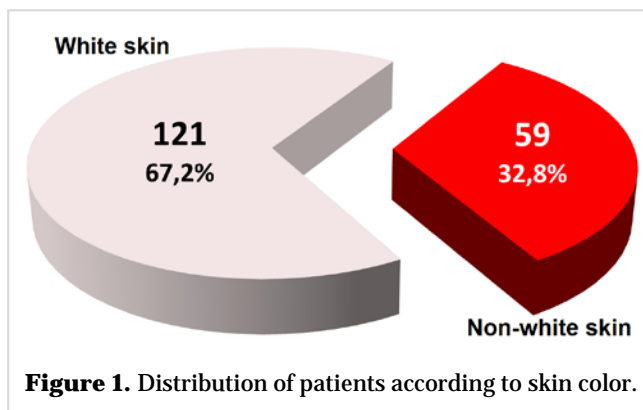


Figure 1. Distribution of patients according to skin color.

Table 3. Non-communicable chronic diseases associated with HBP (n=122).

Diseases	Nº	%
Hyperthyroidism	17	13,9
Diabetes mellitus type 2	40	32,8
Ischemic heart disease	36	29,5
Chronic renal failure	20	16,4
Others	9	7,4

In the 180 studied patients, 122 non-communicable chronic diseases associated were found (**Table 3**). There predominated diabetes mellitus (32.8%), followed closely by ischemic heart disease (29.5%) and further away, chronic renal failure and hyperthyroidism.

Most hypertensive patients were taking drug treatment (**Table 4**), from which 105 (58.3%) used two drugs, and 38 (21.1%), three of the known antihypertensive agents.

Left ventricular hypertrophy (51.1%) and heart failure (38, 9%) were the most frequently found complications (**Figure 2**) followed -with great differentiation- by the stroke (13.9%) and, to a lesser extent, nephroangiosclerosis and dissecting aneurysm of the aorta.

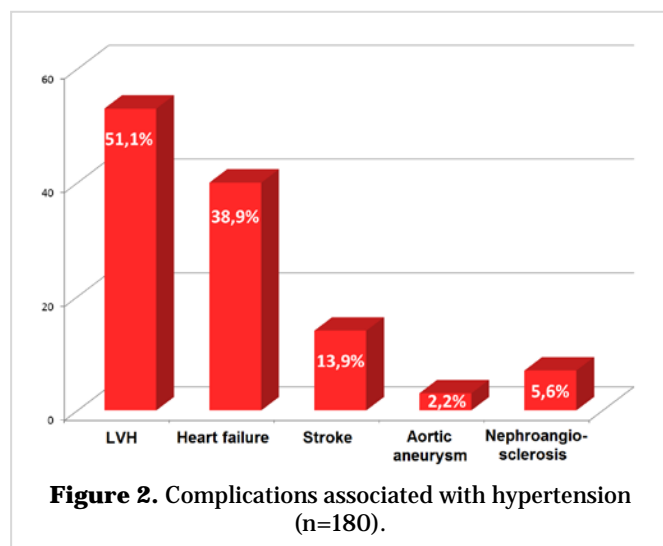


Figure 2. Complications associated with hypertension (n=180).

Table 4. Distribution of hypertensive patients according to the type of antihypertensive treatment used.

Type of treatment	Nº	%
Non pharmacological	12	6,7
One drug	25	13,9
Two drugs	105	58,3
Three drugs	38	21,1
Total	180	100

DISCUSSION

The risk of HBP rises proportionally with age; aging is accompanied by an increase of chronic diseases, which are the most common cause of death in the elderly.

Our results match those obtained by Curbelo Serrano *et al.*¹¹, predominating patients aged between 50-59 years (49%), followed by the group between 60-69 years. Similar results regarding age were obtained in the research conducted by García Leal *et al.*¹²; however, there are differences regarding sex, because in that same research, at the Doctor's Office Nº 24, belonging to the *Policlínico Manuel "Piti" Fajardo*, Guane municipality, in 2011, women prevailed (55.3%). The same happened in the study developed by Alonso Remedios *et al.*¹³ at the Doctor's Office Nº 5 of the Rodas's health area, in the province of Cienfuegos, in 2011, and Martínez Morejón¹⁴ at the *Policlínico "Ana Betancourt"*, Playa municipality, Havana, in 2010; with figures of 51.9% and 67%, respectively.

The consulted bibliography establishes that HBP is more frequent and severe in individuals of black skin color. Hernández Vázquez *et al.*¹⁵, in a study in Havana, found 39 black hypertensive patients for 60.9%. The results of this research do not correspond with that statement, which is justified because in the sample predominated white individuals, as in the study of Paramio Rodríguez and Cala Solozábal¹⁶, and also the one of Valdés Ramos and Bencosme Rodríguez¹⁷.

This last¹⁷ has similar results to ours, because the most associated chronic diseases were ischemic heart disease and diabetes mellitus. García Leal *et al.*¹² published similar findings, with 15.9% prevalence of the first and 13.3% of the second.

Most hypertensive patients require two or more drugs to achieve control of their HBP, as concluded on the recommendations exposed in the VIII report of the JNC⁷.

Since a few years ago, there is a call for an individualized and personalized treatment. Worldwide it is estimated that between 65-75% of hypertensive patients should be treated with at least one antihypertensive agent. In Cuba, between 75-79% of the hypertensive population meets this criterion. The antihypertensive agents most frequently used in the Cuban population are thiazide diuretics (including chlortalidone in a 56.0% and hydrochlorothiazide in a 37.0%), followed by the angiotensin converting enzyme inhibitors (ACEI), which include the captopril (50.4%) and enalapril (48.5%). Both groups of antihypertensive agents are used in the 75.0% of patients, either monodose or combined¹⁸.

The experience gained in the special consulting room of the *Hospital Hermanos Ameijeiras* in Havana, Cuba, for patients with complicated HBP, allowed to have control of the disease in 69 patients, to which it was necessary to indicate the use of three antihypertensive agents to 34.8% and four, to 21.7%; in the periodic evaluation of the patients in this consulting room, the medication dose was increased to 57% of them, and there were made changes or additions of antihypertensive agents to 43%, what demonstrates the need for the strict individual evaluation of the hypertensive patient and that they require correct and timely therapeutic modifications for adequate control¹⁹.

Studies performed by García Leal *et al.*¹² and Sellén Crombet *et al.*²⁰ coincide with the findings in this research, where 46.8% and 44.5% of hypertensive patients had a treatment of two drugs respectively.

Moreover, coinciding with our results, León Álvarez *et al.*²¹ found that the most frequent cardiac complication, caused by HBP in patients, was the left ventricular hypertrophy.

CONCLUSIONS

In this study predominated patients aged between 51 and 60, males and white skin color. The most common associated diseases were type 2 diabetes mellitus, ischemic heart disease and chronic renal failure. Most hypertensive patients used a combination of two drugs, and the left ventricular hypertrophy was the most frequent complication.

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