

Prevalence and risks associated with non-diagnosed arterial hypertension: comparative results in two Colombian cities

Prevalencia y riesgos asociados con la hipertensión arterial no diagnosticada: resultados comparativos en dos ciudades colombianas

Gisela González-Ruiz¹, Laura Caballero-Díaz², Yeis Borre-Ortiz³, María Jaqueline Expósito-Concepción⁴, Gisela Peralta-González⁵, Orlando Peralta-González⁶

Abstract

Objectives: To determine the prevalence and factors associated with undiagnosed hypertension in two Colombian cities.

Methods: multicentered, descriptive correlational study, with a quantitative approach, non-experimental design, in a population of 2000 inhabitants of Santa Marta and 1000 of Bucaramanga; Blood pressure measurement was performed by using the mercury sphygmomanometer following the technique and procedures recommended by the World Health Organization. Measurements of weight and height were obtained according to the application of worldwide accepted protocols and the identification of the risk factors through an instrument previously validated by experts; bioethical criteria were respected for studies with humans. The statistical analysis was performed by using the PAST software version 3.14.

Results: the prevalence of undiagnosed hypertension in Santa Marta was 6.5% and in Bucaramanga 3.4%; the factors associated in the population of Santa Marta were: family history (0.33), tobacco consumption ((0.97), alcohol use (0.20) and physical exercise (0.12) and in Bucaramanga, family history (0.95), tobacco consumption (0.73), alcohol (0.88) and absence of

¹ Nurse, Master in Basic Biomedical Sciences; PhD in Management Sciences. Professor and Researcher at the Nursing Program. Universidad Cooperativa de Colombia, Santa Marta. Contact: gisela.1060@gmail.com. Phone: 3003221132

² Nurse, Master in Public Health, Universidad Francisco de Paula Santander. Phone: 3004992601. Contact: laurapaolacd@ufps.edu.co

³ Nurse. Master in Research and Advanced Nursing Role. Teacher - Researcher Nursing Program. Universidad Metropolitana de Barranquilla. Contact: yeismiguel@gmail.com

⁴ PhD in Nursing, Nursing Department, Health Sciences Division. Universidad del Norte. Phone: 318 2777145. Contact: mexposito@uninort.edu.co

⁵ Medical, Regional Center for Research and Health Care. Phone: 3014834072. Contact: gisela.peraltag13@gmail.com

⁶ Psychologist, Master in Risk Prevention. Regional Center for Research and Health care. Phone: 3014519001. Contact: opg28@gmail.com

Correspondence to: Gisela González Ruiz. Mailing address: 700003. Telephone: 3003221132. Contact: gisela.1060@gmail.com

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*physical exercise (0.78), the reasons for not timely diagnosis, in both populations, were due to the absence of hypertensive signs and symptoms and periodic control of the state of health. **Conclusions:** the prevalence of undiagnosed arterial hypertension was higher in Santa Marta than in Bucaramanga, while the behavior of the risk factors was similar.*

Keywords: Arterial hypertension; Prevalence; Factor; Risk (Source: DeCS Bireme).

Resumen

Objetivo: Determinar la prevalencia y los factores asociados a la hipertensión no diagnosticada, en dos ciudades colombianas.

Métodos: estudio multicéntrico, descriptivo correlacional, con enfoque cuantitativo, diseño no experimental, en una población de 3000 habitantes; la medición de la tensión arterial se realizó mediante el uso del esfigmomanómetro de mercurio siguiendo la técnica y procedimientos recomendados por la Organización Mundial de la Salud, las mediciones de peso, talla y perímetro de cintura se obtuvieron conforme la aplicación de protocolos aceptados mundialmente y la identificación de los factores de riesgos se hizo mediante un instrumento previamente validado por expertos; se respetaron los criterios bioéticos para estudios con humanos. El análisis estadístico se realizó mediante el software PAST versión 3,14.

Resultados: la prevalencia de hipertensión arterial no diagnosticada en Santa Marta fue de 6,5 % y en Bucaramanga de 3,4 %; los factores asociados en la población de Santa Marta fueron: antecedentes familiares (0,33), consumo de tabaco ((0,97), uso de alcohol (0,20) y práctica de ejercicio físico (0,12) y en Bucaramanga: antecedentes familiares (0,95), consumo de tabaco (0,73), de alcohol (0,88) y ausencia de ejercicio físico (0,78); los motivos del diagnóstico no oportuno, en ambas poblaciones, se debió a la ausencia de signos y síntomas hipertensivos y de control periódico del estado de salud.

Conclusiones: la prevalencia de hipertensión arterial no diagnosticada fue menor en Bucaramanga que en Santa Marta, mientras que el comportamiento de los factores de riesgos fue similar.

Palabras clave: Hipertensión arterial, Prevalencia, Factor, Riesgo (Fuente: DeCS Bireme).

INTRODUCTION

According to the World Health Organization WHO (1), high blood pressure represents the most important cause of premature death, causing around 9.4 million deaths from heart disease: early detection reduces complications from this cause. Its origin is multifactorial and is related to: race, age, gender, (2-3); obesity (4) salt intake (> 60 mmol / day) (5), alcohol consumption (6), sedentary lifestyle (7), dyslipidemia, (8) smoking (9) and stress (10).

Complications of Arterial Hypertension (HBP) include coronary heart disease, pulmonary infections, and cerebrovascular accidents; (11) the risk factor in men is 34.3% and in women it is 26.5% (12). One in every 3 adults has high blood pressure, causing half of the deaths due to vascular brain injuries and heart disease (13). 11.5% of the population of Magdalena whose ages range from 18 to 69 years, admitted having had HBP and 9.1 % of them said to have been diagnosed as hypertensive; whereas, the death rate from cerebrovascular diseases was 37 per 100,000

inhabitants; which may precede arterial hypertension not opportunely identified, (14).

On the other hand, the National Health Institute (15) reported in 2013 that cardiovascular alterations represented the first cause of death among Colombians; its detection is essential to prevent heart attacks and strokes (16), whose factors are related to the traditional health model. This happens due to unhealthy eating habits and sedentary lifestyle (17). Its asymptomatic presentation has been recognized as "the silent enemy" (18). Therefore, preventive practices would contribute to the solution of the problem. (19) This study aimed to identify the prevalence and contributing factors of undiagnosed hypertension in two Colombian cities.

MATERIALS AND METHOD

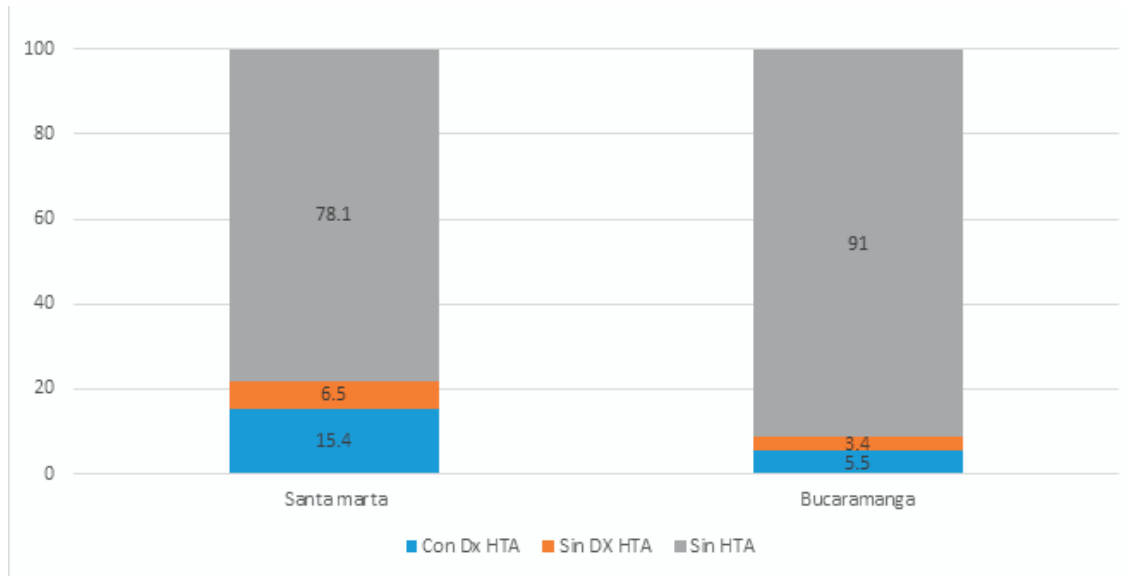
Multicentric descriptive, transectional, non-experimental descriptive study conducted in two Colombian cities in a population of 3000 adults over 18 years of age, 2000 from Santa Marta and 1000 from Bucaramanga, through intention sampling; Patients previously diagnosed with the disorder were excluded. The blood pressure was measured according to WHO protocol (13) modified, only sitting and standing positions, according to the scale (normal: less than 120-80 mmHg, prehypertension: 120-139 or 80-89 mmHg, Stage 1 hypertension: 140-159 mmHg or 90-99 mmHg, stage 2 greater than or equal to 160 or greater than or equal to 100 mmHg; (13) the body mass index consistent with the WHO assessment scale was obtained (Weight loss: <18.5, normal: 18.5-24.9, overweight > 25, obesity: 25.0-29.9, obesity class I: 30.0-34.9, obesity class 2: 35-39.9 and obesity class 3 :> 40) The sociodemographic information and associated factors (family history of hypertensive disorders, smoker and non-smoker, consumers or non-consumers of alcohol, practice or not

of physical exercise), was collected through the application of a survey designed for these purposes, validated by experts and after signing informed consent, bioethical criteria were respected (20) along with the declaration of Helsinki (21). The statistical analysis was carried out using the software Past, version 3.14 (22).

RESULTS

The behavior of the variables of the population per city is the following: in Santa Marta the median age was 35.5 with a lower limit value of 18 and higher than 95 years, the sex 54.85% (1117) female and 44.15% (883) male; whereas, in Bucaramanga, the median age was 32, with a lower limit of 18 and a higher limit of 91 years; 58% (580) female and 42% (420) male. In both cities, the predominant marital status was single, followed by free union marriage in Santa Marta and married in Bucaramanga. Regarding the socioeconomic stratum in Santa Marta, it was 1 (54.24%) and in Bucaramanga 3 (52.6%). The level of education of the population of Santa Marta was illiteracy and some grade of primary 27.55%; in Bucaramanga, the high school level predominated (21.5%). At the time of the study, 93.45% of the population of Santa Marta and 95.1% of the population in Bucaramanga was found to be affiliated with the social security system.

The frequency of undiagnosed or "silent" hypertension corresponded to 6.5% in Santa Marta and 3.4% in Bucaramanga, with a behavior of 78.1% and 91% of patients without the alteration. The non-diagnostic factor manifested by 100% of the population was the absence of signs and symptoms of arterial hypertension and the absence of controls on their health status. (See figure 1)



Source: Monitoring of blood pressure figures

Graph 1. Distribution of the population according to blood pressure conditions

Non diagnosed Hypertension in Santa Marta, according to gender, corresponded to 66.92% male and 33.08% female; socioeconomic stratum 1 (66.92%), unfinished primary school (18.46%). While in Bucaramanga male gender was (67.64%), socioeconomic stratum 3 (64.70%), complete high school (26.47%).

A positive association was found between risk factors and arterial hypertension in

Santa Marta: family history (0.33), tobacco consumption ((0.97), alcohol consumption (0.20) and physical exercise (0.12)) and in Bucaramanga: family history (0.95), tobacco consumption (0.73), alcohol (0.88) and absence of physical exercise (0.78) .The correlation between BMI and HTN was positive in Santa Marta and not associated in Bucaramanga, with a Spearman correlation of 0.5, and 0.0 respectively (See table 1)

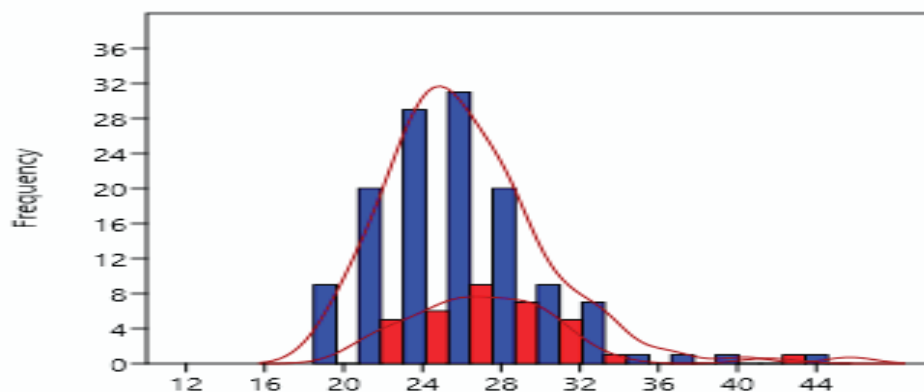
Table 1. Factors associated with uncontrolled hypertension in both cities

Variables	Santa Marta (Corr.de.Spearman)	Bucaramanga (Corr.de.Spearman)
Fam Ant/Hypertension	0,33	0,95
Tobacco / Hypertension	0,97	0,73
Alcohol/Hypertension	0,20	0,88
Sedentary / Hypertension	0,12	0,78
BMI / weight	0,82	0,65
BMI/per. Abd	0,71	0,48
BMI / Hypertension	0,5	0,0

Source: Statistic analysis

The behavior of the risk according to the body mass index in both groups was concentrated between 18 and 32, with a greater tendency

towards the extreme right in the Santa Marta group. (See figure 2)



Source: Trend analysis of the body mass index.

Figure 2. Distribution of body mass index in both cities

DISCUSSION

The prevalence of undiagnosed hypertension was higher in the city of Santa Marta than in Bucaramanga, which may be related to better anthropometric condition, socioeconomic stratification and educational level. However, the prevalence of undiagnosed hypertension is lower compared to the results of Menéndez, who found 37.4% of cases undiagnosed (23). Although the majority of the participants are affiliated to the Social Security System, actions for the early identification of alterations leave aside national regulations (24) (25), as a mechanism to reduce the factors that cause cardiovascular diseases, in addition to the high prevalence of absenteeism from preventive and control programs (26).

The male population presented a higher frequency of undiagnosed hypertension; fact that can be related to cultural characteristics and low assistance to health controls; result that goes in accordance with other studies (27), (28) (23), (29). On the other hand, the representative socioeconomic stratum in Santa Marta coincides with Barceló (30), who found that the less favored classes have a higher prevalence of arterial hypertension, where, in contrast, there was greater coverage of members of the Social Security System; while, in Bucaramanga, the educational level was concordant with Sánchez's study (31). In Santa Marta, there was influence of the body mass index with the abdominal girth, while in Bucaramanga no association was found, contrasting results with Cardona's findings (28). The risk factors

associated with undiagnosed hypertension are similar with that found by García (29).

These results allow proposing strategies aimed at the early diagnosis of hypertensive disorders. It is recommended to follow up on positive cases, as well as to implement care programs and university extension-research actions, in partnership with the health secretaries, so that through screening tests, new cases are monitored.

CONCLUSION

These results allowed to identify the prevalence of undiagnosed hypertension in two Colombian cities, marked by the non-perception of signs and symptoms; with higher prevalence in Santa Marta than in Bucaramanga. The behavior of the risk factors was similar in both cities.

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Conflict interests: the authors declare that there have been no values other than those generally found in the investigation.

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