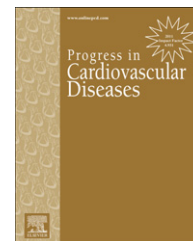


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Clinical Characteristics, Treatment Patterns and Outcomes of Hispanic Hypertensive Patients



Patrick T. Campbell, Selim R. Krim, Carl J. Lavie, Hector O. Ventura*

Department of Cardiovascular Diseases, John Ochsner Heart and Vascular Institute, Ochsner Clinic School-the University of Queensland School of Medicine, New Orleans, LA, USA

Department of Cardiology, Ochsner Clinic Foundation, 1514 Jefferson Highway, New Orleans, LA 70001, USA

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ABSTRACT

Hispanics are the largest and fastest-growing minority population in the United States, currently comprising about 16.3% (52 million) of the total population. With an increased prevalence of metabolic risk factors in this population, the rate of uncontrolled hypertension (HTN) in Hispanics significantly exceeds the rates observed among non-Hispanic blacks and whites. Unfortunately, data on HTN in Hispanics remains limited due to the under-representation of Hispanics in clinical trials; with most of the data primarily restricted to observational and retrospective subgroup analyses. This article aims to review the available data on prevalence, awareness and control of HTN, risk factors and some of the challenges unique to the Hispanics population. We also discuss treatment strategies derived from large HTN trials that included Hispanics.

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Hispanics, with an estimated population of 52 million, represent the largest minority group in the United States (US) and by 2050 are predicted to become the country's majority population with 1 in 3 US residents being of Hispanic descent.¹ Epidemiological and population based data suggest that the rate of uncontrolled hypertension (HTN) in Hispanics significantly exceeds the rates observed among non-Hispanic blacks and whites.² Approximately 29% of the adult US population carries the diagnosis of HTN³ and with estimates suggesting that this number will continue to increase, HTN and its consequences will remain a major public health issue especially in Hispanics. In addition, Hispanics are more likely to be affected by obesity and type 2 diabetes (T2D) when compared to non-Hispanic whites.⁴ The higher prevalence of these cardiovascular (CV) risk factors further contributes to the increase morbidity and mortality associated with HTN in this

population. Unfortunately, data on HTN in Hispanics still remain limited due to their under-representation in clinical trials; with most of the data primarily restricted to observational and retrospective subgroup analyses. This article aims to review the epidemiology and prevalence of HTN in Hispanics, clinical characteristics, treatment strategies and specific challenges such as lack of access to health care, low socioeconomic status, language barriers and degree of acculturation.

Demographics

Unlike other ethnic groups, Hispanics represent the only ethnic group defined not by geographic origin but rather by common language,^{5,6} which explains the heterogeneity and

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* Address reprint requests to Hector Ventura, MD, Department of Cardiology, John Ochsner Heart and Vascular Institute, Ochsner Clinic Foundation, 1514 Jefferson Highway, New Orleans, LA 70121.

E-mail addresses: pcampbell@ochsner.org (P. Campbell), Skrim@ochsner.org (S.R. Krim), CLAVIE@ochsner.org (C.J. Lavie), hventura@ochsner.org (H. Ventura).

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Abbreviations and Acronyms

ACE = angiotensin-converting enzyme

ALLHAT = Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack

ARB = angiotensin receptor blocker

BP = blood pressure

CAD = coronary artery disease

CV = cardiovascular

CVD = cardiovascular disease

DBP = diastolic blood pressure

DM = Diabetes Mellitus

HCTZ = hydrochlorothiazide

hsCRP = highly sensitive C-reactive protein

HTN = hypertension

JNC = Joint National Council

MetS = metabolic syndrome

MI = myocardial infarction

SBP = systolic blood pressure

SR = sustained release

T2DM = type 2 diabetes mellitus

US = United States

diversity of this group. In 2010 Mexican-Americans were by a large margin the most numerous Hispanic subgroup (63%), compared to Puerto-Ricans (9.2%), Cubans (3.5%), Salvadorans (3.3%) and Dominicans (2.8%), and the remaining 18.2% self-defined as other-Hispanic or Latino origin. According to the 2010 Census, 308.7 million people resided in the US of which 50.5 million (or 16%) were self-described Hispanic or Latino. Additionally, more than half of the population growth in the US over the last decade was attributable to the increase in the Hispanic population.¹ In the last decade, the Hispanic population grew by 43%, which was four times the growth in the total population. Population growth between 2000 and 2010 varied by Hispanic subgroup; the population of people of Mexican descent

increased by 54% from 20.6 million to 31.8 million. Mexican-Americans accounted for about three-quarters of the total growth (15.2 million) in the Hispanic population during the last decade. Puerto Ricans grew by 36%, increasing from 3.4 million to 4.6 million, Cubans increased by 44%, growing from 1.2 million in 2000 to 1.8 million in 2010 and Hispanics who reported other origins increased by 22%, from 10.0 million to 12.3 million.

HTN prevalence, awareness and control

The prevalence of HTN varies among racial/ethnic groups, with the highest rate seen among blacks (40.4%) when compared with whites (27.4%) and Mexican-Americans (26.1%).^{1,5} However with the continued growth of the Hispanic population in the US, the number of Hispanic patients at risk for HTN and its CV consequences is rapidly going to overshadow both blacks and whites. Moreover data from the National Health and Nutrition Examination Survey for the period 2003–2010 demonstrate disparities in blood pressure (BP) control for whites (48.6%), blacks (43.0%), and Mexican-Americans (35.5%) (Fig 1). Additionally, among those with HTN, the proportion with previously defined stage 2 HTN was greater for Mexican-Americans (19.2%) and blacks (17.7%) compared with whites (12.3%).¹

Risk factors for HTN

The significant risk factors for the development of HTN in the general population have been well established including age, tobacco use, obesity, T2D, sedentary lifestyle, poor nutritional status (low intake of fruits and vegetables), decreased potassium intake and excessive sodium and alcohol consumption.⁷ However, in the Hispanic population as in other minority immigrant populations, a unique risk factor has been identified; acculturation and duration of time in the US.⁸ While much of the epidemiological data in the Hispanic population assumes a homogenous population, it has been obtained from a predominantly Mexican-American cohort, and does not consider the heterogeneous diversity of Hispanics in the US. Interestingly, recent data suggest that while the major risk factors for the development of HTN exist within the Hispanic population, there are subtle yet important differences between various ethnic and cultural Hispanic groups.⁸ (Fig 2)

T2D and metabolic syndrome (MetS)

T2D is almost twice as prevalent among Hispanics and carries significantly higher mortality compared to Non-Hispanic whites.⁹ However Daviglius et al. recently reported a difference in the prevalence of T2D within Hispanic sub-groups, Mexican-Americans and Dominican have the highest rates (19 and 18%, respectively) followed closely by those of Central American descent (17%), then Cubans (13%) and the lowest prevalence in Hispanics of South American heritage (10%).⁸ The increased prevalence of T2D in Hispanics is not limited to adults and is much more prevalent in Hispanic adolescences (age 10–19) compared to whites. Furthermore the incidence of newly diagnosed T2D is highest among Hispanics.¹⁰ With the increasing obesity epidemic risk for CV diseases (CVD) is not limited to T2D, the prevalence of MetS is high in the Hispanic population as well. Hispanic adolescents have more than twice the risk of developing MetS compared to non-Hispanic whites (7.6 vs. 3.1%, respectively).¹¹ In Hispanic adults there exists disparity in the prevalence of MetS between sexes. Hispanic women have a 22% higher age-adjusted risk for MetS compared to their male counterparts. Mexican-American men have a similar risk of MetS as non-Hispanic whites, but higher than non-Hispanic blacks. However, Mexican-American women have the highest prevalence of MetS (41%) compared to 32 and 39% for non-Hispanic whites and non-Hispanic blacks, respectively.¹¹ In a recent meta-analysis,¹² MetS carried twice the risk (RR: 2.35) for all-cause mortality and CVD (including CVD death, myocardial infarction and stroke). Finally estimates from the National Health Instrument Survey data (1984–2000), US Census bureau data (2000) and an epidemiological study of T2D-associated mortality¹³ demonstrated that Hispanic children born in 2000 had almost twice the residual life-time risk of developing T2D compared to non-Hispanic whites, and it was slightly higher than non-Hispanic blacks.

Obesity

Obesity, a major risk factor for HTN and CVD, continues to be a pervasive epidemic in the US. The prevalence of over-weight/

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