Seminars in Perinatology ▮ (2017) ▮▮▮–▮▮▮

Available online at www.sciencedirect.com

Seminars in Perinatology

www.seminperinat.com

Ethnic and racial disparities in hypertension management among women

Theresa M. Beckie, PhD, FAHA

College of Nursing and Division of Cardiovascular Sciences, College of Medicine, University of South Florida, 12901 Bruce B. Downs Blvd, Tampa, FL, 33612

ARTICLE INFO

Keywords:
Hypertension
Pregnancy
Cardiovascular disease

ABSTRACT

Hypertension is a major independent risk factor for cardiovascular disease for all ethnic and racial groups. Compared with other lifestyle and metabolic risk factors, hypertension is the leading cause of death in women. Women with preeclampsia are three times more likely to develop chronic hypertension and have an elevated risk of future cardiovascular disease. The objective of this article is to provide a review of the factors related to racial and ethnic disparities in blood pressure control. This is followed by a summary of contemporary clinical practice guidelines for the prevention, through lifestyle behavioral modification, and treatment of hypertension with pharmacotherapy.

Introduction

Cardiovascular disease (CVD) is the leading cause of death of women in the United States.[1] There is a disproportionate burden of CVD in the black population, with higher prevalence of risk factors including hypertension, overweight/obesity, type 2 diabetes mellitus, and physical inactivity compared with other ethnic groups. Hypertension is a major independent risk factor for CVD for all ethnic and racial groups,[2] and the leading preventable cause of premature death worldwide.[3] Compared with other lifestyle and metabolic risk factors, hypertension is the leading cause of death in women.[4] Further, women with a history of preeclampsia are three times more likely to develop chronic hypertension and have an elevated risk of future CVD.[5,6] Sex-specific clinical practice guidelines recommend screening all women for a history of preeclampsia as a major risk for CVD.[7,8] The aim of this article is to review the epidemiology of ethnic and racial disparities in hypertension and blood pressure (BP) control among women, factors associated with poor BP control, and summarize contemporary practice guidelines for the prevention and treatment of hypertension for racially and ethnically diverse women.

Epidemiology of ethnic/racial disparities in hypertension among women

More than 70 million Americans and more than 1 billion worldwide have hypertension defined by a systolic blood pressure (SBP) of at least 140 mmHg and a diastolic blood pressure (DBP) of at least 90 mmHg.[3,9] The prevalence of hypertension among U.S. adults was estimated to be 34% in the National Health and Nutrition Examination Survey data (NHANES) 2011–2014, which equates to 44.9 million women.[1] Racial disparities in hypertension prevalence have persisted over time.[10] The prevalence of hypertension is 46.3% among non-Hispanic black women, 32.3% among non-Hispanic white women, and 30.7% among Hispanic women.[1] Compared with whites, blacks develop hypertension earlier in life and their average BP is much higher through 75 years of age.[11] Women are at higher risk for developing resistant

E-mail address: tbeckie@health.usf.edu

http://dx.doi.org/10.1053/j.semperi.2017.04.004
0146-0005/

hypertension that is typically defined as uncontrolled BP > 140/90 mmHg or on three or more antihypertensive drugs or using four or more antihypertensive drugs regardless of BP control.[12,13] Women with resistant hypertension have a significantly higher risk of dying compared with women without hypertension, particularly for older and black women, and those with other CVD risk factors.[14]

Racial and ethnic differences in cardiovascular health have been documented extensively.[15] Compared with non-Hispanic white women, black and Hispanic women have more diabetes mellitus, hypertension, heart failure, and obesity at the time of presentation with acute myocardial infarction (AMI).[16,17] Acute myocardial infarction prevalence by race and ethnicity interacts with age. In women younger than 55 years with AMI, black women have higher mortality than white women even after adjustment for chronic renal failure, health insurance, and treatment in the first 24 h.[18] Young black women have higher hospitalizations rates for AMI and more comorbidities than young white women.[19] Hypertension is more strongly associated with AMI in women compared with men.[20] Blacks in the United States have one of the highest rates of hypertension in the world and have earlier onset, poorer control, increased organ damage, and more prevalent comorbid conditions compared with white Americans.[21,22] Low socioeconomic status, adverse health behaviors, and limited access to appropriately trained healthcare providers variably explain the excess hypertension-related morbidity and mortality in blacks.[21]

Awareness of hypertension and risk of cardiovascular disease

Although knowledge and awareness of CVD has improved over the past 15 years, many women remain unaware that heart disease is the leading killer of women and of the major risk factors for heart disease.[23] Minority women compared with white women are far less aware of CVD as their greatest mortality threat.[23] Considerable disparities persist in knowledge and awareness across race, ethnicity, and urban status particularly for women of American Indian race, Hispanic ethnicity, and non-urban status.[24,25] Data from NHANES 2011 to 2012 show that 17.2% of U.S. adults are unaware they have hypertension.[26] Blacks, compared with whites, are more likely to be aware of their hypertensive status and more likely to be in treatment, but less likely to have well-controlled hypertension.[27–29] Non-Hispanic black adults are more aware of their hypertensive status than Hispanics. NHANES data also revealed that non-Hispanic blacks had 90% higher odds of poorly controlled BP than non-Hispanic whites after adjustment for socio-demographic and clinical characteristics.[30] In secondary analyses, among those with hypertension, non-Hispanic blacks and Mexican Americans had 40% higher odds of uncontrolled BP than non-Hispanic whites after adjustment for socio-demographic and clinical characteristics.[30] Hispanics also have lower rates of hypertension control compared with whites but are 22% less likely to be aware of their hypertension and 27% less likely to be treated.[10,31,32] According to NHANES 2003–2012, hypertension control rates improved from 39% to 52%, awareness increased from 75% to 82%, and treatment improved from 65% to 74.5%.[33]

Factors related to racial and ethnic disparities in blood pressure control

Previous studies have examined multiple correlates of racial and ethnic disparities in hypertension management including psychosocial and demographic characteristics of the individual, clinical characteristics of the medical regimen, and the healthcare contexts in which individuals live.[34] While some argue that the persistent racial and ethnic differences in hypertension control is due to less aggressive treatment in blacks, fewer or less effective medications, or genetic and other physiological factors making medications less effective for blacks than whites,[35] others suggest that differences in social and healthcare environments account for substantial disparities.[36] Characteristics of local environmental factors such as neighborhood poverty, crime rates, availability of healthy foods, and racial isolation contribute to disparities in BP control.[37] Community characteristics (e.g., racial segregation, community-level education, income characteristics, employment opportunities, and neighborhood safety) influenced CVD risk behaviors in different racial and ethnic groups in the WISEWOMAN study (Well-Integrated Screening and Evaluation for Women Across the Nation).[37] Blacks displayed the most CVD risk, whereas Hispanic and Alaska Native women displayed the least. While some of the racial and ethnic disparities in CVD risk factors were explained by differences in individual and community characteristics, others persisted even after controlling for these factors.[37] Barriers to optimal BP control for racial and ethnic minorities can include lower quality of care and suboptimal provider–patient communication.[38,39] A study examining the influence of patient–provider communication among blacks found that collaborative patient–provider communication was associated with better adherence to health behaviors in racially concordant patient–provider dyads.[40]

Health behaviors are significant contributors to hypertension disparities. Adherence to hypertension treatment recommendations is lower in black compared with white individuals[41] and dissimilarities in medication adherence are linked with hypertension control disparities.[42] Other cardiovascular health factors (adiposity, total cholesterol, BP, and fasting plasma glucose) and behaviors (tobacco use, exercise, and diet), outlined in the American Heart Association's 2020 strategic impact goals for cardiovascular health promotion and disease reduction,[43] also contribute to disparities in hypertension control.[44,45] Prospective, longitudinal analysis of the prevalence of cardiovascular health metrics among 5310 blacks (63.5% women) from the Jackson Heart Study showed that only 19% engaged in adequate physical activity, 18% had adequate BP, and 14% had a normal body mass index. Meeting ideal dietary intakes was rare (0.9%), with extremely low prevalence of achieving sodium (0.2%) and whole grain (4.1%) recommendations.[45] However, the zero prevalence of meeting ideal levels of all seven cardiovascular health metrics is not unique to the black population.