

# HEALTH INEQUITIES IN HYPERTENSION AND RELATED ORGAN DAMAGE

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This issue of *Ethnicity & Disease* contains articles submitted in response to a call for papers seeking research and information focused on health inequities in hypertension and other hypertension-related target organ damage and risk factors. Collectively, the articles address broad themes of: surveillance; health services research; conceptual and theoretical frameworks for achieving health equity; strategies for research training and career development; and an array of research on hypertension-related target organ damage and the implications for clinical and public health practice. Populations studied or addressed in these articles included normotensive and hypertensive adults who were predominantly African American, White, Hispanic, or people of Caribbean origin. No articles were received on hypertension and target organ damage in children. The spectrum of risk factors and target organ damage addressed ranged from pre-clinical markers of vascular and ventricular remodeling to migraine, aortic dissection, heart failure, and cardiovascular death.

For example, Mezue et al<sup>1</sup> showed that in normotensive Black patients of Caribbean origin, the presence of a non-dipping nocturnal blood

pressure pattern was associated with increased prevalence of adverse left ventricular remodeling characterized by greater prevalence of left ventricular concentric remodeling as well as eccentric and concentric left ventricular hypertrophy (LVH). In African American adults in the Jackson Heart Study, Deere et al<sup>2</sup> also demonstrated an association between hypertension and the subclinical markers of coronary artery calcification (CAC), carotid-intima media thickness (CIMT), LVH, and peripheral artery disease (PAD). They also showed that in models that fully adjusted for hypertension, other cardiovascular risk factors, demographics, and health behaviors, socioeconomic position was inversely associated with PAD and CIMT while income was inversely correlated with LVH.<sup>2</sup>

Two articles address the promise and challenges of different care models for hypertension treatment and control in western Kenya<sup>3</sup> and Baltimore, Maryland.<sup>4</sup> They highlight the importance of access to medication, training, health education, and acknowledge barriers including the limited reach of some programs and patient challenges in retention and program completion.<sup>3,4</sup> Huffman et al<sup>5</sup> also address strate-

gies to enhance the recruitment and retention of racial and ethnic minority patients in intervention studies. They reported that in the Families Improving Together (FIT) for Weight Loss Randomized Controlled Trial, families recruited using culturally relevant strategies were nearly two-fold more likely to schedule a baseline visit than families recruited from non-sociocultural mediums.<sup>5</sup>

The importance of training and capacity-building for career paths in biomedical research for under-represented racial and ethnic minority students and early stage investigators is presented in two articles from programs supported by the National Heart, Lung, and Blood Institute.<sup>6,7</sup> In their 17-year chronicle of the Jackson Heart Study Scholars program, White et al<sup>6</sup> present preliminary data documenting the success of the program and discuss the primary drivers of individual student capacity-development as well as faculty and institutional capacity-building within the framework of a population-based, longitudinal study of African Americans and cardiovascular disease.<sup>6</sup> Boyington et al<sup>7</sup> also present the Programs to Increase Diversity among Individuals Engaged in Health Related Research (PRIDE) with its core focus on mentoring as a critical strategy for increasing research preparedness and professional development of groups underrepresented in the biomedical research workforce.

Two articles demonstrate the continued importance of population-level surveillance in informing clinical and public health practice for the prevention, treatment, and control of hypertension and related target organ

damage.<sup>8,9</sup> Examining data from the New York City Health and Nutrition Examination Survey (NYC HANES), Giambrone et al<sup>8</sup> found large and important ethnic subgroup differences in hypertension prevalence that were undetected when stratified by broader racial/ethnic classifications. For example, within the Hispanic population in the NYC HANES, a four-fold difference in hypertension prevalence was noted between Dominicans (32.2%) and Mexicans (8.1%).<sup>8</sup> White et al<sup>9</sup> showed that geospatial analysis using hotspot cluster mapping of Black/White hypertension across South Carolina can identify areas with high hypertension prevalence clusters to inform state-level policy development for improving population-level prevention and control of hypertension.<sup>9</sup>

Two articles in this issue provide signs for optimism in hypertension treatment and control. Cooper et al<sup>10</sup> present a case study for highlighting the evolution of an academic-community partnership to overcome hypertension-related disparities and a conceptual framework for achieving health equity. Key elements and contextual factors necessary for active and successful community engagement are highlighted.<sup>10</sup> Norris et al<sup>11</sup> found a statistically significant 30% lower all-cause mortality and 29% lower incidence of coronary heart disease in African American veterans with normal kidney function in comparison to their White peers. Importantly, the lower rates of cardiovascular mortality and incident CHD were strongest in younger African Americans and attenuated across patients aged >70 years. Stroke rates were similar in Black and White veterans aged <70 years. The

primary drivers of the lower cardiovascular mortality in African American veterans deserve further study.

As the commentary from the World Hypertension League correctly notes, programs that led to the dramatic declines in heart disease and stroke mortality that began in the 1970s in the United States and other high-income countries, included models for the aggressive detection, treatment, and control hypertension.<sup>12</sup> Models that have worked to control hypertension are ideal and timely for global implementation and scale-up for the prevention of hypertension-related target organ damage and the elimination of related disparities.

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#### CONFLICT OF INTEREST DISCLOSURE

None

#### DISCLAIMER

The views expressed in this article are those of the author and do not necessarily represent the views of the National Heart, Lung, and Blood Institute; National Institutes of Health; or the United States Department of Health and Human Services.

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