

A longitudinal study of mid-to late-life blood pressure profiles as risk factors for Alzheimer's disease in Hispanics

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A longitudinal study of mid-to late-life blood pressure profiles as risk factors for Alzheimer's disease in Hispanics

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1

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Research Abstract

SUMMARY Alzheimer's disease (AD) has a high impact in the health of aging Hispanic populations. Several studies in the U.S. and Latin America and the Caribbean have shown higher rates of AD in Hispanics/Latinos than in their non-Hispanic counterparts. Further, AD onset occurs about 7 years earlier and is more often accompanied by systemic/cardiovascular comorbidities (e.g. hypertension, diabetes). Yet, few longitudinal studies have focused on AD in Hispanics, and the underlying causes of the differences between Hispanics and non-Hispanics are not well understood. In response to the PAR-15-350, we will focus in one of the most robust risk factors for AD that has not systematically been studied in Hispanic populations: hypertension in mid-life. The proposed research will exploit rich existing longitudinal cardiovascular and cognition data on the Hispanic cohort of the Maracaibo Aging Study (MAS), and the fact that blood pressure (BP) was measured with both, conventional – office-based, as well as ambulatory BP (ABPM) techniques in several occasions to analyze how mid- and late-life blood pressure (BP) traits, prior to onset of dementia, are related to AD incidence, onset, and progression. In Aim 1, we will evaluate the association between ABPM and conventional BP in mid- and late-life and AD by: 1) Populating a central database with a comprehensive set of longitudinal data for 2500 MAS participants, including conventional BP, ABPM, and other cardiovascular traits; cognitive, clinical, demographic, and behavioral phenotypes; and, 2) Examine the relationships between levels of BP components (e.g., SBP, DBP, MAP, PP) and AD-related phenotypes (e.g., neuropsychological score, age at onset) comparing ABPM vs. conventional BP, in mid- and late-life in a Hispanic population. In Aim 2, we will investigate how BP measures and dipping BP patterns at the first evaluation, and changes in BP measures over time are related to subsequent cognitive performance to better understand the clinical course of AD from a healthy state to mild cognitive impairment to AD. We will first perform the analysis using conventional BP, which has an average of 8.2 evaluations, and then will re-evaluate the relationships using ABPM to verify significant relationships from the analysis of conventional BP. To accomplish these goals, we will also leverage an expert multidisciplinary team with extensive experience in population science, neuroepidemiology, cardiovascular health, geriatrics, database development, and modern statistical techniques for the analysis of longitudinal data, who have ongoing experience working with Hispanic populations. Our findings will improve understanding of the long- term influence of BP traits during pre-clinical stages of dementia on later development of AD, and inform clinical trials to facilitate development of evidence-based strategies to improve prevention, early diagnosis, treatment, and outcomes, especially for Hispanics. Equally important, we will have built a valuable resource that will extend the current longitudinal studies on Hispanics and AD when the currently study is completed. !

Further information available at:

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