Hypertension

EDITORIAL

Could the Hispanic Population Benefit More of Intensive Blood Pressure Control to Reduce the Occurrence of Dementia?

Daniela Carnevale

Dementia collectively refers to a multitude of clinical conditions leading to a relentless progression of cognitive ability decline. Typically associated with aging, dementia affects ≈50 million people worldwide, and numbers constantly rise.

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Although it is becoming increasingly clear that Alzheimer disease is only one of various causes of dementia, people are reluctant to recognize that there might exist, and sometimes coexist, several of types of dementia. Usually, a significant proportion of clinically diagnosed dementias is reported as Alzheimer disease. However, at the neuropathological assessment, more than half of the cases present not only amyloid plaques and neurofibrillary tangles but also vascular lesions,[1] suggesting that most of patients have a mixed pathology (Figure [A]). Hence, besides age, cardiovascular risk factors emerge as key contributors of dementia onset and progression, with hypertension accounting for the most impacting one.

The SPRINT (Systolic Blood Pressure Intervention Trial) MIND (Memory and Cognition in Decreased Hypertension) substudy was designed to test the effect of an intensive systolic blood pressure (BP)–lowering strategy on mild cognitive impairment (MCI) and probable dementia. Results showed a significantly reduced incidence in the combined rate of MCI/probable dementia in the intensive lowering group compared with the standard treatment group. Yet, no significant reduction in the overall rate of dementia was observed, suggesting that additional factors should be considered.[2]

Racial and ethnic influences contribute to a further level of risk in the occurrence of dementia.[3] Investigating the factors underlying ethnoracial disparities is a demanding priority to appropriately target interventional strategies, especially those addressed to modifiable risk factors. A study published in 2019 performed a neuropathological diagnosis of deceased participants with dementia, evidencing that demented Hispanics more likely present vascular lesions than their White and African American counterparts[4] (Figure [B]).

In the current issue, de Havenon et al[5] propose an important observation that complements this body of evidence. By taking the advantage of the SPRINT MIND study, the authors performed a post hoc analysis to test the hypothesis that the Hispanic population would be more susceptible to BP-induced risk of dementia/MCI. The authors report that the rate of dementia/MCI incidence was significantly more elevated in Hispanic (14.0%) than in non-Hispanic subjects (9.7%). More interestingly, when they stratified the population by Hispanic ethnicity, it emerged that for every 10-mm Hg increase in systolic BP, the hazard ratio of developing dementia/MCI was 1.27, meaning that Hispanic patients have a risk of 27% more than the non-Hispanics of losing cognitive abilities.

This report provides important data, yet many questions remain unsolved. A limitation of the study derives from the anticipated interruption of the SPRINT overall trial because of benefit for its primary outcome. The consequent limited follow-up analysis might be particularly relevant for outcomes related to cognitive impairment and brain damage, which usually take longer time to manifest. Second, there was no ascertainment of neuropathological signs of Alzheimer disease or other clinical categorization

Correspondence to: Daniela Carnevale, Department of Molecular Medicine, Sapienza University of Rome, Research Unit of Neuro and Cardiovascular Pathophysiology, IRCCS Neuromed, Viale dell'Elettronica, 86077 Pozzilli, Italy. Email daniela.carnevale@uniroma1.it
For Sources of Funding and Disclosures, see page 1668.

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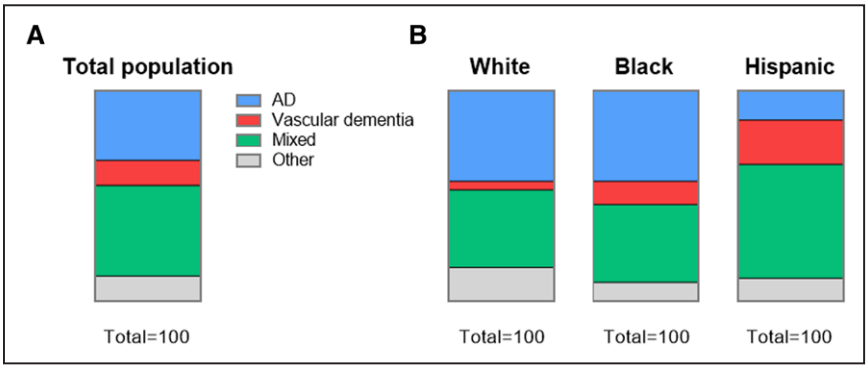

Figure. Ethnoracial differences in dementia: contribution of the mixed pathology to the total cases.
A, Bar graph vertical slices representation of the proportion of mixed Alzheimer disease (AD)/vascular pathology in the total population of patients with dementia. **B**, Representation of vertical slices when patients are grouped by ethnoracial characteristics. The green bar clearly shows how the proportion of individuals with mixed pathologies increases in the Hispanic group vs non-Hispanic White and Black decedents with dementia. Adapted from Filshtein et al[4].

of dementia subtypes. However, strengths of the study include the randomized design, the multisite enrollment, and the high number of subjects studied (>8000).

The take-home message that the authors bring to light is that, since hypertension is a modifiable risk factor, a systolic BP <120 mm Hg may be desirable for preserving cognitive health of Hispanics that, unlike some other populations, can do more to prevent dementia or, at least, counteract its progression. In terms of underlying mechanisms, this observation is particularly intriguing. In fact, while it is conceivable that ethnic minorities have a different access to adequate diagnosis and care to reduce the incidence of dementia, the data here proposed by de Havenon et al highlight that, with equal BP control, Hispanics are at higher risk of developing dementia. Hence, it is conceivable that factors other than social inequalities might determine a different susceptibility to hypertension-induced brain injury. Since racial and ethnic classifications are usually defined categories, which do not directly reflect genetic populations, it becomes even more complex unraveling the causes of the reported differences.

Worth mentioning, another study, the NOMAS (Northern Manhattan Community of New York City), examined ethnoracial disparities in the prevalence of MCI/dementia.[3] Interestingly, while data similarly indicate that Hispanics were more likely to develop dementia/MCI at the follow-up visit, this disparity resulted independent of vascular risk factors like hypertension. Earlier, the multisite prospective cohort HCHS (Hispanic Community Health Study)/SOL (Study of Latinos) showed that higher systolic BP was consistently associated with lower cognitive function.[6]

Taken together, these observations advocate the design of specific studies addressing the relationship established among BP, ethnicity, and brain health. On this notice, well-designed prospective brain imaging studies can help clarify disparities in the effects of midlife exposure to vascular risk factors and capture early preclinical signs of ensuing dementia.[7] The article by de Havenon et al suggests that this tight control might be particularly important for the Hispanic population, which could benefit more of intensive BP-lowering strategies. Increasing evidence hints that some antihypertensive drugs may be effective in reducing risk of dementia, beyond their effect on BP control.[8] While the underlying mechanisms are unknown, this observation warrants to consider also the different therapeutic strategies that may vary across races/ethnicities.

ARTICLE INFORMATION

Affiliations

Department of Molecular Medicine, Sapienza University of Rome, Italy. Department of Angiocardioneurology and Translational Medicine, Research Unit of Neuro and Cardiovascular Pathophysiology, IRCCS Neuromed, Pozzilli, Italy.

Sources of Funding

This work has been supported by Ricerca Corrente granting program of the Italian Ministry of Health to D. Carnevale.

Disclosures

None.

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