

ORAL PRESENTATIONS

Update on diverse vascular cognitive impairment (VCID)

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Background

As the US population becomes increasingly older and more diverse, the number of Americans with dementia is expected to rise substantially, particularly the number of those with concomitant vascular disease. Moreover, the impact of vascular disease on dementia risk may be exacerbated in African Americans and Hispanics, who are at greater risk for vascular disease and for whom vascular disease may play a larger role in clinical dementia. As public health awareness of dementia increases, it is becoming common to see individuals presenting for clinical assessment with minor cognitive complaints. Neuroimaging studies of these individuals frequently identify “incidental” white matter hyperintensities (WMH), usually ascribed to “microvascular disease” by radiologists, raising concerns in patients about their brain health and future risk for dementia.

Methods

To date, however, we are not aware of any studies designed to examine the baseline and future impact of white matter (WM) injury in the clinical setting, particularly among diverse populations where age-related WMH volumes are known to be higher¹ or comprehensively examined the impact of individual and combined magnetic resonance imaging (MRI) measures of white matter injury on cognitive performance among a diverse, non-demented, stroke-free population with cognitive complaints over an extended period of observation. For this presentation, I summarized the available evidence of the impact of WMH

and cognition and reviewed the design of a new study to prospectively assess this outcome in a diverse population and develop a risk factor profile to assist in the diagnosis of those at risk for dementia.

Results

There is substantial evidence that WMH are common, increase in amount and prevalence with age,² impact cognition and dementia,³ and are a measure of vascular brain injury. The significance of studying WM injury is buoyed by the fact that dementia risk scales emphasize the role of vascular risk in dementia prediction⁴ and that institution of effective treatment could lessen the burden of dementia on population.⁵ Yet, a complete understanding of WMH as markers of vascular brain injury contributing to cognitive complaints and possibly vascular cognitive impairment (VCI) requires a comprehensive determination of the full spectrum of WM injury associated with vascular risk, potential mechanisms of WMH formation and progression, ethnorracial, other genetic influences and how WMH interact with neurodegenerative pathologies, in particular Alzheimer’s disease (AD).

Evidence of the importance of “asymptomatic” vascular brain injury on present cognition and future cognitive decline led to the design of a new multi-site study of diverse individuals with cognitive complaints and WMH, that aims to develop a predictive risk factor score that can be widely used in future treatment trials called diverse VCID. Diverse VCID is a multi-site study of 2250 individuals of non-Hispanic Whites, Hispanic/Latinos, and Black African Americans who will be followed for approximately 3 years to deliver a clinical risk score that predicts dementia based on neuroimaging, plasma biomarkers, genetic and clinical data.

Conclusions

Vascular diseases are now recognized to be a major contributor to cognitive impairment and dementia disproportionately affecting individuals from diverse back-

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grounds. Diverse VCID is designed to address this critical issue and to facilitate future treatment studies of vascular cognitive impairment.

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