

The impact of non-amyloid processes on cognitive aging

<https://neurodegenerationresearch.eu/survey/the-impact-of-non-amyloid-processes-on-cognitive-aging/>

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USA

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The impact of non-amyloid processes on cognitive aging

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3

The project/programme is most relevant to:

Alzheimer's disease & other dementias

Keywords

Acquired Cognitive Impairment... Aging... Alzheimer's Disease... Alzheimer's Disease Related Dementias (ADRD)... Alzheimer's Disease including Alzheimer's Disease Related Dementias (AD/ADRD)... Behavioral and Social Science... Brain Disorders... Cerebrovascular... Clinical Research... Clinical Research - Extramural... Dementia... Diagnostic Radiology... Minority Health for IC Use... Neurodegenerative... Neurosciences... Prevention... Vascular Cognitive Impairment/Dementia

Research Abstract

DESCRIPTION (provided by applicant): Advancing age is associated with changes in brain structure and widely varying trajectories of cognitive performance. At least some of these differences are attributable to Alzheimer's disease (AD) and a major effort is underway to delineate the effects of brain amyloid on age related cognitive change and incident dementia. However, approximately 75 percent of cognitively normal individuals aged 70-79 do not have significant brain amyloid retention. These data suggest that factors other than amyloidosis are associated with declining cognitive performance amongst older individuals. Epidemiological studies repeatedly show that cerebrovascular disease (CVD) is extremely common and associated with decreased cognitive performance as well as incident MCI and dementia, independent of AD pathology. This is particularly true for African American and Hispanic communities where CVD is more prevalent. Evidence for CVD-related cognitive change has led to the hypothesis that the population burden of age-related cognitive decline may be considerably lessened through prevention and treatment of vascular risk factors. However, this hypothesis has been difficult to assess. Both Alzheimer's and CVD pathologies commonly co-occur in the brains of demented individuals making the independent effects of each pathology on cognitive decline difficult to discern. Amyloid imaging, however, allows for the measure of at least one component of AD pathology thereby creating the opportunity to assess cognitive trajectories, brain differences and risk factors for cognitive decline amongst individuals free of extensive amyloidosis. The premise of this study is that structural brain changes, ranging from infarction to WMH, loss of white matter integrity and brain atrophy are extremely common with aging. Further, these changes are associated with cognitive decline and increased risk for dementia. Therefore, it is critically important to identify the extent and consequences of brain injury in the absence of extensive amyloid. To accomplish this goal, we will characterize non-amyloid related changes in brain structure and cognitive trajectories in a diverse group of older individuals. In so doing, we will advance understanding of the impact of vascular factors on brain structure and cognition that will provide new insights into the course of cognitive aging and susceptibility to future cognitive impairment in a community based, ethnically and racially diverse cohort.

Lay Summary

PUBLIC HEALTH RELEVANCE: Advancing age is associated with changes in brain structure and widely varying trajectories of cognitive performance including transition to dementia. Data suggest that factors other than extensive amyloidosis such as cerebrovascular disease are associated with declining cognitive performance amongst the majority of older individuals. The premise of this study is that structural brain changes are extremely common with aging in the absence of extensive amyloidosis. Further, these changes are associated with cognitive decline and increased risk for dementia. Therefore, it is critically important to identify the extent and consequences of brain injury in the absence of extensive amyloid.

Further information available at:

Types:

Investments > €500k

Member States:

United States of America

Diseases:

Alzheimer's disease & other dementias

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