Small vessel disease biomarkers in a longitudinally-followed stroke-belt cohort

https://neurodegenerationresearch.eu/survey/small-vessel-disease-biomarkers-in-a-longitudinally-followed-stroke-belt-cohort/

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Country

USA

Title of project or programme

Small vessel disease biomarkers in a longitudinally-followed stroke-belt cohort

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NIH (NIA)

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30/09/2016

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2

The project/programme is most relevant to:

Alzheimer's disease & other dementias

Keywords

vascular contributions, Microvascular Dysfunction, Dementia, Impaired cognition, stroke

Research Abstract

Abstract Vascular contributions to cognitive impairment and dementia (VCID) describes cognitive impairment resulting from cerebrovascular disease or dysfunction. VCID is a frequent

co-morbidity with Alzheimer’s disease (AD), as well as a single dementia-causing entity. The most common vasculopathy associated with cognitive impairment is cerebral small vessel disease (SVD). It is highly likely that SVD significantly contributes to the clinical manifestation of dementia, and therefore is a viable target for disease-modifying therapies, whether alone or in combination with AD-targeting therapies. One major obstacle for therapeutic development is the lack of biomarkers that are predictive of the presence and course of SVD-VCID. In this proposal we present candidate biomarkers for SV-VCID that will contribute to the consortium. We have identified MRI imaging modalities of 3D FLAIR, ASL, and DTI as our imaging candidate biomarkers. We have also identified IL-12 p70, TNF?, PIGF and VEGFD as our candidate fluid biomarkers that discriminate SVD well in the subset of our cohort that we have analyzed. In this application we have a plan for developing our candidate biomarkers and validating them through the UH2 phase an individual research group, and also through the UH3 part as a member of the consortium. In addition, we bring significant strengths that will help synergize and move the consortium as a whole forward in our collective goal of developing biomarkers that are ready for large scale clinical trials and FDA qualification in years 6-7 of the consortium. These strengths include a well characterized, longitudinal cohort supported through our ADC and other NIH initiatives, our long history of active participation in consortia providing the experience and infrastructure needed to ensure success in this UH2/UH3 mechanism, our history of data sharing, resource sharing including samples, recruitment of research participants for longitudinal studies, and our foundation in basic and translational science.

Lay Summary

Project Narrative Vascular cognitive impairment and dementia (VCID) is second only to Alzheimer’s disease (AD) as a leading cause of dementia in Western populations. In addition, VCID is a frequent co-morbidity with AD, complicating the diagnosis and treatment of AD for an important proportion of patients. One major obstacle for the advancement of VCID studies is accurate diagnosis at a preclinical state or at a time early in the disease process to allow for effective intervention. We have identified candidate biomarkers that we propose to validate as part of a consortium to establish biomarkers for VCID.

Further information available at:

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