

Targeting Lewy Body Specific Pathology Using Biomarkers

<https://neurodegenerationresearch.eu/survey/targeting-lewy-body-specific-pathology-using-biomarkers-2/>

Principal Investigators

MARDER, KAREN S

Institution

COLUMBIA UNIVERSITY HEALTH SCIENCES

Contact information of lead PI

Country

USA

Title of project or programme

Targeting Lewy Body Specific Pathology Using Biomarkers

Source of funding information

NIH (NINDS)

Total sum awarded (Euro)

€ 4,147,464.22

Start date of award

30/09/2016

Total duration of award in years

5

The project/programme is most relevant to:

Parkinson's disease & PD-related disorders|Alzheimer's disease & other dementias

Keywords

Lewy Body Dementia, Lewy Bodies, Alzheimer's Disease, Pathology, Biological Markers

Research Abstract

Project Summary/Abstract Lewy body disorders include Parkinson's Disease Dementia (PDD) and Dementia with Lewy Bodies (DLB). DLB is particularly problematic since it is often not appreciated until late stages, and often is admixed pathologically with concomitant Alzheimer's

disease (AD). Clinical care and the design of symptomatic and disease modifying trials for DLB would benefit from earlier diagnosis and reduced pathological heterogeneity. Thus, it is important to identify the extent to which Lewy Body versus AD pathology contributes to the phenotype and underlying biology of DLB, and to discover new molecular targets that specific to DLB. Clinically, we are uniquely poised to recruit a multiethnic cohort of DLB patients derived from both the local /metropolitan community, the Alzheimer's Disease Research Center [ADRC], and the broader practice settings of the Aging and Dementia, Movement Disorders, and primary care programs at Columbia University. We will capture the continuum of cognitive impairment and extrapyramidal signs that exist in DLB. In Aim 1, we will identify and recruit an ethnically diverse (White, Hispanic, African American) cohort of 40 DLB patients per year for years 1-4, who will be followed semi-annually. We will administer the NINDS Parkinson's Disease Biomarkers Program (PDBP) battery, the NIA National Alzheimer Coordinating Center (NACC) UDS3 with the new DLB module. In Aim 2, we will perform RNA gene expression and epigenetic (DNA methylation) profiling on dissected brain tissue from our Columbia University brain bank including cases with pathologically defined Lewy Body Disease with AD pathology (DLB/AD) and without significant AD (DLB), cases with AD, and controls to identify Lewy body specific differences primarily by comparing DLB/AD and AD. In Aim 3, we will use expression data from Aim 2, to develop biomarker assays in blood and CSF, including at RNA and protein levels. This aim will first utilize plasma from cases who have autopsy proven diagnosis, and will then be expanded to samples with clinical diagnoses.

Lay Summary

Narrative/Relevance This project is designed to discover biomarkers specific for Dementia with Lewy Bodies (DLB). We will recruit a diverse cohort with DLB for longitudinal study as part of a national effort. We will use our extensive brain bank resources to analyze Lewy body specific gene expression to develop biomarkers for early diagnosis and identification of therapeutic targets.

Further information available at:

Types:

Investments > €500k

Member States:

United States of America

Diseases:

Alzheimer's disease & other dementias, Parkinson's disease & PD-related disorders

Years:

2016

Database Categories:

N/A

Database Tags:

N/A