INVESTIGATIONS OF DEMENTIA IN PARKINSON DISEASE

https://neurodegenerationresearch.eu/survey/investigations-of-dementia-in-parkinson-disease-2/

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Country

USA

Title of project or programme

INVESTIGATIONS OF DEMENTIA IN PARKINSON DISEASE

Source of funding information

NIH (NINDS)

Total sum awarded (Euro)

€ 3,490,500.00

Start date of award

01/05/2011

Total duration of award in years

5

The project/programme is most relevant to:

Parkinson's disease & PD-related disorders

Keywords

Parkinson's Dementia, Cerebrospinal Fluid, Parkinson Disease, Cerebrospinal Fluid Proteins, Brain Pathology

Research Abstract
? DESCRIPTION (provided by applicant): Parkinson disease (PD) produces progressive motor and cognitive impairments leading to dementia in ~75% of patients after 10 years. Development

of therapies to slow PD progression requires validated biomarkers of pathologic processes and that predict progression. Such biomarkers could reflect regional pathophysiology and disruption of local or widely distributed networks that cause behavioral deficits. This project focuses on cross- sectional and longitudinal relationships among proteinopathy, cholinergic deficits, disruption of functional connectivity networks and behavior. We will build upon our findings in a single site longitudinal cohort of 270 people with PD and controls to extend and expand a multimodal approach to determine the time course of biomarker changes that correspond with and predict cognitive decline in PD. We have the potential to provide in vivo neuroimaging and CSF biomarkers of pathology and pathophysiology that could independently, or in combination, predict clinical manifestations in PD. We will combine PiB (an A? amyloid imaging agent) and VAT (a vesicular cholinergic transport ligand) PET, CSF protein levels and resting state functional connectivity analyses (rs-fcMRI using advanced analysis methods) measures of pathophysiology with sophisticated behavioral measures focusing on cognition and postmortem brain analyses including quantification of pathologic proteins. We will determine the relationships between PET biomarkers and CSF proteinopathy, and compare these to clinical manifestations. Rs-fcMRI, as a measure of brain function, will link brain pathology and neurochemistry with the associated clinical manifestations. In this manner, we will develop a strong mechanistic understanding of changes in these neuroimaging and CSF biomarkers and how this relates to cognitive decline and dementia in PD. This project holds great promise for identifying pathophysiological biomarkers for prediction of PD progression, patient stratification for trials and evaluation of new treatments.

Lay Summary
PUBLIC HEALTH RELEVANCE: Parkinson disease (PD) is a progressive neurologic degenerative disease affecting nearly one million people in North America. These people have very high risk for development of dementia that adds substantial morbidity, mortality and economic burden to patients, families and society. This multimodal study will establish the time course of changes in a variety of biomarkers that is critical to design studies to slow PD progression and identify targets of engagement for new therapies.

Further information available at:

Types:
Investments > €500k

Member States:
United States of America

Diseases:
Parkinson's disease & PD-related disorders

Years:
2016

Database Categories:
N/A

Database Tags:
N/A