Assessment of hyperphosphorylated tau PET binding in primary progressive aphasia

https://neurodegenerationresearch.eu/survey/assessment-of-hyperphosphorylated-tau-pet-binding-in-primary-progressive-aphasia/

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Country

USA

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Assessment of hyperphosphorylated tau PET binding in primary progressive aphasia

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15/05/2016

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2

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Primary Progressive Aphasia, hyperphosphorylated tau, tau Proteins, Positron-Emission Tomography, tau mutation

Research Abstract

? DESCRIPTION (provided by applicant): The primary goal of this R21 is to generate data on the behavior of a new type of PET scan, tau-PET, in subjects diagnosed with primary progressive aphasia (PPA) and the three well recognized variants of PPA: agrammatic, semantic and logopenic PPA. Pathological studies have identified an abnormal protein, tau, as being an important player in the neurodegenerative process. Tau is thought to be one of the

leading causes of neurodegenerative diseases. It was not possible however, until recently, to determine whether tau deposition was present in the brain during life. An imaging ligand AV-1451 (formerly 18F-T807) was recently developed, which specifically binds to tau in human brains. No studies have investigated tau binding in PPA using neuroimaging. Over the 2 years of the R21 we will recruit subjects with all three PPA variants and compare AV-1451 binding in PPA and PPA variants, to AV-1451 binding in normal control subjects to get an estimate of what proportion of PPA subjects and PPA variants do test positive for tau with AV-1451. We will also assess whether there is any evidence that binding patterns for tau differs across the three PPA variants. In our final aim we will use the unbiased technique of cluster analysis to determine whether there is any support for clinico-anatomically defined PPA variants based on binding patterns of tau with AV-1451, independent of the clinically defined PPA variants. These are important steps that are necessary to move the field forward given that tau-PET is a new technique with little existing data to draw upon for hypothesis testing. Therefore, this R21 will b important to generate hypotheses for a future R01.The proposal is novel and feasible. To accomplish our aims, we will perform detailed neurological, speech and language, and neuropsychological testing, as well as the new AV-1451 PET scan and volumetric head MRI scanning. The Principal Investigator of this grant, Dr. Keith Josephs is a world renowned neurodegenerative specialist who has assembled a team of world renowned experts in speech and language (Dr. Joseph Duffy), neuroimaging (Drs. Clifford Jack, Val Lowe, Jennifer Whitwell) and neuropsychology (Dr. Mary Machulda) to collectively work to address the aims. The team will have state of the art facilities and equipment in order to do so.

Further information available at:

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