

Evaluation of microglial activation in Alzheimer's disease and mild cognitive impairment subjects using a novel TSPO marker, GE180

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Name of Fellow

Valeria Calsolaro

Institution

Funder

Alzheimer's Research UK

Contact information of fellow

Country

United Kingdom

Title of project/programme

Evaluation of microglial activation in Alzheimer's disease and mild cognitive impairment subjects using a novel TSPO marker, GE180

Source of funding information

Alzheimer's Research UK

Total sum awarded (Euro)

€ 59,511

Start date of award

01/06/14

Total duration of award in years

2.0

The project/programme is most relevant to:

Alzheimer's disease & other dementias

Keywords

Research Abstract

Mild cognitive impairment (MCI) is a transitional stage between normal awareness and Alzheimer's disease (AD). Brain inflammation has been proposed to be a link between the build-up of amyloid (an abnormal protein in the brains of patients with AD), damage to nerve cells and formation of "tangles" (clumps of proteins). With PET scanning we have demonstrated that AD subjects have significantly increased amyloid build-up and brain inflammation (demonstrated by increased activity of microglial cells). [18F]GE180 is a PET imaging agent that has been developed for the assessment of brain inflammation. The action of [18F]GE180 is based on its ability to bind to the translocator protein (TSPO). TSPO levels in the normal central nervous system are very low, but increase dramatically in microglial cells in response to brain damage and inflammation. Here we would like to evaluate [18F]GE180 in ten AD subjects, ten MCI subjects and ten healthy volunteers. This will be compared with the levels of amyloid imaged with [18F]flutemetamol, allowing us to better define the role of inflammation in AD and MCI subjects and to determine whether [18F]GE180 gives a suitable signal to assess the role of inflammation in disease progression and to evaluate the effect of anti-microglial agents.

Types:

Fellowships

Member States:

United Kingdom

Diseases:

Alzheimer's disease & other dementias

Years:

2016

Database Categories:

N/A

Database Tags:

N/A