The role of TREM2 in neurodegeneration

https://neurodegenerationresearch.eu/survey/the-role-of-trem2-in-neurodegeneration/

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Title of project or programme

The role of TREM2 in neurodegeneration

Source of funding information

Alzheimer's Research UK

Total sum awarded (Euro)

€ 124,986

Start date of award

30/09/2014

Total duration of award in years

3

Keywords
Research Abstract

Alzheimer’s disease (AD) is the most common cause of dementia. A major known risk factor in late-onset disease is having the ApoE4 gene. Recently another genetic risk factor has been identified called TREM2 and variations in this gene cause susceptibility to late-onset AD with similar odds to the ApoE4 gene.

The TREM2 gene encodes a receptor protein on the surface of a subset of brain cells, called microglia. These cells form an important part of the immune response within the brain. TREM2 triggers immune responses when associated with other proteins and is also involved in clearing away damaged tissue, therefore reducing the amount of inflammation. We suggest that the neurodegeneration in TREM2-associated AD is driven by a chronic inflammatory process with dysfunction in microglial cells. We propose to investigate whether carrying a TREM2 mutation

alters AD brain tissue by examining the location and distribution of the TREM2 protein in brain; determine how the TREM2 mutations alter inflammatory cell function and investigate the 3D relationship between the pathological proteins found in AD and the microglial architecture. How TREM2 is involved in neurodegeneration remains elusive unravelling the mechanism will lead to a greater potential for therapeutic intervention.

Further information available at:

Types:
Investments < €500k

Member States:
United Kingdom

Diseases:
N/A

Years:
2016

Database Categories:
N/A

Database Tags:
N/A