Small vessel disease in the brain.Hypotension and hypertension as causes of cognitive decline and dementia. Mechanisms and diagnostics for vascular dysregulation and identification of genetic markers.

https://neurodegenerationresearch.eu/survey/small-vessel-disease-in-the-brain-hypotension-and-hypertension-as-causes-of-cognitive-decline-and-dementia-mechanisms-and-diagnostics-for-vascular-dysregulation-and-identification-of-genetic-markers/

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Title of project or programme

Small vessel disease in the brain.Hypotension and hypertension as causes of cognitive decline and dementia. Mechanisms and diagnostics for vascular dysregulation and identification of genetic markers.

Source of funding information

Swedish Research Council

Total sum awarded (Euro)

€ 1,321,436

Start date of award

01.01.2013

Total duration of award in years

4

The project/programme is most relevant to:

Alzheimer's disease & other dementias

Keywords

Research Abstract

Vascular dementia accounts for one third of dementia but few studies have focused on small vessel disease as the cause of cognitive decline and dementia.Vascular mechanisms are unclear and almost no gene markers related to cerebral autoregulation have been identified.Mechanisms for vascular dysregulation,both hypotension and hypertension(HT) and associations to cognitive decline and dementia will be explored in three longitudinal cohort studies on the elder general population,GÅS-SNAC (n=2931),Epihealth (n=10000) and 1914-års män(n=500).Perfusion MRI are used in a subset to improve diagnostics to detect early signs of hypoperfusion in prefrontal areas,often affected by small vessel disease and related to executive dysfunction.Cerebral autoregulation is followed through transcranial doppler of cerebral media artery during tilting combined with 24 h ECG/BP and related to cognitive function assessed by 14 different tests.Genome wide association analyses are performed to identify genotypes for hypotension and impaired cerebral autoregulation and tested against executive function test in the Epihealth and 12-year follow up from GÅS-SNAC.Few studies have been done on HT among elder based on present recommendations (140/90 mm Hg) despite that half of elder >80yrs are on antiHTtreatment.Knowledge gap on specific mechanisms for dysregulation of blood pressure (BP) among elder and their higher susceptibility for low BP and risk factors for cognitive decline calls for further studies.

Lay Summary

Further information available at:

Types:
Investments > €500k

Member States:
Sweden

Diseases:
Alzheimer's disease & other dementias

Years:
2016

Database Categories:
N/A

Database Tags:
N/A