

The Heart-Brain Connection:the mssing link in the pathophysiology of vascular cognitive impairment

<https://neurodegenerationresearch.eu/survey/the-heart-brain-connectionthe-mssing-link-in-the-pathophysiology-of-vascular-cognitive-impairment/>

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Contact information of lead PI Country

Netherlands

Title of project or programme

The Heart-Brain Connection:the mssing link in the pathophysiology of vascular cognitive impairment

Source of funding information

CVON/ hartstichting

Total sum awarded (Euro)

€ 435,333

Start date of award

01/12/2013

Total duration of award in years

5.0

The project/programme is most relevant to:

Alzheimer's disease & other dementias

Keywords

Research Abstract

While both cardiac dysfunction and progressive loss of cognitive functioning are prominent features of an aging population, surprisingly few studies have addressed the link between the

function of the heart and brain. This is probably due to the monodisciplinary approach to these problems by cardiologists, neurologists and geriatricians. Recent data indicate that autoregulation of cerebral flow cannot protect the brain from hypoperfusion when cardiac output is reduced or atherosclerosis is prominent. This suggests a close link between cardiac function and large vessel atherosclerosis on the one hand and brain perfusion and cognitive functioning on the other. In the current research proposal we will test the hypothesis that the hemodynamic status of both the heart and the brain is an important and potentially reversible, but underestimated cause of vascular cognitive impairment (VCI) that may offer promising opportunities for treatment. In a truly multidisciplinary approach we will address the following questions. 1) To what extent do hemodynamic changes contribute to VCI? 2) What are the mechanisms involved? 3) Does improvement of the hemodynamic status lead to improvement of cognitive dysfunction? To this end we will perform new clinical studies in elderly patients with either clinically manifest VCI, carotid occlusive disease or cardiac dysfunction and evaluate their cardiac and large vascular function, atherosclerotic load and cerebral perfusion with the same MRI based protocol and thoroughly test their cognitive dysfunction. We will also analyse epidemiological data from the Rotterdam study and use animal studies to dissect the mechanisms involved and to reveal novel leads for interventions.

Lay Summary

Further information available at:

Types:

Investments > €500k

Member States:

Netherlands

Diseases:

Alzheimer's disease & other dementias

Years:

2016

Database Categories:

N/A

Database Tags:

N/A