

Microvascular function and brain networks: Keys to understanding the vascular burden in dementia

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Institution

Funder

ZonMw

Contact information of fellow

Country

The Netherlands

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Microvascular function and brain networks: Keys to understanding the vascular burden in dementia

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ZonMw

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Alzheimer's disease & other dementias

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Research Abstract

My research interest is on vascular cognitive impairment(VCI); cognitive dysfunction due to vascular disease.

My ambition is to increase insight in underlying disease processes, improve detection of the vascular burden in dementia –in research and clinical practice– and optimize treatment. Intensive collaboration with national and international partners is a cornerstone of my work.

The role of microvascular brain lesions in VCI has been a particular focus. In my Vidi program I used the unique properties of 7T MRI to zoom in on these lesions. We have been able, for the first time, to detect cerebral microinfarcts in vivo. Within 2 years we have translated microinfarct-detection to 3TMRI. This now enables widespread dissemination of the technique and we are currently studying causes and consequences of these lesions in international collaborations. Our studies on VCI involve several other innovative markers of microvascular abnormalities and parenchymal damage on 3&7T MRI. The importance of this work is receiving international recognition.

Cognition and dementia in people with type 2 diabetes(T2DM) is another key topic. My group has characterized the severity and trajectories of stages of cognitive dysfunction in T2DM and established underlying structural brain changes with MRI. In the context of my Vidi program we have established a risk score that allows individualized prediction of 10-years dementia risk in patients with T2DM. We also validated screening tools for DM-related cognitive impairment in primary care and I am PI in two RCTs on prevention of cognitive decline in T2DM, one of which employs our risk score.

Types:

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