

Positron emission tomography to image cerebral neuroinflammation in ischaemic stroke: a pilot study

Eszter Visi,¹ Rainer Hinz,¹ Martin Punter,²
Arshad Majid,³ Alexander Gerhard^{1,4,5}
and Karl Herholz^{1*}

¹Division of Neuroscience and Experimental Psychology, Wolfson Molecular Imaging Centre, University of Manchester, Manchester, UK

²Greater Manchester Neurosciences Centre, Salford Royal NHS Foundation Trust, Salford, UK

³Sheffield Institute for Translational Neuroscience (SITraN), University of Sheffield, Sheffield, UK

⁴Department of Geriatric Medicine, University Hospital Essen, Essen, Germany

⁵Department of Nuclear Medicine, University Hospital Essen, Essen, Germany

*Corresponding author karl.herholz@manchester.ac.uk

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Plain English summary

PET to image cerebral neuroinflammation in ischaemic stroke

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Plain English summary

Following a stroke, brain inflammation may occur as a reaction. It is unknown whether or not this reaction contributes to healing and recovery after stroke or whether or not it can cause further damage that could potentially be treated by drugs directed against inflammation. Standard investigation methods cannot determine whether or not there is brain inflammation after stroke. Therefore, a specific brain scanning method was employed (i.e. positron emission tomography) to investigate this. Positron emission tomography scanning requires the intravenous injection of radioactive indicators.

In the first phase of our study, we compared two such indicators. One of them had already been used in stroke patients previously, but is not available for routine use in NHS clinics. The other was a recently developed new indicator, called flutriciclamide otherwise known as [¹⁸F]-GE180, which could potentially be supplied to hospitals. We found that both indicators were well tolerated and provided similar information. However, the new indicator showed some problems that would preclude its diagnostic use in patients with stroke. It did not enter the brain sufficiently well enough and the results depended on confounding factors. Confounders were a common genetic variant in people that is not related to stroke, and changes in blood vessels that can occur after stroke but are not directly related to inflammation. We therefore closed the study after this pilot phase and could not check whether or not there is a link between brain inflammation and clinical recovery.

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This report

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