

Could common blood pressure drug slow Alzheimer's progression?

A ground-breaking trial that hopes to discover if a drug commonly used to treat high blood pressure could slow down the progression of Alzheimer's disease (AD) will begin shortly.



The multi-centre clinical trial, hosted by North Bristol NHS Trust and led by a group of academics from the University of Bristol, University of Cambridge and Queen's University Belfast, will find out if losartan, a well-tolerated drug for high blood pressure, can complement current treatments for AD. The researchers believe the drug could slow down the progression of AD by improving brain blood flow and altering chemical pathways that cause brain cell damage, brain shrinkage and memory problems in AD.

Alzheimer's disease (AD) is the cause of more than half of the cases of dementia that affects approximately 800,000 people in the UK. It profoundly affects memory and brain function in older individuals. It is a slow progressive disease that can last for a number of years and is heart-breaking, exhausting and often a costly reality for family and health services.

Test subjects

Thanks to funding of nearly £2 million by the Medical Research Council (MRC) and managed by the National Institute for Health Research*, the double blinded placebo-controlled randomised trial, known as RADAR (Reducing pathology in Alzheimer's Disease through Angiotensin taRgeting), will recruit approximately 230 participants from a number of sites across the UK over two years.

The study will use brain imaging at CRICBristol and other locations around the country to measure if losartan helps to reduce brain shrinkage that researchers know is strongly linked with reduced memory function whilst also measuring if the drug can help improve people's memory and quality of life.

Dr Pat Kehoe, Reader in Translational Dementia Research and Joint Group Head of the Dementia Research Group in the School of Clinical Sciences, who will lead the trial, said: "With an ageing population, AD health care provision needs will

significantly rise. At the moment, existing AD treatments only temporarily treat specific imbalances in the brain but as yet there is no cure for AD.

"The trial, which involves leading dementia research centres in at least ten cities in the UK, including those across England, Scotland and Wales, should provide the first real evidence of losartan's potential benefit in AD."

Drug research

The research team want to study losartan because it is well known from previous human and animal studies that reduced brain blood flow is a very common and early feature in AD and contributes to memory failure.

Losartan, and other related drugs working in a similar way, have been found to block a small naturally occurring chemical (angiotensin II) which improved memory problems in mice designed to have Alzheimer's features and in people given chemicals to temporarily affect their memories. Losartan is thought to stop angiotensin II from preventing the release of vital memory chemicals in the brain.

Researchers recently found that people who have previously taken losartan, or similar drugs, have a lower risk of developing AD compared to other blood pressure drugs. These drugs may also slow the rate of deterioration in patients with Alzheimer's. Some older clinical trials of losartan and related drugs in people with high blood pressure have shown little evidence of a reduced risk of general cognitive decline or dementia in general. However, these studies did not include or specifically identify AD patients and would have had many patients with mainly vascular dementia patients which may not have benefited - the RADAR trial will be the first such study in a trial specifically designed for people with AD.

Dr Kehoe concluded: "Without wishing to get ahead of ourselves, the beauty of this drug, if it is found to work as we expect, is that it is already available and is cheap. People who have high blood pressure could be prescribed this much earlier in life when we know that some of the early changes of AD can occur but currently cannot easily detect because the memory problems haven't yet manifested in people."

Further information

Funding for this study was announced by Health Secretary Jeremy Hunt on 20 December 2012 as part of the Prime Minister's Challenge on Dementia.

The Dementias and Neurodegenerative Diseases Research Network (DeNDRoN) has worked in partnership with researchers on eight of the 21 studies announced by the government to receive funding, including the RADAR clinical trial.

DeNDRoN will work with sites across the UK to actively recruit 230 participants for the RADAR clinical trial over the next two years. Those regions involved are Oxford, Leicester, Reading, Brighton, Exeter, as well as three sites in Scotland and one in Wales.

Recruitment for the clinical trial will begin in August 2013. If members of the public are interested in participating in the study, please email dementia-research@bristol.ac.uk or visit www.dendron.nihr.ac.uk to find out more.

Source: *Bristol University*