

Could hypertension drugs help people with Alzheimer's?

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Within the next 20 years it is expected the number of people with Alzheimer's disease (AD) will double from its current figure of half a million to one million. A new study has looked at whether certain types of drugs used to treat high blood pressure, also called hypertension, might have beneficial effects in reducing the number of new cases of Alzheimer's disease each year.

The team of researchers from the University of Bristol have looked at whether drugs already being used to treat hypertension, particularly ones that specifically reduce the activity of a [biochemical pathway](#), called the renin angiotensin system, might reduce the occurrence of Alzheimer's and another common type of dementia called [vascular dementia](#).

The study, conducted with the support from North Bristol NHS Trust and published online in the *Journal of* [Alzheimer's Disease](#), stems from work by one of the team's members, Dr Patrick Kehoe. Dr Kehoe, who is a Reader in Translational Dementia Research and co-leads the Dementia Research Group at Frenchay Hospital, Bristol, is a leading authority on the possible role of the renin angiotensin system in Alzheimer's.

This pathway is very important in [blood pressure regulation](#) and, for at least a decade, links between hypertension and dementia have been known but poorly understood.

In more recent years it has been shown that certain signals produced by

this pathway contribute to a number of the damaging effects often seen in the brains of people with Alzheimer's. These include memory loss, lowered [blood circulation](#) in the brain, higher levels of [brain inflammation](#) and increased levels of [brain cell death](#) due to reduced oxygen circulation.

Dr Patrick Kehoe said: "Drugs that can prevent Alzheimer's occurring at all, or delaying its onset would have a substantial benefit on the lives of future sufferers, their families, as well as an overstretched [health care system](#).

"Current Alzheimer's drugs treat memory loss by attempting to correct chemical imbalances in the brain but these only work for a limited time. This limited treatment period is because the drugs are unable to stop the underlying mechanisms that cause the disease. Therefore the need to find new ways of stopping Alzheimer's goes on."

Dr Kehoe's research led him to experts in the study of risk factors for disease in large populations and datasets. Professors Richard Martin and Yoav Ben-Shlomo, and researcher Neil Davies in the University's School of Social and Community Medicine, used the General Practice Research Database, which holds anonymised data on approximately ten million people who attend General Practitioner surgeries around the UK. The research team made some very interesting observations in what is one of the largest studies of its kind on dementia in the UK.

The researchers found people over 60 years, who had ever taken one of two different groups of drugs that target the renin angiotensin system in the previous ten years, had a 50 per cent lower risk of developing Alzheimer's with a more modest 25 per cent reduced risk for forms of vascular dementia compared to patients on any other types of hypertension drugs. This suggests that these benefits, if truly causal, are not merely due to a [blood pressure](#) lowering effect and may involve

specific biochemical alterations.

Professor Richard Martin added: "Whilst our findings are interesting, these are not conclusive findings. We now need to do the clinical trials to properly test our observations."

Dr Kehoe and colleagues are now currently in the process of trying to obtain funding to undertake this necessary further research. If found to be successful, these treatments could be relatively quickly entered into Alzheimer's care since these drugs are already used for other conditions and are thought to have reasonably low side effect issues.

More information: Associations of Anti-Hypertensive Treatments with Alzheimer's Disease, Vascular Dementia, and Other Dementias, Neil M. Davies, Patrick G. Kehoe, Yoav Ben-Shlomo, Richard M. Martin. *Journal of Alzheimer's Disease*, published online ahead of print, 4 October 2011.

Provided by University of Bristol

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