

# Common blood pressure drug does not slow down the progression of more advanced Alzheimer's, study finds

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New research led by the University of Bristol, has shown the drug losartan, normally used to treat high blood pressure (hypertension), is not effective in slowing down the progression of Alzheimer's disease (AD)

in people with mild-to-moderate disease after 12 months of treatment. However, the drug could still be of benefit if prescribed for longer and if given to people with very early disease. The findings are from the phase 2 multi-center clinical trial known as RADAR ((Reducing pathology in Alzheimer's Disease through Angiotensin taRgeting)).

The double blinded placebo-controlled randomized trial (where participants and doctors don't know what treatment people are on) investigated whether losartan, compared with a placebo, could reduce brain volume loss, as a measure of [disease](#) progression, in people clinically diagnosed with established AD.

The research, published in *The Lancet Neurology* and NIHR *Efficacy and Mechanism Evaluation*, is the first to evaluate the potential benefit of losartan, an angiotensin receptor blocker, which is a drug commonly used to treat [high blood pressure](#) and heart failure, in clinically diagnosed AD using brain imaging as a primary outcome.

Two-hundred and sixty-one people aged 55 years or older diagnosed with AD, who had not been prescribed similar hypertension drugs, and who had capacity to consent, were recruited from 23 UK National Health Service hospital trusts between 22 July 2014 and 17 May 2018.

The 211 [eligible participants](#) were then randomly allocated with 105 assigned to receive the study drug, 100 mg of losartan, and 106 to the placebo (an identical looking pill with no active medicine) once a day for 12 months. From the 197 (93%) participants who completed the study, primary outcome data were available for 171 (81%) participants.

The trial assessed the rate of whole brain shrinkage (i.e. atrophy) on MRI scan compared between participants on losartan and those on placebo. The researchers also examined differences in memory tests, day-to-day quality of life and in a subgroup of participants, changes in levels

of vascular damage to the brain as measured by MRI.

The study found that 12-months' treatment with losartan in patients with clinically diagnosed and established mild-to-moderate probable Alzheimer's disease did not significantly slow down the progression of AD.

Professor Pat Kehoe, Gestetner Professor of Translational Dementia Research at the University of Bristol, who led the trial, said: "With the current lack of effective treatments for Alzheimer's disease (AD), this is an extremely disappointing result for participants, patients and researchers alike that losartan, although well tolerated, was not effective in reducing the rate of brain atrophy in people with clinically diagnosed AD in the 12 months it was given, especially after so much encouraging evidence to support the need for this trial.

"However, we cannot exclude the possibility, given other findings that are emerging, that losartan, or similar drugs, given to people earlier and for longer in their development of Alzheimer's, such as folk with certain types of mild cognitive impairment, might still be protective.

"It is vitally important we continue to search for effective treatments for AD because with an aging population there will continue to be many people diagnosed with the disease, which will greatly impact on our already overstretched health and social care costs and resources."

The research team are now exploring options to carry out further studies using losartan or other ways of treating the same biochemical deficits [losartan](#) was chosen to address, particularly those that might be possible to target in people with even milder specific impairments that might be indicative of very early signs of developing AD.

The study was funded by an MRC and NIHR partnership created to

support the evaluation of interventions with potential to make a step-change in the promotion of health, treatment of disease and improvement of rehabilitation or long-term care.

**More information:** Patrick Gavin Kehoe et al, Safety and efficacy of losartan for the reduction of brain atrophy in clinically diagnosed Alzheimer's disease (the RADAR trial): a double-blind, randomised, placebo-controlled, phase 2 trial, *The Lancet Neurology* (2021). DOI: [10.1016/S1474-4422\(21\)00263-5](https://doi.org/10.1016/S1474-4422(21)00263-5)

Patrick G Kehoe et al, Losartan to slow the progression of mild-to-moderate Alzheimer's disease through angiotensin targeting: the RADAR RCT, *Efficacy and Mechanism Evaluation* (2021). DOI: [10.3310/eme08190](https://doi.org/10.3310/eme08190)

Provided by University of Bristol

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