

Blood pressure drugs shown to decrease risk of Alzheimer's disease dementia

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A Johns Hopkins-led analysis of data previously gathered on more than 3,000 elderly Americans strongly suggests that taking certain blood pressure medications to control blood pressure may reduce the risk of dementia due to Alzheimer's disease (AD).

In a report published in a recent edition of the journal *Neurology*, a team of researchers found that people over the age of 75 with normal cognition who used diuretics, angiotensin-1 receptor blockers (ARBs) and angiotensin-converting enzyme (ACE) inhibitors showed a reduced risk of AD dementia by at least 50 percent. In addition, diuretics were associated with 50 percent reduced risk in those in the group with mild cognitive impairment.

Beta blockers and [calcium channel blockers](#) did not show a link to reduced risk, the scientists reported.

"Identifying new pharmacological treatments to prevent or delay the onset of AD dementia is critical given the dearth of effective interventions to date," says the author, Sevil Yasar, M.D., Ph.D., assistant professor of medicine in the Department of Geriatric Medicine and Gerontology at the Johns Hopkins University School of Medicine. "Our study was able to replicate previous findings, however, we were also able to show that the beneficial effect of these [blood pressure](#) medications are maybe in addition to [blood pressure control](#), and could help clinicians in selecting an antihypertensive medication based not only on blood pressure control, but also on additional benefits."

Alzheimer's disease is a rapidly increasing clinical and public health issue in the United States' aging population, and the most common cause of intellectual and social decline.

Yasar and her colleagues conducted a "post-hoc" analysis of information gathered originally in the so-called Ginkgo Evaluation of Memory Study (GEMS) study, a six-year effort to determine if use of the herb ginkgo biloba reduced AD risk. That study, a double-blind, randomized, controlled clinical trial of 3,069 adults without dementia, aged between 75 and 96 years, began in 2000 and recruited participants from four U.S. cities: Hagerstown, Md.; Pittsburgh, Pa.; Winston-Salem/Greensboro, N.C.; and Sacramento, Calif.

Yasar said that while the GEMS trial showed no benefit of [ginkgo biloba](#) in reducing incidence of dementia, information was also available among the study participants related to their use of several classes of antihypertensive drugs. Extensive studies suggest that high blood pressure is a major risk factor for dementias including AD, and there had been suggestions that drugs used to control blood pressure conferred a protective effect on the brain in addition to controlling blood pressure.

The question, she said, was which ones were associated with reduced AD dementia risk, and which were not.

Yasar and colleagues looked at 2,248 of the GEMS subjects, of them 351 reported use of a diuretic, 140 use of ARBs, 324 use of ACE inhibitors, 333 use of calcium channel blockers and 457 use of [beta blockers](#). The average age of this group was 78.7 years, and 47 percent were women.

"We were able to confirm previous suggestions of a protective effect of some of these medicines not only in participants with normal cognition, but also in those with [mild cognitive impairment](#)," says Yasar.

"Additionally, we were also able to assess the possible role of elevated systolic blood pressure in AD dementia by placing those within each medication group in categories above and below systolic blood pressures of 140 mmHg, the standard cut-off reading for a diagnosis of hypertension," she said.

Yasar cautioned that the analysis had its limitations, owing mostly to the fact that the data collected by the GEMS trial were not gathered to directly measure the effect of the drugs, and by the fact that it was impossible to tell with certainty how well each group of participants complied with their drug treatments. Nor did the research team have information on subjects' use of drugs prior to the study period.

But, she said, "the consistent pattern we saw of reduced [risk](#) of AD dementia associated with these medications warrants further studies, including the use of brain imaging, to better understand the biologic basis of these associations." Such studies, she added, "could lead to identification of new pharmacologic targets for preventive interventions to slow cognitive decline and possibly delay progression of AD dementia."

Provided by Johns Hopkins University School of Medicine

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