

Study identifies blood pressure drug as potential treatment for Black patients with Alzheimer's disease

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Cleveland Clinic-led study identifies blood pressure drug as potential treatment for Black patients with Alzheimer's disease. Credit: Cleveland Clinic

Considering how patients from different ethnic groups respond to the

same drug could be crucial to finding new Alzheimer's disease treatments—a disorder the Alzheimer's Association previously deemed a "silent epidemic" among Black adults.

A Cleveland Clinic-led study published in *Alzheimer's & Dementia: The Journal of the Alzheimer's Association* showed that telmisartan, a [drug](#) currently prescribed for people with high blood pressure, is associated with a lower risk of Alzheimer's specifically in Black patients over age 60. Insurance data from millions of adults over age 60 did not show the same [potential effect](#) in white patients.

The findings suggest that future clinical trials should prioritize including patients from [minority populations](#) to find or reinforce these associations, says Feixiong Cheng, Ph.D., Cleveland Clinic Genomic Medicine Institute.

More than 6 million people in the U.S. suffer from Alzheimer's disease, the most common form of dementia. Black adults over age 60 are 1.5 to twice as likely to develop Alzheimer's than white patients. So far there is only one drug approved to treat a potential underlying cause for Alzheimer's directly in the brain, though there are other options for addressing symptoms.

"Considering race-specific drug responses holds potential for drastically improving [patient care](#)," Dr. Cheng says. "Identifying these candidate drugs can also reveal more information about the disease itself through referencing the medicine's targets."

Turning to data to find new treatments

Dr. Cheng's team is applying innovative research techniques using [artificial intelligence](#) and de-identified data from Cleveland Clinic's expansive electronic medical record systems to identify novel targets and

repurposable medicines for Alzheimer's treatment. Yuan Hou, Ph.D., a member of Dr. Cheng's lab and Pengyue Zhang, Ph.D., Indiana University School of Medicine, are co-first authors on the study.

Dr. Cheng's lab in Cleveland Clinic's Lerner Research Institute utilizes human genome sequencing data from the Alzheimer's Disease Sequencing Project, a nationwide network aiming at identifying the genetic underpinnings and effective drug targets for Alzheimer's [disease](#).

For this study, researchers used state-of-the-art retrospective cohort design analysis to examine data of more than 5 million patients in the Alzheimer's Disease Sequencing Project. They found that telmisartan was significantly associated with a reduced incidence of Alzheimer's in Black participants.

Telmisartan is part of a group of drugs that treat high blood pressure through blocking angiotensin II, a hormone that causes blood vessels to constrict. A blood pressure medication that treats [high blood pressure](#) differently, lisinopril, did not show the same [potential benefits](#) as telmisartan, indicating angiotensin II blockers might be helpful in preventing or treating Alzheimer's in Black patients.

Designing more comprehensive clinical trials

Black patients are more likely to have the comorbidities already associated with Alzheimer's, like hypertension, diabetes and chronic kidney diseases. Researchers are now working to determine how routine medical management of these conditions might also be associated with the reduced risk of developing Alzheimer's when taking telmisartan.

Though Black patients are more likely to develop Alzheimer's and suffer from associated comorbidities, they are chronically underrepresented in clinical trials. Keeping this in mind when recruiting for trials can help

produce diverse population genetic data, critical to further investigation and drug discovery, Dr. Cheng says.

More information: Population-based discovery and Mendelian randomization analysis identify telmisartan as a candidate medicine for Alzheimer's disease in African Americans, *Alzheimer s & Dementia* (2022). [DOI: 10.1002/alz.12819](https://doi.org/10.1002/alz.12819)

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