Do some diabetes drugs reduce the risk of Alzheimer's?

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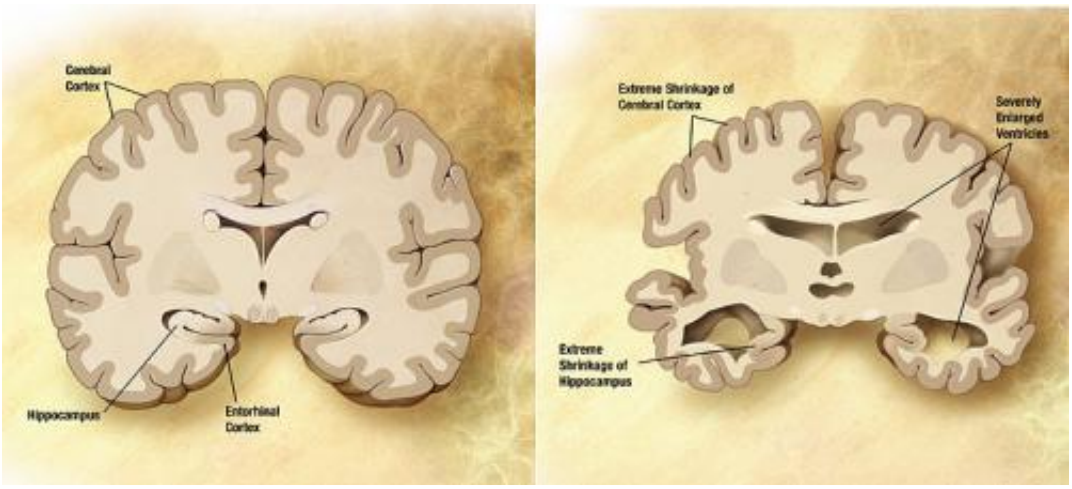

Diagram of the brain of a person with Alzheimer's Disease. Credit: Wikipedia/public domain.

People taking certain drugs to lower blood sugar for type 2 diabetes had less amyloid in the brain, a biomarker of Alzheimer's disease, when compared to both people with type 2 diabetes not taking the drugs and people without diabetes. The new study, published in the August 11, 2021, online issue of *Neurology*, the medical journal of the American Academy of Neurology, also found people taking these drugs, called dipeptidyl peptidase-4 inhibitors, showed slower cognitive decline than people in the other two groups.

In people with type 2 diabetes, the body no longer efficiently uses insulin

to control blood sugar. Dipeptidyl peptidase-4 inhibitors, also known as gliptins, can be prescribed when other diabetes drugs do not work. They help control blood sugar when combined with diet and exercise.

"People with diabetes have been shown to have a higher risk of Alzheimer's disease, possibly due to high blood sugar levels, which have been linked to the buildup of amyloid beta in the brain," said study author Phil Hyu Lee, MD, Ph.D., of Yonsei University College of Medicine in Seoul, South Korea. "Not only did our study show that people taking dipeptidyl peptidase-4 inhibitors to lower blood sugar levels had less amyloid in their brains overall, it also showed lower levels in areas of the brain involved in Alzheimer's disease."

The study involved 282 people with an average age of 76 who were followed up to six years. All had been diagnosed with either pre-clinical, early or probable Alzheimer's disease. Of the group, 70 people had diabetes and were being treated with dipeptidyl peptidase-4 inhibitors, 71 had diabetes but were not being treated with the drugs and 141 did not have diabetes. Those without diabetes were matched to those with diabetes for age, sex, and education levels. All had similar scores on cognitive tests at the start of the study.

Participants had brain scans to measure the amount of amyloid in the brain.

Researchers found that people with diabetes who took the drugs had lower average amounts of amyloid plaques in the brain compared to people with diabetes who did not take the drugs and compared to people who did not have diabetes.

All participants took a common thinking and memory test called the Mini-Mental State Exam (MMSE) on average, every 12 months for 2.5 years. Questions include asking a person to count backward from 100 by

sevens or copying a picture on a piece of paper. Scores on the test range from zero to 30.

Researchers found that people with diabetes who took the drugs had an average annual decline of 0.87 points on their MMSE score, while people with diabetes who did not take the drugs had an average annual decline of 1.65 points. People without diabetes scored an average annual decline of 1.48 points.

When researchers adjusted for other factors that could affect test scores, they found that the scores of the people taking the drug declined by 0.77 points per year more slowly than the people who did not take the drug.

"Our results showing less amyloid in the brains of people taking these medications and less cognitive decline, when compared to people without diabetes raises the possibility that these medications may also be beneficial for people without diabetes who have thinking and memory problems," said Lee. "More research is needed to demonstrate whether these drugs may have neuroprotective properties in all people."

A limitation of the study was that data were not available to show the accumulation of amyloid in participants' brains over time. This study does not show cause and effect. It only shows an association.

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