Medical Xpress

Certain diabetes drugs may reduce risk of dementia, Korean study reveals

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Sodium-glucose cotransporter-2 (SGLT-2) inhibitors used to treat type 2 diabetes might prevent dementia, providing greater benefits with longer treatment, suggests a large study from Korea published by *The BMJ*.

As this study was observational, the researchers note that the effect size could have been overestimated and say randomized controlled trials are now needed to confirm these findings.

According to the World Health Organization, the number of people with dementia globally is expected to reach 78 million by 2030 and type 2 diabetes is associated with a greater risk of developing dementia.

A recent study of over 65s with type 2 diabetes suggested a decreased risk of dementia associated with SGLT-2 inhibitors versus another type of diabetes drug, dipeptidyl peptidase-4 (DPP-4) inhibitors. But the effects on younger people and specific types of dementia (e.g., Alzheimer's disease, vascular dementia) remains unclear.

To address this, researchers used the Korea National Health Insurance Service database to identify 110,885 pairs of adults with type 2 diabetes aged 40–69 years who were free of dementia and started taking either an SGLT-2 inhibitor or a DPP-4 inhibitor between 2013 and 2021.

All participants (average age 62; 56% men) were matched by age, sex, use of the diabetes drug metformin, and baseline cardiovascular risk and were followed up for an average of 670 days to see who developed dementia.

Potentially influential factors including personal characteristics, income level, underlying risk factors for dementia, other conditions and related medicine use, were also taken into account.

Over the follow-up period, a total of 1,172 participants with newly diagnosed dementia were identified.

Dementia rates per 100 person years were 0.22 for those using SGLT-2 inhibitors and 0.35 for those using DPP-4 inhibitors, corresponding to a

35% reduced risk of dementia associated with use of SGLT-2 inhibitors compared with DPP-4 inhibitors.

The researchers also found a 39% reduced risk for Alzheimer's disease, and a 52% reduced risk for vascular dementia associated with SGLT-2 inhibitors compared with DPP-4 inhibitors.

What's more, the effect of SGLT-2 inhibitors seemed more pronounced with longer treatment duration. A 48% reduced risk of dementia was seen for more than two years of treatment versus a 43% reduced risk for two years or less.

This is an observational study so no firm conclusions can be drawn about cause and effect, and the authors note that details of health behaviors (e.g., smoking and alcohol consumption) and duration of type 2 diabetes were not fully available.

However, they point out that this was a large study based on nationally representative data that included relatively younger people with type 2 diabetes, and results were highly consistent across subgroups.

As such, they say SGLT-2 inhibitors might prevent dementia, providing greater benefits with longer treatment, and they call for randomized controlled trials to confirm these findings.

This study reports promising results that have important implications for clinical practice as well as from a public health perspective, say researchers from Taiwan in a linked editorial.

They agree that further trials are needed to confirm these findings, and suggest that studies are also needed "to explore the underlying mechanisms of any neuroprotective effects of SGLT-2 inhibitors."

As no cure currently exists for dementia and few effective treatment options are available, strategies that can potentially prevent onset are critically important, they write.

Given the substantial socioeconomic and public health burdens associated with both dementia and type 2 diabetes, they also recommend that clinical guidelines and health care policies should be updated regularly to incorporate the latest best evidence on the potential benefits of SGLT-2 inhibitors, including reduced dementia risk.

More information: Risk of dementia after initiation of sodium-glucose cotransporter-2 inhibitors versus dipeptidyl peptidase-4 inhibitors in adults aged 40-69 years with type 2 diabetes: population based cohort study. *The BMJ* (2024) DOI: 10.1136/bmj-2024-079475

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