Certain diabetes drugs may protect against serious kidney problems

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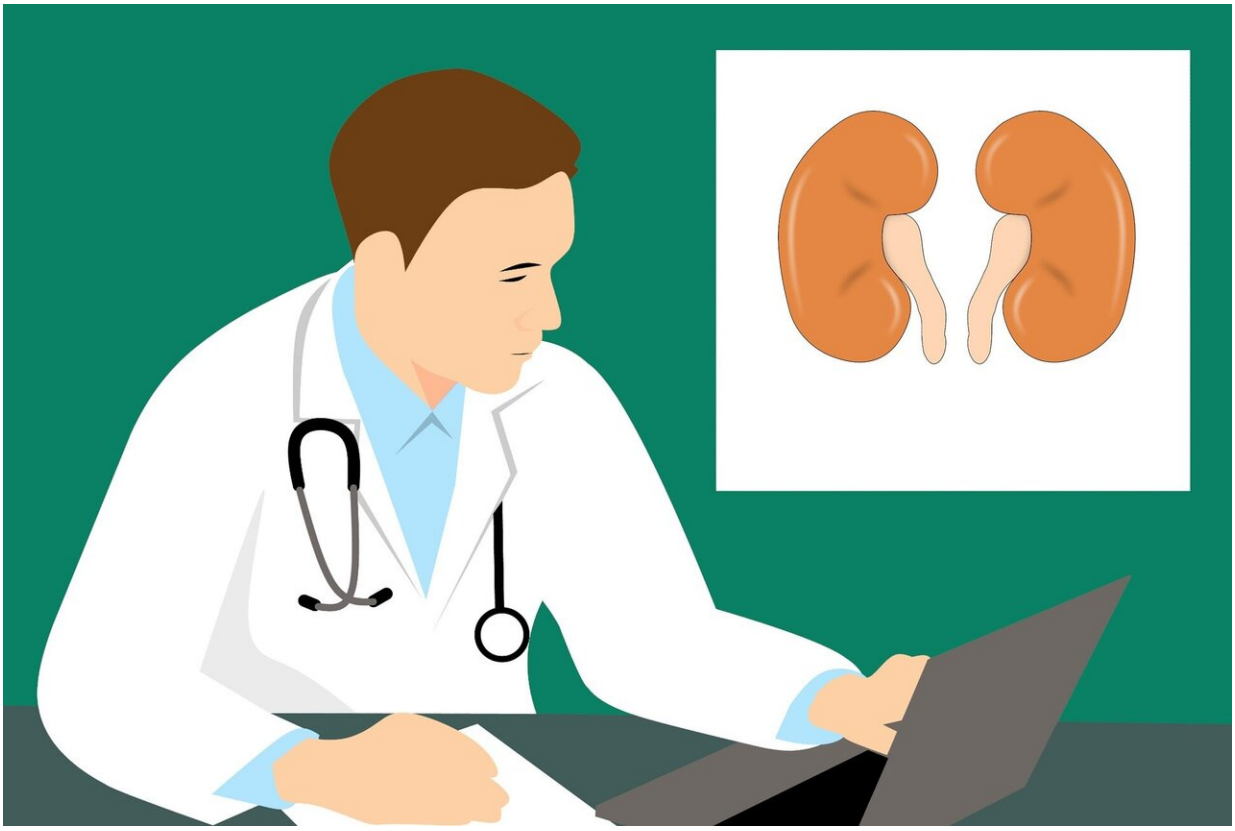

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Use of sodium glucose cotransporter 2 (SGLT2) inhibitors to treat type 2 diabetes may help to lower the risk of serious kidney problems, finds a study published by *The BMJ* today.

The findings provide further support for the use of SGLT2 inhibitors in a broad range of patients with type 2 diabetes.

Type 2 diabetes is the leading cause of kidney failure. Clinical trials have shown that SGLT2 inhibitors protect kidney (renal) function among patients with type 2 diabetes, but their effect on serious renal events in patients in "real-world" clinical practice remains uncertain.

So an international team of researchers set out to assess the association between use of SGLT2 inhibitors and risk of serious renal events using data from routine clinical practice.

They used nationwide register data from Sweden, Denmark, and Norway from 2013-18 to compare use of SGLT2 inhibitors with another group of diabetes drugs called dipeptidyl peptidase-4 (DPP-4) inhibitors.

Prescription data was used to identify 29,887 new users of SGLT2 inhibitors and 29,887 new users of dipeptidyl peptidase-4 inhibitors (average age 61 years).

Hospital records and death statistics were used to track serious renal events for an average of two years. These included renal replacement therapy, death from renal causes, and hospital admission for renal events.

The researchers found that compared with DPP-4 inhibitors, use of SGLT2 inhibitors was associated with a reduced risk of serious renal events (2.6 events per 1000 person years versus 6.2 events per 1000 person years).

This equates to a difference of 3.6 fewer events per 1000 person-years or a 58% lower relative risk of serious renal events with SGLT2 inhibitors.

Further analysis found greater risk reduction in patients with underlying cardiovascular disease and chronic kidney disease (CKD).

This is an observational study, so can't establish cause, and the researchers point to some study limitations, such as relying on prescription data and hospital records, which may have affected the accuracy of their results.

What's more, because the study was conducted in Scandinavia, findings may not apply to other populations and healthcare systems.

However, they say that in this analysis using nationwide data from three countries, use of SGLT2 inhibitors, compared with DPP-4 inhibitors, was associated with a significantly reduced risk of serious renal events.

These findings complement the results of previous randomised trials, suggesting that SGLT2 inhibitors may lower the risk of serious renal events in routine clinical practice, they conclude.

The results from this well designed study are consistent with previous research and add new evidence that SGLT2 inhibitors seem preferable to DPP-4 inhibitors in patients at risk of developing or worsening kidney disease, says Steven Smith at the University of Florida, in a linked editorial.

Despite this study's strengths there are some reasons for caution in interpreting the results, he writes.

Additional trials in real world settings and more diverse populations "could add further support for broader access to these drugs, not just in high income countries, but also in lower income countries where the burden of kidney disease is disproportionately high," he concludes.

In an analysis article also published today, researchers point out that SGLT2 inhibitors have received several serious safety warnings since approval, but the number, timeliness, and strength of these safety communications have differed between American, Australian, Canadian, and European regulators.

They call for greater transparency in decision making to help increase the accountability of both regulators and industry and allow more informed treatment choices to be made.

More information: Use of sodium-glucose co-transporter 2 inhibitors and risk of serious renal events: Scandinavian cohort study, *BMJ* (2020). DOI: 10.1136/bmj.m1186

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