Research shows the newest glucose-lowering drug could reduce the risks of renal and respiratory diseases

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Table 4. Subgroup Analysis (by Sex) for the Association of Sodium-Glucose Cotransporter 2 Inhibitors With Risk of Incident Obstructive Airway Disease

Group	No. of patients	No. of events	Total person-years	Median follow-up (IQR), y	Hazard ratio (95% CI)	*P* value[a]
Men						
DPP4I	12 404	586	28 896	2.3 (1.0-3.5)	1 [Reference]	NA
SGLT2I	3101	74	5910	1.4 (0.5-3.1)	0.66 (0.51-0.86)	.002
Women						
DPP4I	9360	485	22 157	2.4 (1.1-3.5)	1 [Reference]	NA
SGLT2I	2340	59	4048	1.1 (0.4-2.8)	0.73 (0.54-0.97)	.03

Abbreviations: DPP4I, dipeptidyl peptidase-4 inhibitor; NA, not applicable; SGLT2I, sodium-glucose cotransporter 2 inhibitor.

[a] *P* for interaction = .52.

Subgroup Analysis (by Sex) for the Association of Sodium-Glucose Cotransporter 2 Inhibitors With Risk of Incident Obstructive Airway Disease. Credit: *JAMA Network Open* (2023). DOI: 10.1001/jamanetworkopen.2022.51177

A research team in the Department of Pharmacology and Pharmacy, LKS Faculty of Medicine, the University of Hong Kong (HKUMed) has discovered that sodium-glucose cotransporter 2 inhibitors (SGLT2i) could reduce the risks of renal and respiratory diseases, including end-stage renal disease (ESRD), obstructive airway disease (OAD) and pneumonia in a retrospective cohort study.

These studies provided novel real-world evidence that SGLT2i could

confer extra-glycemic protection to patients with type 2 diabetes and potentially be a better alternative to an older class of glucose-lowering drugs, dipeptidyl peptidase-4 inhibitors (DPP4i). The discovery has been published in *The Journal of Clinical Endocrinology & Metabolism* and *JAMA Network Open*.

SGLT2i are a new class of second-line glucose-lowering drugs for type 2 diabetes. Placebo-controlled clinical trials and multinational observational studies have shown that besides glycemic control, SGLT2i also confer cardiovascular and renal protection in patients with type 2 diabetes over the past few years.

However, it is not clear whether SGLT2i could provide better cardiorenal protection when compared to individual classes of older glucose-lowering drugs that have been widely prescribed in recent years, such as DPP4i. A retrospective cohort study has been conducted so to investigate the association of SGLT2i, with 4 renal outcomes, namely ESRD, albuminuria, acute renal failure (ARF), and the decline in estimated glomerular filtration rate (eGFR).

The team also conducted another retrospective cohort study to investigate the association of SGLT2i with the risk of OAD and pneumonia because SGLT2i were shown to inhibit the lung NLRP3 inflammasome activation, which has been implicated in both asthmatic airway inflammation and chronic obstructive pulmonary disease (COPD) exacerbations in some animal studies.

From a cohort of more than 30,000 patients with type 2 diabetes in Hong Kong, after adjusting for potential confounders, the team found that compared to DPP4i, SGLT2i were significantly associated (P-value