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Novel antihyperglycaemic drugs and prevention of chronic obstructive pulmonary disease exacerbations among patients with type 2 diabetes: population-based cohort study

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Glucagon-like peptidase 1 (GLP-1) receptor agonists, dipeptidyl peptidase-4 (DPP-4) inhibitors, and sodium-glucose co-transporter-2 (SGLT-2) inhibitors are commonly prescribed novel antihyperglycaemic drugs – i.e., drugs that lower glucose levels in the blood. In addition to their favourable cardiovascular effects, emerging evidence suggests that these drugs may also have beneficial effects on lung function, such as among patients with chronic obstructive pulmonary disease (COPD).

Given that patients with type 2 diabetes are at a high risk of COPD related morbidity and mortality, we did a large population-based cohort study to determine whether GLP-1 receptor agonists, DPP-4 inhibitors, and SGLT-2 inhibitors, separately, are associated with a decreased risk of COPD exacerbation among patients with COPD and type 2 diabetes, compared with sulfonylureas.

The results of this population-based cohort study indicate that, compared with sulfonylureas, GLP-1 receptor agonists were associated with a 30% lower risk of severe exacerbation and a 37% lower risk of moderate exacerbation of COPD among patients with type 2 diabetes and COPD. By contrast, DPP-4 inhibitors were not consistently associated with an overall lower risk of these outcomes, and SGLT-2 inhibitors were associated with a reduced risk of severe, but not moderate, exacerbations. Further research, including confirmatory randomised controlled trials, will be needed to investigate the potential of GLP-1 receptor agonists and SGLT-2 inhibitors as a therapeutic option in patients with type 2 diabetes and COPD.

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