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Patterns and timing of add-on diabetes medicines after initiating metformin

Investigators: Milder TY[1,2,3,4,5], Lin J[5], Pearson SA[5], Greenfield JR[1,3,4], Day RO[2,4], Stocker SL[2,6], Falster MO[5*], de Oliveira Costa J[5*] (* joint senior investigators)

Author Affiliations:

1Department of Diabetes and Endocrinology, St. Vincent's Hospital, Sydney; 2Department of Clinical Pharmacology and Toxicology, St. Vincent's Hospital, Sydney; 3Clinical Science Pillar, Garvan Institute of Medical Research; 4School of Clinical Medicine, UNSW Medicine & Health, St Vincent's Healthcare Clinical Campus, UNSW Sydney, 5Medicines Intelligence Research Program, School of Population Health, Faculty of Medicine and Health, UNSW Sydney; 6School of Pharmacy, Faculty of Medicine and Health, University of Sydney.

Presenter's Email Address: t.milder@unsw.edu.au

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Abstract

Background: The cardiovascular and renal benefits of sodium-glucose cotransporter 2 inhibitors (SGLT2i) and glucagon-like peptide-1 receptor agonists (GLP-1RA) have changed type 2 diabetes treatment guidelines from a focus on glycaemic control to cardio-renal risk reduction. Limited is known about how these changes have affected use of these medicines.

Aims: To examine the rates, and type of, first add-on anti-hyperglycaemic agents (AHA) to metformin.

Methods: We used the dispensing records of a 10% random sample of Pharmaceutical Benefits Scheme eligible people. We included people aged 40 years and older initiating metformin (no dispensing in the 365 days prior) in the period of 01/01/2018 to 31/12/2020. Our primary outcome measure was first add-on AHA within two years of initiating metformin by year of metformin initiation (2018-2020). We analysed time to dispensing of first add-on AHA according to year of metformin initiation.

Results: Overall 38,747 people aged 40 years and older initiated metformin between 2018 and 2020, of which 33.4% initiated add-on AHA in the subsequent two years. Dipeptidyl peptidase-4 (DPP-4) inhibitors were the most common first add-on AHA across people commencing metformin from 2018 to 2020. Amongst people with add-on therapy, SGLT2i use increased from 28.8% amongst people initiating metformin in 2018 to 35.0% amongst those initiating in 2020, and GLP-1RA increased from 3.0% to 9.6%, respectively. The median time to add-on therapy was 30 days (interquartile range: 0, 318 days); with 33.9% of people with add-on therapy initiating the therapy on the same day metformin was initiated.

Conclusions: Amongst people initiating metformin from 2018 to 2020, an increasing proportion of first add-on AHA were those with cardio-renal benefits.

Impact: Our study shows that dispensing of add-on AHA after metformin is increasingly consistent with type 2 diabetes management guidelines. However, more work is needed to ensure implementation of clinical trial evidence into practice.