

POSC63: Cost-Effectiveness of Non-Statin Lipid-Lowering Drug Therapies for the Primary and Secondary Prevention of Cardiovascular Disease Among Patients with Type 2 Diabetes Mellitus: A Systematic Review

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Background

- Diabetes mellitus affects 415 million people worldwide, 91% of whom have type 2 diabetes mellitus (T2DM)
- In 2017, the overall cost of DM was US\$ 327 billion due to direct medical expenses and reduced productivity
- Statin therapy remains the cornerstone of lipid-lowering therapy in patients with T2DM but additional approaches of using non-statin lipid-lowering therapies (NSLLTs) have emerged
- Despite the recognised role of some NSLLTs for the management of cardiovascular risk in patients with T2DM, data on their cost-effectiveness findings are inconsistent

Objective

- To systematically review data on the cost-effectiveness of NSLLTs for the primary and secondary prevention of cardiovascular disease (CVD) in patients with T2DM

Methods

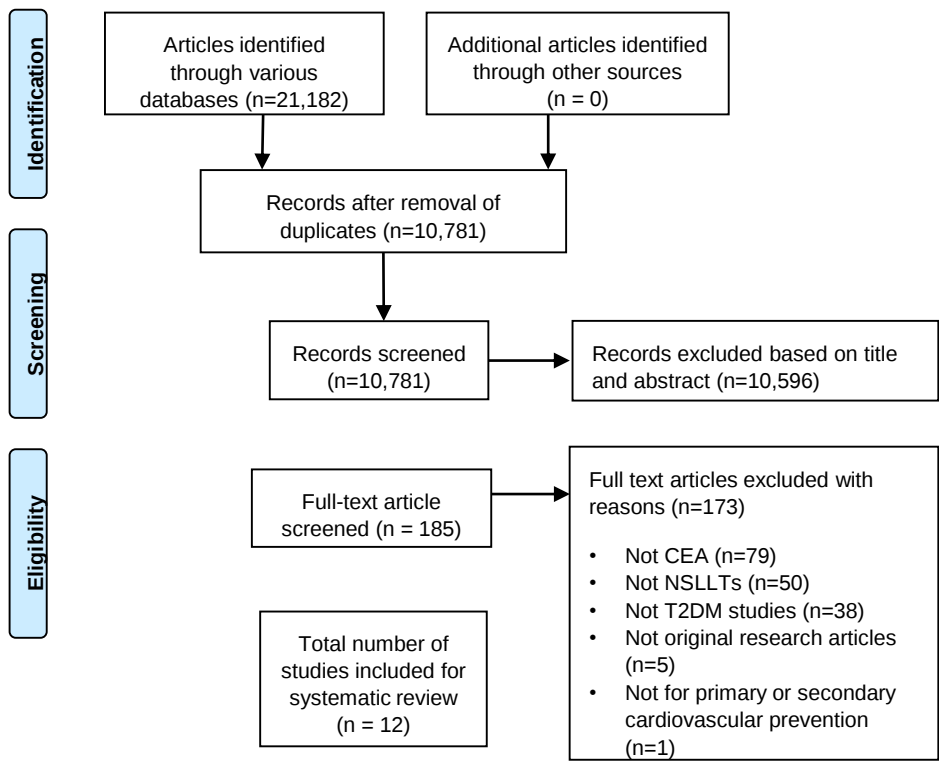
- We retrieved cost-effectiveness studies that were published between January 1990-January 2021 in English
- We included studies that evaluated the cost-effectiveness of NSLLTs vs. any comparator in patients with T2DM with or at risk of CVD
- The outcomes were: incremental cost-effectiveness ratio (ICER) per quality-adjusted life-years (QALYs), life-years or life-years gained, CVD events and costs avoided
- The Quality of Health Economic Studies (QHES) checklist was used for quality assessment

Methods (Cont.)

- The Quality of Health Economic Studies (QHES) checklist was used for quality assessment
- Cost outputs were adapted to 2021 United States dollars (US\$) to facilitate comparisons across studies

Results

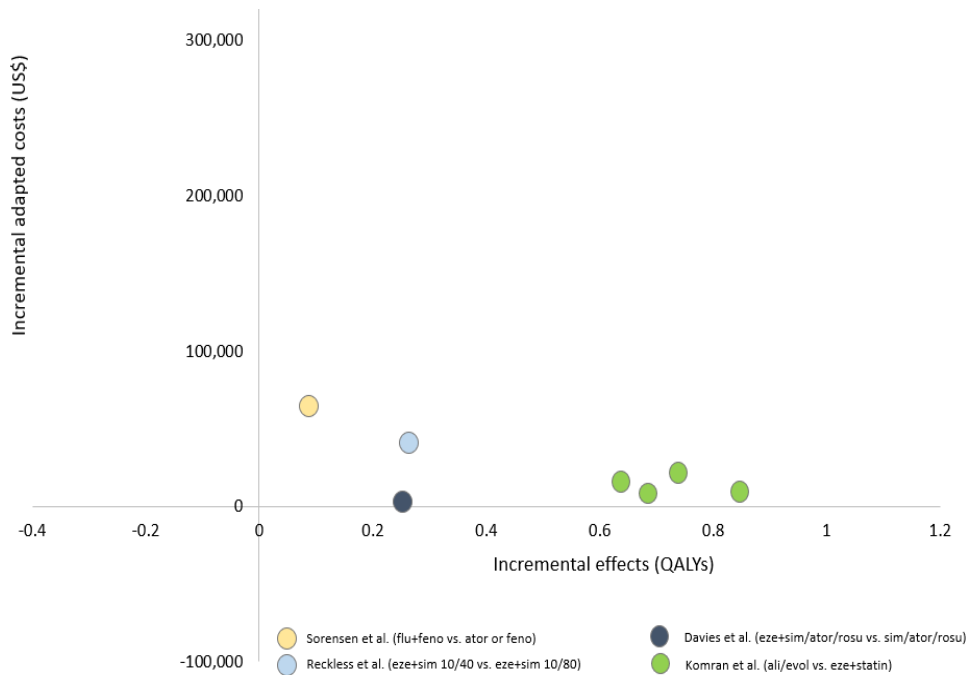
Figure 1. PRISMA flow diagram showing the selection process of the included articles



- The search identified 21,182 records (Figure 1): ezetimibe (n=8), proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitors (n=4), fenofibrate (n=2), nicotinic acid (n=1), and extended-release niacin/laropiprant (ER- ERN/LRPT) (n=1), compared to standard care

Results (Cont.)

Figure 2. Cost-effectiveness plane demonstrating net costs adapted to 2021 US\$ and original reported net QALYs



- Six out of eight studies considered ezetimibe plus statin to be a cost-effective therapy for patients with T2DM with or without CVD, three out of four studies suggested that PCSK9 inhibitors were not cost-effective, fenofibrate, nicotinic acid, and ER-ERN/LRPT were also cost-effective
- Most economic evaluations had good reporting quality
- The main cost-effectiveness drivers were drug costs and baseline cardiovascular risks. The ICERs remained unchanged in most studies (Figure 2)

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