

Conference abstract

Cardiovascular and Limb Outcomes with Tirzepatide versus SGLT2 Inhibitors in Peripheral Artery Disease and Type 2 Diabetes: A Real-world Cohort Study

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Keywords: 2026 Research Forum Poster Presentation

<https://doi.org/10.69735/001c.163881>

INTRODUCTION

Patients with peripheral artery disease (PAD) and type 2 diabetes mellitus (T2DM) face a markedly elevated risk of limb ischemic events, cardiovascular complications, and death. While sodium–glucose cotransporter 2 inhibitors (SGLT2i) are widely used in this population, comparative data with tirzepatide remain limited. We evaluated cardiovascular and limb outcomes associated with tirzepatide versus SGLT2i in patients with PAD and T2DM.

METHODS

We performed a retrospective cohort study using the TriNetX global federated research network. Adults aged ≥40 years with PAD and T2DM initiating tirzepatide or an SGLT2i were identified. Patients receiving both therapies, those without follow-up, or with incomplete records were excluded. Propensity score matching (1:1) was performed to balance baseline characteristics. The primary outcome was major adverse limb events (MALEs). Secondary outcomes included major adverse cardiovascular events (MACE), all-cause mortality, myocardial infarction, ischemic stroke, and heart failure. Outcomes were assessed at 1 and 3 years, and Cox proportional hazards regression was used to estimate hazard ratios (HR).

RESULTS

After propensity score matching, 11,161 patients were included in each group. Compared with SGLT2i, tirzepatide was associated with a significantly lower risk of MALEs at 1 year (HR 0.42, 95% CI 0.36–0.50) and 3 years (HR 0.46, 95% CI 0.39–0.53). Tirzepatide was also associated with a lower risk of MACE at 1 year (HR 0.49, 95% CI 0.43–0.56) and 3 years (HR 0.53, 95% CI 0.47–0.59), with sustained reductions in 3-year all-cause mortality (HR 0.40), acute MI (HR 0.51), ischemic stroke (HR 0.66), and heart failure (HR 0.59) (all $p < 0.001$).

CONCLUSIONS

In this large real-world cohort of patients with PAD and T2DM, tirzepatide was associated with significantly lower risks of major limb events, cardiovascular events, and mortality compared with SGLT2 inhibitors, with benefits evident early and sustained through 3 years. These findings likely reflect tirzepatide's favorable effects on adiposity, glycemic control, and vascular inflammation. Although residual confounding is inherent to observational research, rigorous propensity score matching was used to enhance group comparability. This study provides timely comparative evidence supporting tirzepatide as a potentially valuable therapeutic strategy for reducing both limb and cardiovascular risk in this high-risk population.

Published: June 29, 2026 EDT.



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