Association Between GLP-1 Receptor Agonist Initiation and Alcohol Use Disorder and Alcohol-Related Medical Conditions in a U.S. Administrative Claims Database

EPH18

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Objective: To evaluate the association between GLP-1 receptor agonist (GLP-1RA) initiation and incident Alcohol Use Disorder (AUD) and alcohol-related medical conditions using a U.S. administrative claims database.

Background

Emerging evidence suggests GLP-1RAs may reduce alcohol use by modulating reward pathways and attenuating alcohol's reinforcing effects. Clinical and mechanistic studies demonstrate reductions in alcohol craving and consumption, supported by systematic evidence across populations.[1,2] Large real-world analyses further report lower risks of AUD and alcohol-related events among GLP-1RA users.[3,4] However, whether these effects translate into reduced incidence of clinically diagnosed alcohol-related disease in routine care remains unclear.

Methods

We conducted a retrospective cohort study using U.S. administrative claims from 2019-2025. Adults with ≥6 months of continuous pre-indexenrollment who initiated a GLP-1RA (semaglutide, tirzepatide, liraglutide,dulaglutide, or exenatide) were closely matched to non-GLP-1RAcomparators on age, gender, insurance type, obesity and diabetes diagnoses, and baseline alcohol-related history. Outcomes included incident AUD (ICD-10: F10*) and alcohol-related medical conditions: alcoholic liver disease (K70*), alcohol-induced pancreatitis (K85.2*; K86.0), alcohol-related neurologic disorders (G31.2; G62.1), and alcoholiccardiomyopathy (I42.6). Incidence rates were calculated using person-time methods; incidence rate ratios (IRRs) with Poisson confidence intervals were estimated.

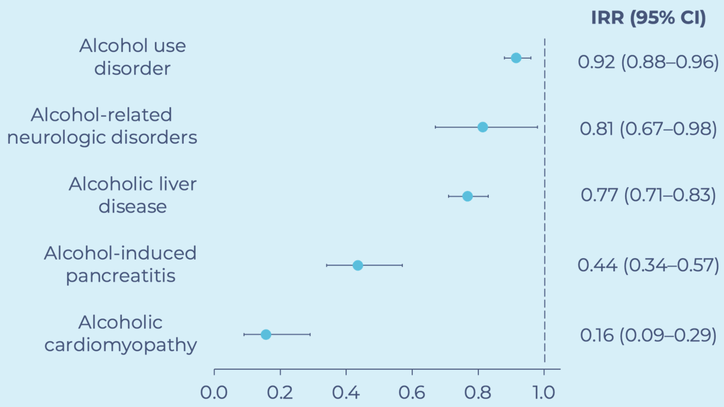
Results

The study included approximately 2.9 million GLP-1RA initiators and 5.9 million matched controls, contributing over 600,000 person-years of follow-up. GLP-1RA initiation was associated with a lower incidence of newly diagnosed AUD (IRR 0.92; 95% CI 0.88-0.96). Larger relative reductions were observed for downstream alcohol-related medical conditions, including alcoholic liver disease (IRR 0.77; 95% CI 0.71-0.83), alcohol-induced pancreatitis (IRR 0.44; 95% CI 0.34-0.57), and alcoholic cardiomyopathy (IRR 0.16; 95% CI 0.09-0.29). Reductions were directionally consistent across all evaluated outcomes.

Conclusions

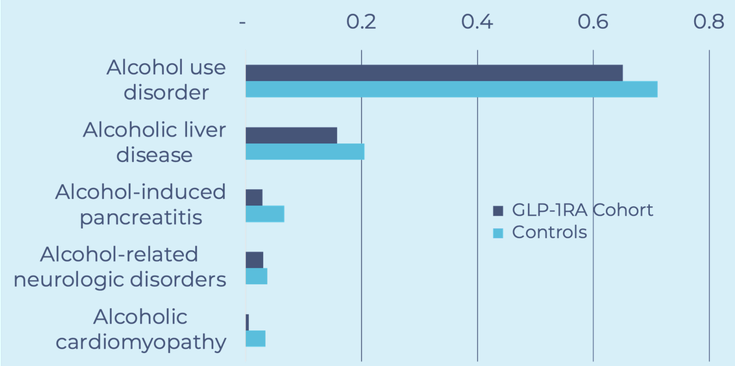
In this large real-world analysis, GLP-1RA initiation was associated with a lower incidence of AUD and multiple alcohol-related medical conditions. These findings extend emerging mechanistic and behavioral evidence by demonstrating potential downstream reductions in clinically meaningful alcohol-related disease, suggesting GLP-1RAs may influence downstream alcohol-related disease burden beyond their established metabolic indications and warrant further prospective evaluation.

Figure 1. Reduced Incidence of Alcohol-Related Outcomes Following GLP-1RA Initiation



Incidence rate ratios (IRRs) with 95% confidence intervals comparing GLP-1RA initiators to matched controls across alcohol-related outcomes, where values <1 indicate lower incidence among GLP-1RA users

Figure 2. Lower Absolute Incidence of Alcohol-Related Outcomes Among GLP-1RA Users



Event rates per 1,000 person-years comparing GLP-1RA initiators to matched controls across alcohol-related outcomes.

Figure 3. Study Population

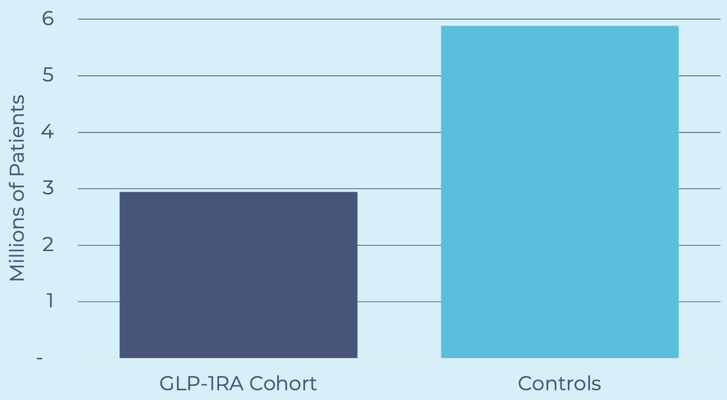


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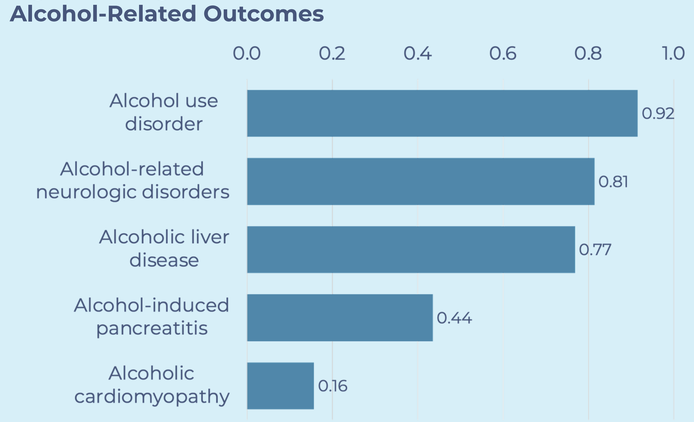
Figure 4. Magnitude of Relative Risk Reduction Across Alcohol-Related Outcomes



Incidence rate ratios (IRRs) comparing GLP-1RA initiators to matched controls, demonstrating greater relative reductions in downstream alcohol-related conditions

Citations

1. Tyndell B, et al. Association of GLP-1 Receptor Agonist Prescriptions and Alcohol Consumption in the National Institutes of Health's All of Us Cohort. medRxiv [Preprint]. 2026
2. Subhani M, et al. Association between glucagon-like peptide-1 receptor agonists use and change in alcohol consumption: a systematic review. eClinicalMedicine. 2024; 78
3. Wang W, et al. Associations of semaglutide with incidence and recurrence of alcohol use disorder in real-world population. Nat Commun 15, 4548 (2024)
4. Wium-Andersen IK, et al. Use of GLP-1 receptor agonists and subsequent risk of alcohol-related events. A nationwide register-based cohort and self-controlled case series study. Basic Clin Pharmacol Toxicol. 2022 Nov;131(5):372-379