Comparative Outcomes of Tirzepatide Versus GLP-1 Agonists in Obstructive Sleep Apnea

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Introduction

Obstructive sleep apnea (OSA) is closely linked to obesity through parapharyngeal fat deposition, airway edema, and airway collapse. **Tirzepatide, a dual GIP/GLP-1 receptor agonist,** has recently been approved for OSA and produces greater weight loss than **GLP-1 only agonists.**

HYPOTHESIS

Tirzepatide would be associated with lower rates of CPAP initiation and sleep surgery than GLP-1 receptor agonists.

Methods

Design	Retrospective cohort study
Data source	TriNetX US Global Collaborative Network
Population	Adults (>18 years) with obesity and OSA
Exposure	Tirzepatide vs liraglutide/semaglutide initiated after OSA diagnosis
Adjustment	Propensity-score matching for demographics, comorbidities, and disease severity
Outcomes	CPAP initiation and sleep surgery within 5 years
Statistics	Risk ratios (RR), 95% confidence intervals, and p-values

COHORT CONSTRUCTION

Obesity + OSA
medication initiated after OSA diagnosis

↓

Tirzepatide
n = 51,710

GLP-1 agonist
n = 51,710

↓

Outcomes:
Relative Risk of initiating **continuous airway positive pressure (CPAP)** or undergoing **sleep surgery** within 1-year

Results

103,420 matched patients

DUAL GIP/GLP-1 AGONIST
Tirzepatide

VS.

GLP-1 *ONLY* AGONIST
Liraglutide, Semaglutide

CPAP initiation within 5 years

RR 0.488

95% CI 0.457–0.522
p = <0.0001

51%
lower relative risk with Tirzepatide

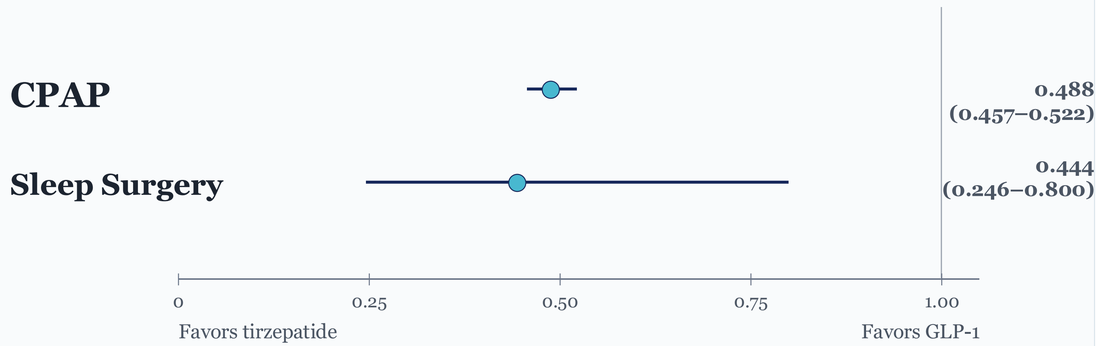
Sleep Surgery within 5 years

RR 0.444

95% CI 0.246–0.800
p = 0.0055

56%
lower relative risk with Tirzepatide

Relative Risk of Subsequent OSA Treatment



Take-Home Message

Tirzepatide was associated with significantly less CPAP initiation and sleep surgery than GLP-1 agonists over 5 years.

Discussion

Compared with GLP-1 receptor agonists, tirzepatide initiation after OSA diagnosis was associated with lower 5-year rates of both CPAP initiation and sleep surgery.

KEY FINDING

The association was substantial for both treatment endpoints, with relative risks below 0.50.

Potential interpretation

Prior data demonstrate greater weight reduction with tirzepatide. Differential effects on visceral fat distribution may also be relevant to OSA pathophysiology.

Clinical implication

For patients with obesity-related OSA, tirzepatide may offer an opportunity to reduce dependence on CPAP and the need for surgical intervention.

Limitations

- Retrospective, observational design
- Outcomes derived from real-world coded data
- Associations do not establish causality
- Abstract does not provide absolute event rates or residual-confounding analyses

References

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