

A Deep Plane Dive Into GLP-1 Receptor Agonists and Facelift Outcomes

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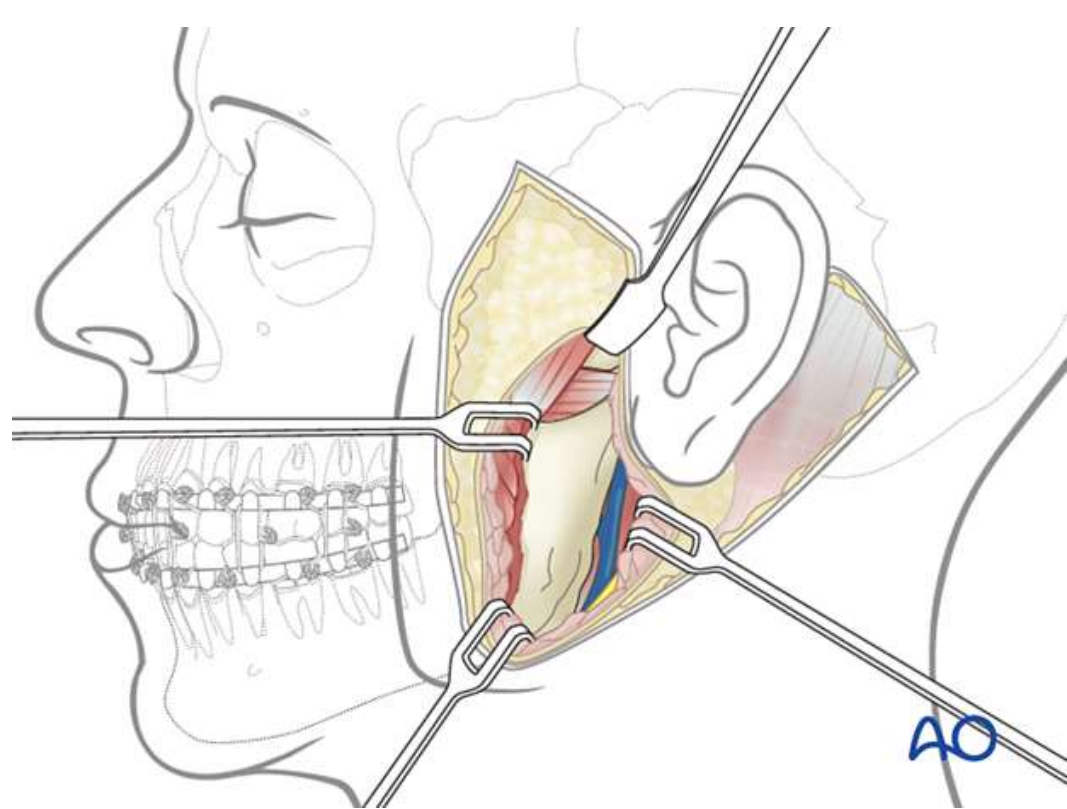
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BACKGROUND

Rising GLP-1 Use: GLP-1 receptor agonists are increasingly prescribed for diabetes and obesity, including in patients pursuing elective cosmetic procedures.

Perioperative Concern: These medications have raised questions about surgical safety, particularly related to gastric emptying, wound healing, and postoperative recovery. Data on postoperative outcomes in aesthetic facial surgery remain limited.

Study Rationale: This study evaluated whether preoperative GLP-1 receptor agonist use is associated with complications after facelift surgery in a large national cohort.



From AO Foundation Surgery Reference, “Facelift (Rhytidectomy) Approach”

METHODS



Data was collected from **Epic Cosmos**, a large, aggregated electronic health record (EHR) database with data from over 1,900 hospitals and 45,000 clinics, encompassing over 300 million unique individuals.

Adults undergoing facelift (rhytidectomy) between 2014–2024 were identified using CPT codes; patients required ≥1 year of prior clinical history.

Preoperative GLP-1 receptor agonist use was defined as **≥6 months** of therap prior to surgery.

Primary outcomes included 90-day postoperative complications (infection, wound dehiscence, hematoma, seroma, thromboembolism) and 30-day healthcare utilization (readmission, ED visit).

Outcomes were further evaluated by duration of GLP-1 use and time since discontinuation prior to surgery to assess exposure-dependent effects.

RESULTS

Cohort characteristics

- A total of **23,081 facelift patients** were identified, including **411 (1.8%)** with preoperative GLP-1 use
- In the unmatched cohort, GLP-1 users had higher BMI and were more likely to have diabetes, hypertension, and prior bariatric surgery.
- After propensity score weighting, the cohort was well balanced, with **825 patients** included in the weighted analysis.

Table 1: Unadjusted event rates and weighted adjusted associations between preoperative GLP-1 receptor agonist use and postoperative complications following facelift.

Outcome	No GLP-1 use, n/N (%)	GLP-1 use, n/N (%)	Adjusted OR	95% CI	P value
Skin and soft tissue infection	512/22,670 (2.3%)	13/411 (3.2%)	0.9	(0.50, 1.63)	0.7297
Wound dehiscence	108/22,670 (0.5%)	5/411 (1.2%)	2	(0.68, 5.86)	0.2094
Skin necrosis	19/22,670 (0.1%)	0/411 (0.0%)	---	---	---
Hematoma	299/22,670 (1.3%)	6/411 (1.5%)	1.17	(0.50, 2.74)	0.7134
Seroma	72/22,670 (0.3%)	2/411 (0.5%)	1.02	(0.24, 4.34)	0.9767
30-day readmission	101/22,670 (0.4%)	3/411 (0.7%)	0.91	(0.30, 2.76)	0.8684
30-day ED visit	408/22,670 (1.8%)	11/411 (2.7%)	1.1	(0.59, 2.05)	0.7681
Deep vein thrombosis	117/22,670 (0.5%)	3/411 (0.7%)	0.96	(0.26, 3.47)	0.9504
Pulmonary embolism	155/22,670 (0.7%)	4/411 (1.0%)	0.7	(0.27, 1.83)	0.4673

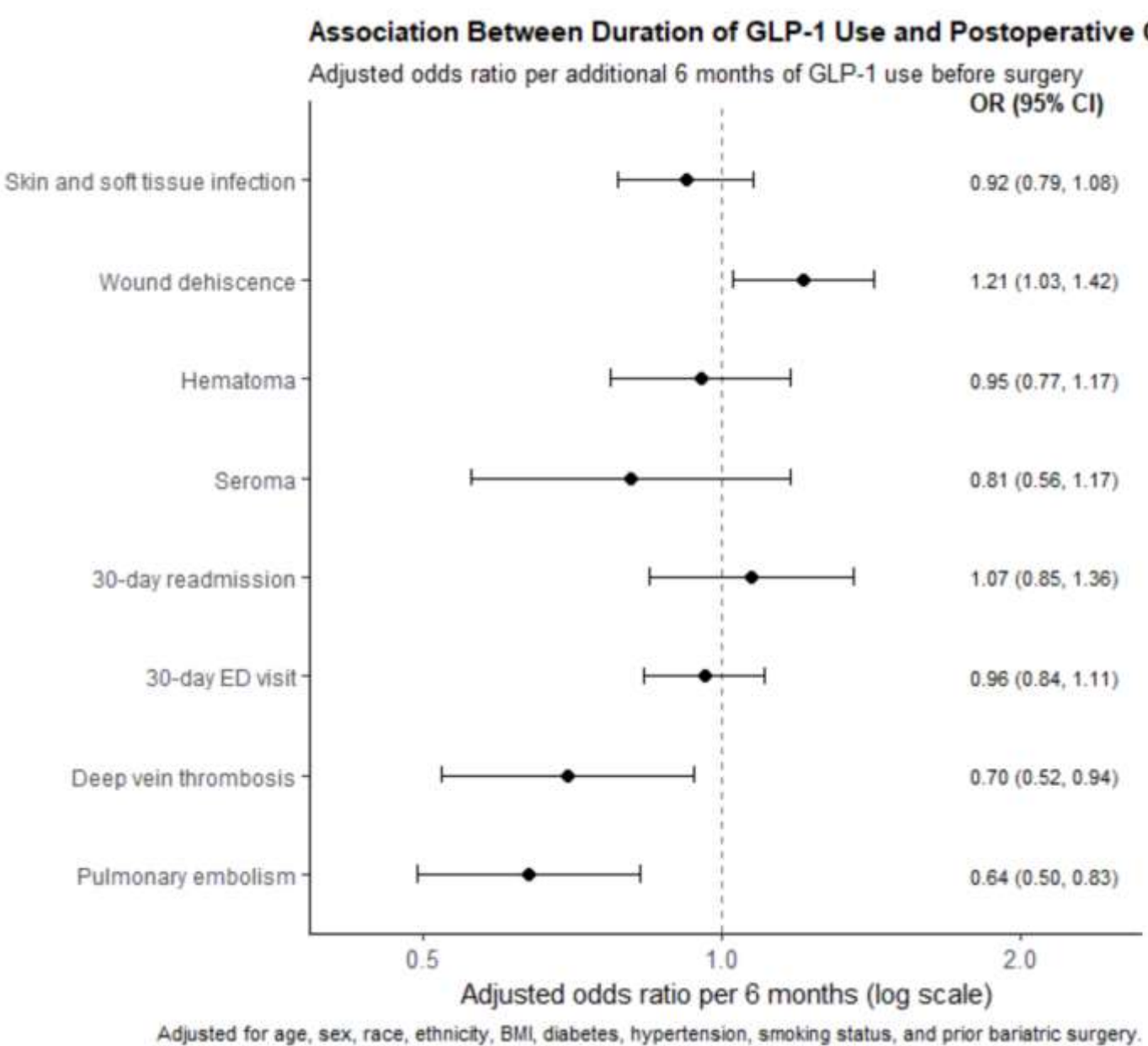


Figure 1: Adjusted Odds Ratios for Postoperative Complications by Duration of GLP-1 Use

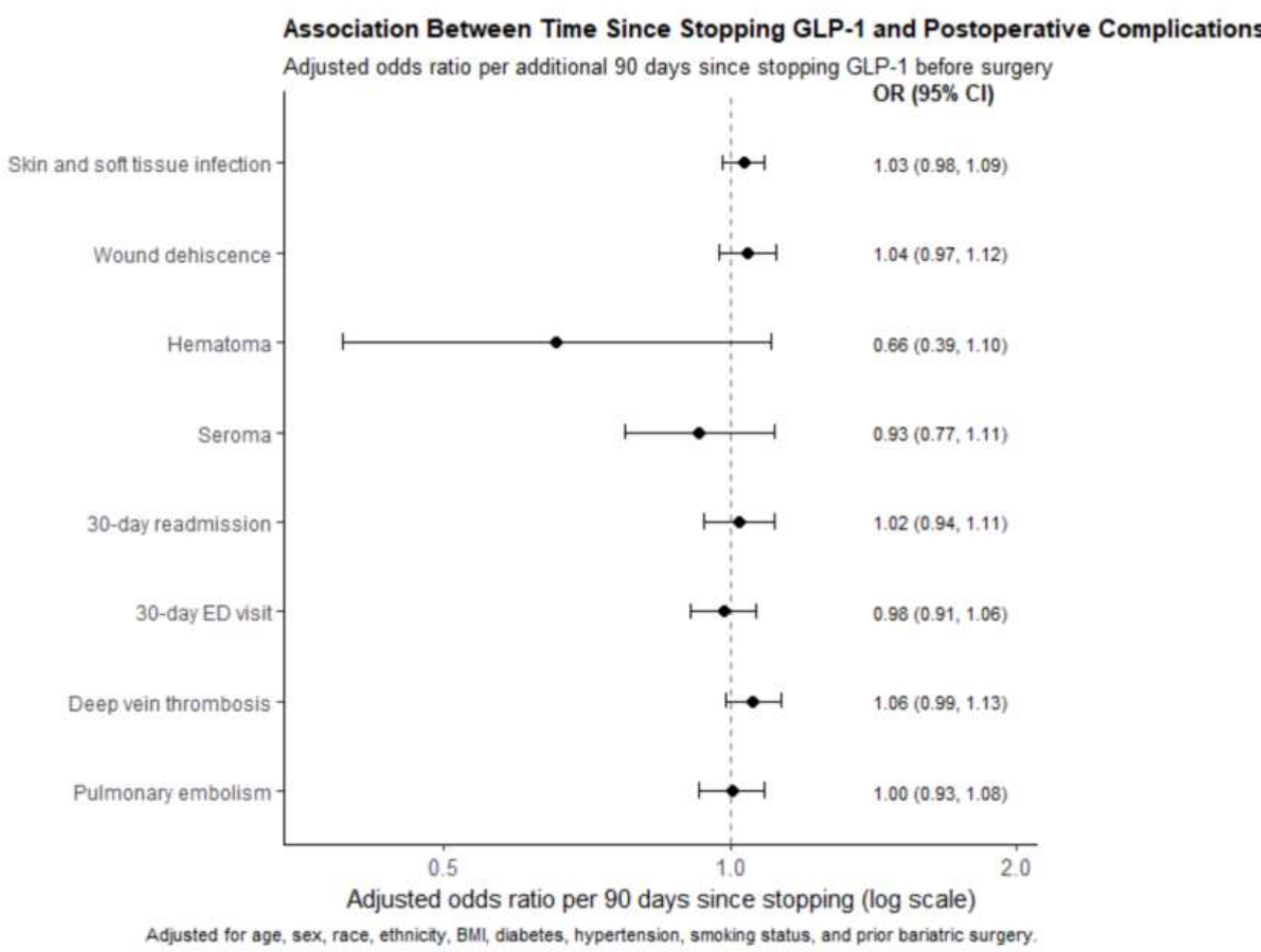


Figure 2: Adjusted Odds Ratios for Postoperative Complications by Time Since Stopping GLP-1 Use

CONCLUSIONS

- In this nationwide cohort, preoperative GLP-1 receptor agonist use was not associated with increased postoperative complications after facelift surgery.
- Longer duration of use was associated with higher odds of wound dehiscence and lower odds of thromboembolic events, while time since discontinuation was not associated with outcomes.

FUTURE DIRECTIONS

Future studies should evaluate the impact of GLP-1 dosing, adherence, and perioperative management, as well as incorporate prospective data and procedure-specific variables to better define risk stratification in facelift patients.

Limitations:

- Reliance on EHR data may result in incomplete or inaccurate capture of diagnoses, medications, and complications.
- Lack of operative details (e.g., technique, extent of dissection, surgeon factors) that may influence outcomes.
- Potential for missed postoperative events if patients sought care outside participating institutions.

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