

Zachary T St. Pierre, L3
LSU Health Sciences Center, New Orleans, LA

Dr. Brandon Byrd-Clayton, MD PhD, Dr. Harvey Chim, MD FACS
LSUHSC, School of Medicine, Department of Plastic and Reconstructive Surgery

“Association of Different Glucagon-Like Peptide Receptor Agonists with Wound Healing Complications in Diabetic Patients Undergoing Carpal Tunnel Release”

As usage of Glucagon-like peptide receptor agonists (GLP-1RA) continue to increase in usage across the United States, there is a need for better understanding of their impacts on wound healing complications. This study aimed to assess variations in wound healing complications between different GLP-1RA therapies and to evaluate difference in complication rates in patients receiving open or endoscopic carpal tunnel release (CTR).

A retrospective chart review of ninety-six patients was performed, including patients with a documented diagnosis of Diabetes Mellitus Type 2, receiving GLP-1RA therapy, and having a CTR procedure between 2013 and 2025 while on a GLP-1RA. Data collected included history, physical exam findings, electrodiagnostic studies, surgical details, and clinical documentation related to follow up rates and complication development, specifically instances of wound site infection or dehiscence. Participants were excluded from the study if they had no documented follow up after the procedure. Open CTR was performed in 79.2% of cases and endoscopic CTR in 20.8% of cases. GLP-1RA utilization was distributed among semaglutide (40.6%), dulaglutide (25.0%), tirzepatide (17.7%) and liraglutide (16.7%). %).

When comparing open and endoscopic procedures, wound healing complications occurred in 16 of 75 patients who underwent open CTR, compared to only 1 of 21 patients who underwent endoscopic CTR. This result was not found to be statistically significant (OR: 3.55, $P = 0.103$). There was also no significant association between factors such as antibiotic prophylaxis or use of tourniquet. Tirzepatide was significantly associated with a higher risk of wound healing complications (OR: 3.37, CI: 1.04 – 10.57, $P = 0.044$) compared to other GLP-1RA. Tirzepatide works dually on GLP-1 and glucose-dependent insulinotropic polypeptide (GIP) receptors, and often results in greater weight loss. This study did not include data on prescriber patterns of providers and whether patients who were prescribed tirzepatide because of its greater weight loss potential may have also had greater BMI or poorer health at baseline, which would confound risk of wound healing complications. Limitations of this study relate to a small single center retrospective series with only 17 complication events. This study also did not have a control cohort of patients not exposed to a GLP-1RA, so inferences about the effects of GLP-1Ras are limited. The most substantial limitation is operator confounding related to variation in clinical documentation and treatment.

Among patients with diabetes who are receiving GLP-1RA therapy, tirzepatide use was associated with higher odds of wound healing complications following CTR. No GLP-1RA demonstrated postoperative complication rates lower than rates reported in the literature for patients with diabetes undergoing CTR. Thus, GLP-1RA therapy alone does not mitigate the elevated risk of wound-healing complications in this population.