

Slimming the Risks: GLP-1 Receptor Agonist Therapy May Reduce In-Hospital Complications Following Hip Fracture Surgery Compared to Obese Patients Not on These Medications

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Purpose: Emerging evidence suggests that glucagon-like peptide-1 (GLP-1) receptor agonists may influence overall general health and potentially bone health. The effects of this class of medication on fracture outcomes has not been studied. The purpose of this study was to evaluate the impact of prolonged GLP-1 usage on the incidence of major and minor in-hospital complications following hip fracture surgery across various body mass index (BMI) strata.

Methods: A prospective hip fracture database was queried. Between 2016 and 2023, 58 patients who sustained a hip fracture and were on GLP-1 therapy for obesity for ≥ 6 months were identified (Group A). This group had a mean pretreatment BMI of 33.16 ± 4.82 and a mean time of injury BMI of 29.04 ± 5.97 . Group A was matched to patients of varying BMI, not on GLP-1 therapy, Group B (BMI 18.5–25), Group C (BMI 25–30), and Group D (BMI ≥ 30). Matching incorporated age, injury type, and comorbidities (age-unadjusted Charlson Comorbidity Index). Major postoperative complications were defined as events requiring additional surgery or interventional procedures, prolonging hospitalization, or substantially impairing patient function (eg, pulmonary embolism, organ failure). Minor complications were defined as issues managed with minimal treatment (e.g., superficial wound infection, mild nausea). Chi-square tests with standardized adjusted residual tests were used.

Results: A total of 232 patients (58 per group) were included. Minor complication rates differed significantly ($\chi^2 \approx 15.25$, $p < 0.01$), ranging from 21.15% (Group A) to 51.92% (Groups C and D). Post hoc standardized residuals indicated that Group A had significantly fewer minor complications than expected ($|r| \approx -2.49$), while the other groups did not deviate significantly ($|r| < 1.96$). Overall complication rates also differed significantly ($\chi^2 \approx 17.33$, $p < 0.001$), ranging from 28.85% (Group A) to 67.31% (Group D). Significantly fewer overall complications than expected ($|r| \approx -2.30$) developed in Group A, whereas Groups B, C, and D did not deviate significantly ($|r| < 1.96$). Major complications (9.62%–23.08%) did not differ significantly among the four groups ($\chi^2 = 4.06$, $p > 0.05$).

Conclusion: Long-term GLP-1 receptor agonist therapy is associated with a reduction in overall and minor in-hospital complications in obese patients undergoing hip fracture surgery.