GLP1 Receptor Agonists Decrease Medical Complications, Surgical Complications, and Readmission Rates Following Total Knee Arthroplasty

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INTRODUCTION:
Obesity is associated with increased risk following total knee arthroplasty (TKA). Glucagon-like peptide-1 receptor agonists (GLP1-RA) have emerged as a promising therapy for obesity. The purpose of this study was to determine whether obese patients taking a GLP1-RA had different outcomes to patients not on the medication following TKA.
METHODS:
All obese patients with OA undergoing primary TKA from 2010 to 2022 were identified using an insurance claims database (n=749,864). Patients taking a GLP1-RA (n=34,048) were matched on a 1:1 basis to patients not taking the medication (n=34,048) using age, gender, body mass index (BMI), Elixhauser Comorbidity Index (ECI), and tobacco use. All patients had a minimum of 2-year follow-up. The outcomes were 90-day medical complications, 90-day readmission rates, and 2-year surgical complications.
RESULTS:
There were no differences in age, sex, BMI, tobacco use, and ECI between the two groups ($p>0.05$). Patients on GLP1-RA had lower odds of developing ischemic stroke (0.27% versus 0.62%; OR 0.58; $P < 0.05$), deep vein thrombosis (0.65% versus 1.58%; OR 0.47; $P < 0.05$), pulmonary embolism (0.29% versus 0.75%; OR 0.44; $P < 0.05$), myocardial infarction (0.14% versus 0.38%; OR 0.49; $P < 0.05$), pneumonia (0.74 versus 1.66%; OR 0.48; $P < 0.05$), acute kidney injury (1.08% versus 1.84%; OR 0.74; $P < 0.05$), and sepsis (0.29% versus 0.56; OR 0.67; $P < 0.05$). The odds of revision surgery was lower for patients on a GLP1-RA (3.11% versus 3.72%; OR 0.88; $P < 0.05$). Patients taking a GLP1-RA also had lower odds of prosthetic joint infection (0.33% vs. 0.98%, OR=0.39, $p<0.05$), periprosthetic fracture (0.05% vs. 0.09%, OR=0.44, $p<0.05$), and aseptic loosening (0.20% vs. 0.48%, OR=0.40, $p<0.05$).
DISCUSSION AND CONCLUSION:
Obese patients on GLP1-RA had lower odds of 90-day medical complications, 90-day readmissions, and 2-year reoperations following TKA compared to matched patients not taking the medication.