

## Is Preoperative Tramadol a Safe Alternative to Opioids in Total Knee Arthroplasty?

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**Introduction:** Preoperative opioid use has been shown to lead to postoperative opioid use following total knee arthroplasty (TKA). Tramadol is recommended for symptomatic treatment of osteoarthritis; however, it acts on opioid receptors and may confer similar adverse effects. The purpose of this study was to assess postoperative opioid use with preoperative opioid and tramadol use.

**Methods:** Patients undergoing primary TKA between 2007 and 2016 were identified in the Humana administrative claims database using CPT code 27447. Patients were stratified by whether they filled a prescription for an opioid, tramadol, either, or neither within 3 months before TKA. Prescription claims for opioids and tramadol were tracked for 12 months postoperatively. Relative risk for each group was calculated.

**Results:** 107,973 patients undergoing TKA were identified. Preoperatively, 29,890 (27.7%) patients filled a prescription for only opioids, 8,049 (7.5%) for only tramadol, 44,403 (41.1%) for either tramadol or opioids, and 63,570 (58.9%) did not fill a prescription for either. At 12 months after TKA, an opioid prescription was filled by 6.0% of preoperative opioid free patients, 35.2% preoperative opioid users (RR: 5.83 [5.63-6.03]), 9.2% preoperative tramadol users (RR: 1.52 [1.40-1.63]), and 29.5% preoperative opioid or tramadol users (RR: 4.88 [4.72-5.05]). Opioid or tramadol prescriptions were filled by 7.7% of preoperative opioid free patients, 37.3% preoperative opioid users (RR: 4.84 [4.70-4.99]), 26.2% preoperative tramadol users (RR: 3.40 [3.26-3.57]), and 35.7% preoperative opioid or tramadol users (RR: 4.64 [4.50-4.78]) at 12 months after TKA.

**Conclusions:** Patients taking tramadol preoperatively were found to be at lower risk for prolonged postoperative opioid use following TKA. However, patients taking either tramadol or opioids preoperatively continued to fill prescriptions for these medications at a significantly higher rate than those who were not. Additional studies are needed to assess if preoperative tramadol use is associated with inferior clinical outcomes.