Paper #18

The Impact of Preoperative Tramadol-Only Use on Outcomes Following Total Knee Arthroplasty

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Introduction: Opioid use prior to total knee arthroplasty (TKA) is known to have detrimental influence on postoperative outcomes. However, tramadol, an "atypical opioid", has previously been grouped with traditional opioids in studies that have established preoperative opioids as detrimental to outcomes. This is an important relationship to clarify as tramadol is currently recommended by the AAOS clinical practice guidelines for the non-operative management of symptomatic knee arthrosis. Therefore, the purpose of this study is to investigate this relationship.

Methods: This is a retrospective cohort study using the Truven Marketscan® databases. Patients undergoing primary TKA were identified and divided into cohorts based on preoperative medication status (i.e. opioid naïve, tramadol-only, or non-tramadol opioids). Patients having revision surgery, those <18 years old, and those without 6-month preoperative and 90-day postoperative enrollment were excluded. Patient demographics, comorbidities, and 90-day outcomes were collected and compared between cohorts. Revision rates were analyzed at 1- and 3-years postoperatively for those with adequate follow-up. Univariate and multivariate analysis was performed.

Results: 336,316 patients were included and 23,097 (6.9%) used tramadol-only preoperatively. Tramadol-only patients (vs. opioid naïve) had increased odds of 90-day readmission (OR 1.07, 95%CI 1.02-1.12, p=0.004), wound complication (OR 1.13, 95%CI 1.01-1.27, p=0.34), and 1- (OR 1.20, 95%CI 1.06-1.36, p=0.005) and 3-year revision rates (OR 1.35, 95%CI 1.19-1.53, p<0.001). However, when compared to the preoperative opioid cohorts, tramadol-only patients had equivalent or significantly decreased odds of all outcomes. Over the study period, preoperative opioid use decreased while tramadol-only use increased.

Conclusions: While tramadol-only use has lower risk than traditional opioids, tramadol-only use preceding TKA is associated with increased rates of readmission, wound complication and revision surgery. This is important information for prescribers who may be using tramadol to treat symptomatic knee arthrosis prior to arthroplasty referral and for thought leaders producing clinical practice guidelines.

Notes