
COMMENTARY & PERSPECTIVE

A Risk Factor Out of Control

Commentary on an article by Alon Ben-Ari, MD, et al.: "Preoperative Opioid Use Is Associated with Early Revision After Total Knee Arthroplasty. A Study of Male Patients Treated in the Veterans Affairs System"

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Optimal pain control following total knee arthroplasty (TKA) presents a challenging balance between effectiveness and risk, and warrants consideration and concern from both patients and surgeons. Great attention has been given recently to optimizing postoperative pain control through multimodal pain management protocols developed in an attempt to minimize use of opioid pain medications. While opioid pain medications can be effective for controlling postoperative pain, their use is not benign. Postoperative pain management can be made even more difficult by the preoperative use of opioids by patients about to undergo TKA. Preoperative opioid use has been shown to be associated with poorer postoperative pain control, an increase in postoperative complications, and a decrease in postoperative functional outcome measures^{1,2}.

Ben-Ari et al. build on prior literature regarding the effect of preoperative opioid use on a TKA population by evaluating its association with early revision due to TKA failure. They retrospectively reviewed the Veterans Affairs (VA) database, identifying >32,000 patients who underwent a primary TKA over a 6-year period. Outpatient VA pharmacy records for these patients were accessed to determine the morphine equivalent dose and duration of opioid pain medications prescribed during the year prior to the TKA. Long-term preoperative opioid use was defined as consecutive opioid prescriptions issued for >3 months during that year. The authors captured at least 1 year of postoperative follow-up data and, after controlling for relevant comorbidities, determined if long-term preoperative opioid use was associated with revision TKA.

In this VA population that underwent TKA, there was a male supermajority (94%), with a mean age of 64 years and a mean body mass index in the obese range (32.0 kg/m²). The prevalence of preoperative long-term opioid use during the year prior to the TKA was 39% of the patients. Patients with long-term preoperative opioid use were significantly more likely to undergo revision TKA surgery within 1 year after the index TKA (odds ratio: 1.40) as well as at any point in the observed follow-up period. Interestingly, these patients were not more likely to undergo knee manipulation. Opioid use was not associated with the cause for revision (infection or a non-infectious cause). Of other comorbidities evaluated, diabetes and chronic kidney disease were also associated with a higher rate of revision TKA during the first postoperative year.

This study illuminates the value in limiting opioid use during the nonoperative treatment of patients with knee arthritis. The findings in this large cohort of patients demonstrate that preoperative opioid use has a negative effect on the success of future TKAs (specifically, a higher rate of early revision TKA). Thus, the liberal use of opioids as part of nonoperative, or even preoperative, knee pain management could reasonably be discouraged. Furthermore, patients who are taking opioids when they present for TKA could reasonably be encouraged to decrease opioid use during preoperative preparation³.

The findings of this study emphasize that preoperative use of opioids should be considered among modifiable risk factors and comorbidities when deciding whether to perform TKA. The authors have brought this to light by juxtaposing opioid use with diabetes and renal disease as increasing the risk for early revision TKA. This study, along with others identifying risk factors for revision TKA^{4,5}, may be employed to guide patient-physician discussions regarding nonoperative management of knee arthritis, selection of management with TKA, and preparation for TKA. Ultimately, dissemination of this information to both patients and treating practitioners may increase the prevalence of successful TKAs.

We should be cautious in the interpretation of this study, keeping in mind the very specific VA demographic of its population and its retrospective, database-driven methodology. Also, the study included neither validated clinical pain nor functional outcome measures, focusing on only revision TKA as the end point. Furthermore, the study did not determine the causes for the revisions that were not due to infection—i.e., whether they were due to greater ongoing pain or demonstrable mechanical failure. Nevertheless, the study certainly draws attention to the important topic of preoperative opioid use, by demonstrating its association with the substantive negative consequence of early TKA failure and revision, and thereby offers considerations that could have a broad impact on our clinical practices.

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