

## **Preoperative Pain Management: Is Tramadol a Safe Alternative to Opioids Prior to Total Hip Arthroplasty?**

### **ABSTRACT**

**Background:** Preoperative opioid use has been associated with worse clinical outcomes and higher rates of prolonged opioid use following joint arthroplasty surgery. Tramadol has been recommended for pain management of osteoarthritis related pain. However, outcomes following total hip arthroplasty (THA) in patients taking tramadol in the preoperative period have not been well described. The aim of this study was to examine the effect of preoperative use of tramadol, opioid use or neither on postoperative outcomes in patients undergoing elective THA.

**Methods:** 8,104 patients who underwent primary THA from 2008 to 2014 were identified using the Humana Claims Database. Patients were grouped by preoperative pain management modality, including tramadol only, opioid only, or neither (opioid naïve). A multivariate logistic regression was used to evaluate post surgical outcomes including minor medical complications, ER visits, readmissions and prolonged opioid use.

**Results:** Opioid users had an increased risk of minor medical complications (OR 1.24,  $p=0.004$ ), emergency room (ER) visit (OR 1.18,  $p<0.039$ ), readmission (OR 1.34,  $p=0.003$ ), and prolonged opioid use (OR 4.71,  $p<0.001$ ) when compared to opioid naïve patients. Tramadol users had an increased risk of developing prolonged narcotic use (OR 2.01,  $p<0.001$ ) following surgery compared to opioid naïve patients. When compared to opioid users, tramadol use was associated with decreased risk of minor medical complication (OR 0.81,  $p=0.004$ ), readmission (OR 0.79,  $p=0.017$ ), and prolonged narcotic use (OR 0.43,  $p<0.001$ ). Opioid use significantly increased length of stay by 0.20 days ( $p=0.002$ ) when compared to both opioid naïve patients and tramadol users.

**Conclusion:** Compared to opioids, tramadol is a safe and cost-effective pain management choice preceding THA. Preoperative tramadol use may increase patient's risk of developing prolonged opioid use following THA, however, the risk of postoperative outcomes compared to opioid naïve patients **is similar** and there is a lower risk of postoperative complications when compared to opioid users.