Ketorolac Use in Total Hip Arthroplasty: Assessing Outcomes of Pain Management Trends in the Acute Postoperative Period

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INTRODUCTION: Ketorolac, a nonsteroidal anti-inflammatory drug (NSAID), is an effective analgesic frequently used following total hip arthroplasty. Against the backdrop of the burgeoning opioid epidemic, AAHKS has provided clinical practice guidance on post-operative ketorolac use. This population based cohort study evaluates propensity-matched outcomes for patients receiving ketorolac within 24-hours after Total Hip Arthroplasty (THA)

METHODS: The TriNetX Database was used to analyze outcomes in patients undergoing THA from 2007 to 2022. Patients receiving IV ketorolac within 24 hours postoperatively formed the treatment group, while those not receiving it comprised the control group. Propensity score matching (PSM) adjusted for baseline differences between cohorts across 33 conditions from the Charleston Comorbidity Index. Outcomes were assessed at 7 days, 14 days, and 30 days included acute kidney injury (AKI), deep vein thrombosis (DVT), pulmonary embolism (PE), incision and debridement (I&D), hospital readmission and transfusions. Subgroup analysis was used to assess outcomes in patients receiving varying doses (15ma/30ma).

RESULTS:

Before PSM, the control group consisted of 83.627 patients who underwent THA, while the treatment group included 39,319 patients who received ketorolac within 24 hours postoperatively. After 1:1 matching, both groups had 39,310 patients across 55 healthcare organizations, with no significant differences in 33 baseline characteristics. At all time points, there were no significant differences between groups in rates of AKI, DVT, or PE. However, at 30 days, the treatment group had lower rates of incision and debridement [risk ratio (RR): 0.545, 95% confidence interval (CI): 0.35-0.851; p < 0.002], hospital readmission [RR: 0.651, 95% CI: 0.618-0.685; p < 0.0001], and transfusions [RR: 0.502, 95% CI: 0.425-0.593; p < 0.002]. Subgroup analyses showed consistent outcomes across different dosages.

DISCUSSION AND CONCLUSION:

Patients who received ketorolac after THA based on AAHKS/AAOS guidelines are not at significant increased risk of AKI, PE, or DVT with decreased re-hospitalization rates and I&D. These outcomes underscore the safety of peri-operative ketorolac and highlight the importance of considering all pain management options for patients.