

## **Aspirin Versus Potent VTE Chemoprophylaxis in Total Knee Arthroplasty: Reduced Postoperative Pain and Complications with Aspirin Use**

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**INTRODUCTION:** Patients undergoing total knee arthroplasty (TKA) are at risk for postoperative venous thromboembolism (VTE). However, the optimal postoperative VTE chemoprophylaxis (VTEC) has not been established. Though recent studies suggest safety and efficacy outcomes of aspirin versus more potent VTEC (direct oral anticoagulants, enoxaparin, etc.), data on function and pain across VTEC regimens is limited. We compared postoperative pain and outcomes in patients undergoing TKA who receive aspirin versus potent VTEC.

**METHODS:** We identified 28,169 patients undergoing primary TKA for osteoarthritis between 2016 and 2023 at a single institution; 18,413 received aspirin and 9,756 received potent VTEC (apixaban, rivaroxaban, warfarin, heparin, enoxaparin). Outcomes included adjusted in-hospital opioid consumption (morphine milligram equivalents [MMEs] adjusted by hours in-hospital), length of stay (LOS), 90-day post-operative outpatient opioids, 180-day manipulation under anesthesia (MUA), and 90-day VTE, MI, readmissions, reoperations, and prolonged wound drainage. Multivariate linear regression calculated opioid-related outcomes, controlling for patient and surgical variables; univariate regression assessed remaining outcomes.

**RESULTS:** Mean 90-day post-operative outpatient opioids were higher in potent VTEC recipients (mean increase 152.8 MMEs, CI 129.1–176.4) and these patients experienced significantly longer LOS (mean increase 14.8 hours, CI 13.87–15.75). Patients on potent VTEC also increased 90-day complications including VTE (OR 3.1, CI 2.7–3.7), MI (OR 1.9, CI 1.3–3.0), readmission (OR 1.2, CI 1.1–1.4), and reoperation (OR 1.5, CI 1.3–1.7). These patients also experienced increased odds of 180-MUA (OR 1.5, CI 1.3–1.7). There were no clinical or statistical differences in adjusted in-hospital opioids or prolonged wound drainage.

**DISCUSSION AND CONCLUSION:** TKA patients treated with potent VTEC versus aspirin experience more postoperative pain in the first 90-days and have an increased odds of stiffness requiring MUA. Aspirin should be favored as a VTEC agent of choice to reduce risk of postoperative pain in TKA patients, when medically appropriate.