

Low-Dose Aspirin Provides Safe Thromboprophylaxis After Tibial or Femoral Shaft Surgery

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Purpose: Recent literature supports the use of low-dose (81 mg) aspirin for venous thromboembolism (VTE) prophylaxis following joint arthroplasty; however, its efficacy in high-risk patients after long bone fractures has not been evaluated. This study investigates trends in aspirin use in patients undergoing open reduction and internal fixation (ORIF) of femoral or tibial shaft fractures. We evaluate VTE risk and 90-day postoperative outcomes among patients receiving low-dose aspirin compared with alternative chemoprophylaxis.

Methods: The TriNetX Research Network database was used. CPT, ICD-10, and RxNorm codes were used to determine the proportion of patients undergoing ORIF for femoral or tibial shaft fractures who received low-dose aspirin versus other chemoprophylaxis (high-dose aspirin, warfarin, heparin, direct oral anticoagulants) between 2012 and 2023. VTE risk was determined by the 2022 ICM-VTE guidelines and 90-day postoperative outcomes (deep vein thrombosis, pulmonary embolism, mortality, infection, and hospital readmissions) were assessed. All statistical analysis was conducted in TriNetX, and outcomes were assessed using odds ratios (ORs).

Results: Between 2012 and 2023, we identified 27,342 patients who underwent ORIF for femoral or tibial shaft fractures and received VTE prophylaxis. Of these, 14,947 were classified as high VTE risk and 12,370 were classified as normal VTE risk. The use of low-dose aspirin increased from 2.9% to 24.9%; high-dose aspirin use decreased from 9.6% to 8.1%; warfarin use decreased from 5.5% to 0.6%, and low molecular weight heparin use decreased from 88.7% to 77.4%. High-risk VTE patients receiving low-dose aspirin had lower odds of VTE events 90 days postoperatively compared to other prophylaxis groups. Both low-risk and high-risk patients in the low-dose aspirin cohorts had similar risk of 90-day postoperative complications compared to those on alternative thromboprophylaxis.

Conclusion: This large cohort study demonstrates that low-dose aspirin is a safe and effective method of VTE chemoprophylaxis for patients undergoing ORIF for femoral or tibial shaft fractures.