

# High-dose Aspirin for Extended Venous Thromboembolic Prophylaxis after Total Hip or Total Knee Arthroplasty: An Observational Study

## Background:

Clinical guidelines such as AAOS (American Academy of Orthopedic Surgeons of 2012), ACCP (American College of Chest Physicians of 2012), and NICE (UK National Institute for Health and Care Excellence of 2018) endorsed aspirin as a grade of 1B (moderate evidence) or did not recommend aspirin as an optimal pharmacotherapy in VTE prophylaxis for preventing postoperative venous thromboembolism following total hip arthroplasty (THA) or total knee arthroplasty (TKA). Therefore, the optimal thromboprophylaxis regimen for aspirin is unclear.

## Objective:

This study aims to analyze the patients receiving high-dose aspirin (325 mg) for post-operative VTE prophylaxis following TKA or THA and compare the rates of safety and efficacy with the anticoagulants used in the current literature.

## Methods:

This retrospective cohort study was approved by the Southern Illinois University Edwardsville Institutional Review Board. This 5-month retrospective cohort study of 50 patients was conducted from January 2021 – May 2021 who underwent TKA or THA and received aspirin 325 mg twice daily for 35 days (extended prophylaxis) following the arthroplasty. The primary outcome was the composite of VTE events and death within 90 days after the surgery. The secondary outcome was bleeding events, transfusion requirements, and rehospitalization. All the outcomes were identified using the chart review. All study events were diagnosed and documented by the clinical treating team.

## Results:

A total of 50 patients were included in the study. The patient demographics include mean age:  $63.38 \pm 1.33$ , BMI:  $29.74 \pm 0.82$ , TKA: 28 (56%), THA: 22 (44%), history of peptic ulcer: 3 (6%), thrombocytopenia: 4 (8%), liver disease: 9 (18%), and renal disease: 5 (10%). For the primary efficacy outcome, VTE events developed in 2 (4%) patients and death occurred in 0 patients. For the secondary outcome, minor bleeding events occurred in 3 (6%) patients, major bleeding events occurred in 2 (4%) patients, transfusion was required in 2 (4%) patients, and rehospitalization was required in 7 (14%) patients.

## Conclusion:

Among the anticoagulants that are used as per the guidelines such as unfractionated heparin (UFH), low-molecular-weight heparin (LMWH), warfarin, and direct-oral anticoagulants (DOAC), aspirin has trended towards decreasing/no change in the outcome of VTE events and death. Along with that, fewer adverse effects such as bleeding complications and rehospitalization were noticed when compared to the literature involving other anticoagulants used for VTE prophylaxis. Therefore, these study results suggest that aspirin 325 mg twice daily for extended prophylaxis is a potentially safer option following TKA or THA.

## Keywords:

Thromboprophylaxis; aspirin; high-dose aspirin; arthroplasty; bleed; VTE