

# A Revolution in VTE Prophylaxis

*The oral Xa inhibitor apixaban is more effective than and as safe as enoxaparin for venous thromboembolism prophylaxis after hip replacement.*

Patients who undergo total hip replacement have very high perioperative risk for venous thromboembolism (VTE). Low-molecular-weight heparins (LMWHs; e.g., enoxaparin, dalteparin [Fragmin]) or vitamin K antagonists (e.g., warfarin) are recommended to lower risk, but LMWHs require subcutaneous injections, and warfarin requires lab monitoring. Oral apixaban (a factor Xa inhibitor that is not yet FDA approved) requires no lab monitoring, is convenient, and potentially is as effective as LMWHs or warfarin for preventing VTE.

Previous data suggested that apixaban was as effective as enoxaparin for VTE prevention in patients who had undergone knee replacement ([JW Gen Med Aug 11 2009](#)). Now, the same research group has conducted an industry-sponsored double-blind study of VTE prophylaxis after hip replacement; 5400 patients were randomized to receive apixaban (2.5 mg orally twice daily, initiated 12–24 hours postoperatively) or enoxaparin (40 mg subcutaneously every 24 hours, initiated 12 hours before surgery) for 35 days.

Apixaban was significantly more effective than enoxaparin for preventing the primary endpoint (asymptomatic or symptomatic deep venous thrombosis, nonfatal pulmonary embolism, or death; 1.4% vs. 3.9%), without excess risk for bleeding. Apixaban also was more effective than enoxaparin for preventing *major* VTE events. The number needed to treat (NNT) to prevent 1 primary endpoint was 40, and the NNT to prevent 1 major VTE event was about 150.

**Comment:** In this study, only ≈70% of enrolled patients were evaluated for the primary endpoint. Nonetheless, apixaban appears to be more effective than enoxaparin for VTE prophylaxis after total hip replacement. As noted by the editorialist, this class of drugs could transform how VTE is prevented and treated. The current lack of an antidote and the higher cost are barriers to use but are not insurmountable. It's more a matter of when, not if, these drugs will revolutionize care.

— [Aaron J. Calderon, MD, FACP](#)

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