

Oral Rivaroxaban Significantly Reduces Symptomatic VTE and Death after THA and TKA

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Introduction: Four phase III studies investigating rivaroxaban – an oral, direct Factor Xa inhibitor – for venous thromboembolism (VTE) prevention after total hip or knee arthroplasty compared rivaroxaban 10mg once daily with subcutaneous enoxaparin 40mg once daily (RECORD1: 35±4 days; RECORD2: 35±4 days' rivaroxaban or 12±2 days' enoxaparin then placebo; RECORD3: 12±2 days) or enoxaparin 30mg 12 hourly (RECORD4: 12±2 days).

Methods: Prespecified pooled analyses investigated efficacy and safety outcomes in three pools: total treatment duration (TTD; planned treatment period); total study duration (TSD; treatment and follow-up); day 12±2 active treatment (enoxaparin-controlled period).

Results: Rivaroxaban significantly reduced the composite of symptomatic VTE and death compared with enoxaparin regimens over the TTD (0.57%, 1.32%; $p < 0.001$), TSD (0.81%, 1.63%; $p < 0.001$), and day 12±2 (0.47%, 0.97%; $p = 0.001$), respectively. Rivaroxaban significantly reduced the composite of pulmonary embolism and death over the TTD ($p = 0.025$). Major bleeding was not significantly increased with rivaroxaban compared with enoxaparin regimens in any pool duration. Major plus clinically relevant non-major bleeding increased with rivaroxaban compared with enoxaparin regimens over the TTD (3.19%, 2.55%, respectively; $p = 0.039$). Rivaroxaban reduced the composite of death, myocardial infarction, stroke, symptomatic VTE, and major bleeding over the TSD (post hoc; $p = 0.004$). Subgroup analysis (TTD) showed no clinically relevant effect of age, weight, gender, or renal function (creatinine clearance > 30 mL/min), supporting fixed dosing without coagulation monitoring in these subgroups.

Conclusion: Rivaroxaban – an oral, once-daily, direct Factor Xa inhibitor – is the first anticoagulant to significantly reduce the composite of symptomatic VTE and death compared with enoxaparin, without significantly increasing major bleeding risk.