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Title **Dabigatran or Rivaroxaban Versus Other Anticoagulants for Thromboprophylaxis After Major Orthopedic Surgery: Systematic Review of Comparative Clinical-Effectiveness and Safety**

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Aim

To determine the clinical effectiveness and safety of dabigatran or rivaroxaban compared to low-molecular-weight heparins (LMWH), unfractionated heparin, warfarin, or fondaparinux for thromboprophylaxis after elective total hip replacement, elective total knee replacement, or hip fracture surgery.

Results and conclusions

The evidence that dabigatran is at least as effective as enoxaparin for thromboprophylaxis after total hip replacement (THR) or total knee replacement (TKR) is conflicting. Three phase-3 trials evaluating rivaroxaban showed superior clinical effectiveness over enoxaparin in preventing venous thromboembolism (VTE) after THR or TKR. The Canadian Expert Drug Advisory Committee (CEDAC) recommended that rivaroxaban, but not dabigatran, be listed in publicly funded drug plans for prophylaxis of VTE after TKR or THR. No head-to-head trials compare rivaroxaban with dabigatran, or compare either drug to other anticoagulants. There is no evidence to support the use of dabigatran or rivaroxaban in patients undergoing hip fracture surgery.

Recommendations

Not applicable.

Methods

Published English-language reports of any study design, were identified by searching electronic databases between 1999 and April 17, 2009. The websites of regulatory, health technology assessment, and other related agencies were searched for additional reports. Searches were supplemented by hand searching bibliographies of relevant reports. Two reviewers selected articles for inclusion using pre-defined criteria.

Further research/reviews required

Although some efficacy and safety data for dabigatran and rivaroxaban are available, data from additional trials and postmarketing surveillance are needed to characterize the role of these anticoagulants for thromboprophylaxis among diverse patient populations after major orthopedic surgery.

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