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Warfarin versus low molecular weight Heparin versus Aspirin with regards to infection rates following knee or hip arthroplasty: A meta-analysis of 9 studies including 184,094 cases

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Aim: To review current literature and determine if patients undergoing hip or knee arthroplasty and receiving warfarin in the perioperative period, are at increased risk of developing peri-prosthetic joint infection.

Methods: A systematic literature search was conducted on 12th March 2018 using PubMed, EMBASE, CINAHL and Cochrane Register of Controlled Trials (CENTRAL) databases to identify studies that compared warfarin, aspirin and/or low molecular weight heparin with regards to infection and/or DVT/PE rates following hip or knee arthroplasty. Identified studies were reviewed to identify eligible studies. Studies were included if they compared perioperative anticoagulation with warfarin, aspirin and/or heparin with regards to rates of infection in those with hip or knee arthroplasty.

Results: 9 articles including 188,399 patients met the inclusion criteria for the meta-analyses. Meta-analysis showed that warfarin prophylaxis is associated with a higher risk of deep infection as compared to aspirin (primary and revision TKAs combined) with an estimated OR 1.929 (95% CI 1.20-3.11, P=0.007). Similarly, warfarin prophylaxis is associated with a higher risk of overall infection as compared to aspirin (primary and revision TKAs combined) with an estimated OR 1.610 (95% CI 1.028 – 2.522, P = 0.038). There was no statistically significant difference in the estimated rates of infection between warfarin and LMWH and between LMWH and aspirin (Table 3). Meta-analysis of the studies included in the infection analysis and which reported on VTE rates, showed that warfarin prophylaxis is associated with a higher risk of PE as compared to aspirin (primary and revision TKAs combined) with an estimated OR 1.340 (95% CI 0.97 – 1.83), Furthermore, warfarin prophylaxis is associated with a higher risk of overall VTE as compared to aspirin (primary and revision TKAs combined) with an estimated OR 1.340 (95% CI 0.97 – 1.83).

Conclusions: Warfarin is associated with a higher infection rate compared to aspirin but with an equivalent or less VTE rate. This needs to be considered when choosing the agent for DVT prophylaxis and when comparing infection rates amongst different providers.