DVT Prophylaxis for Hip Fractures: Is Aspirin Enough?
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Purpose: Deep vein thrombosis (DVT) and pulmonary embolus (PE) are known complications in patients undergoing hip fracture surgery. Following total joint arthroplasty, aspirin has been shown to have similar rates of venous thromboembolism (VTE) and a better safety profile compared to other anticoagulation agents; however, a similar study has not been reported for hip fractures. The purpose of this study was to (1) compare the rates of DVT and PE and (2) compare the overall complication rates of aspirin, warfarin, and low molecular-weight heparin (LMWH) in patients undergoing operative fixation of hip fractures.

Methods: Patients who had hip fracture surgery from 2007 to 2016 and were prescribed aspirin, warfarin, or LMWH postoperatively were identified in the PearlDiver database using ICD-9, CPT, and National Drug codes. Patients were excluded if they had a preoperative diagnosis that has been shown in prior studies to increase rates of DVT and PE or if their fracture was pathologic or periprosthetic. The primary outcome measures were rates of DVT and PE. To evaluate for confounding factors, comparisons of preoperative comorbidities among all 3 groups were made. A bivariate chi-square analysis was used to identify statistically significant associations (0.05 for all analyses) between anticoagulation choice and postoperative complications.

Results: From 2007 to 2016, 7139 procedures were identified. In our cohort, 3544 patients (49.7%) were prescribed warfarin, 3241 (45.4%) LMWH, and 354 (5.0%) aspirin. The median Charlson Comorbidity Index was 3.17 for aspirin patients, 2.38 for LMWH patients, and 2.88 for warfarin patients. Patients prescribed aspirin had similar rates of DVT (3.1% vs 3.7%, P = 0.10) and PE (0.8% vs 1.8%, P = 0.28) compared to those prescribed LMWH. Patients on aspirin had lower rates of DVT (3.1% vs 9.8%, P <0.01) and PE (0.8% vs 6.2%, P <0.01) compared to those prescribed warfarin. Patients in all 3 groups had similar rates of total complications (warfarin 13.1% vs LMWH 14.1% vs aspirin 13.6%, P = 0.19).

Conclusion: In patients undergoing operative fixation for hip fractures, patients prescribed aspirin as chemoprophylaxis had similar incidence of DVT and PE compared to those prescribed LMWH and a lower incidence compared to those prescribed warfarin with similar rates of total complications when compared those on warfarin or LMWH. Aspirin may be a safe and effective choice for chemoprophylaxis in patients undergoing operative fixation of hip fractures.