Timely Hip Fracture Surgery in Adult Patients Receiving Pre-Injury Anticoagulation: A Prospective Study

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Purpose: Hip fracture incidence is increasing to where up to 40% of patients are receiving pre-injury oral anticoagulation (OAC). This can result in delayed time to surgery (TTS), resulting in increased complications and mortality. The aim of this study was to measure residual preoperative OAC levels to determine if early TTS was associated with increased complications.

Methods: This is a subgroup analysis of a prospective cohort of hip fracture patients requiring urgent surgery, over 50 years of age. Residual preoperative OAC (pOAC) levels were analyzed upon admission and preoperatively if TTS was ≥24 hours (STA Compact Max, Stago) and described relative to time from last dose. Participants were dichotomized into those with and without elevated pOAC level. Renal function, adverse events, prothrombin time, and blood transfusions were collected. Hemoglobin drops from hospital admission to postoperative day 1 (POD1) were compared. t-tests, Mann-Whitney U, and Fisher exact tests were used, as appropriate.

Results: 95 eligible patients without pre-injury OAC use (mean age = 75.95 (±11.6) years; 69.5% female) and 11 patients receiving Apixaban were included (mean age = 85.57 (±8.7) years; 71.4% female), with 9 having normal renal function. There was no difference in sex distribution between those receiving OAC or not, but those receiving OAC were significantly older (P = 0.029). The mean time from last dose to preoperative blood draw was 37.3 (±31.0) hours and mean residual pOAC level was above the normal reference range (0-23 ng/mL) at 54.3 (±46.7) ng/mL. There was no difference in prothrombin level between those with elevated pOAC level and those without. There was no significant difference in hemoglobin drop between those receiving OAC (n = 7; 12.1 ± 14.8 g/L) and those not (20.3 ± 18.4g/L; P = 0.14). There was no significant difference in transfusion rates within 48 hours of surgery between groups (P = 1.0). There were no cardiac, pulmonary, or thrombosis-related adverse events within the 3-month follow-up for those on OAC.

Conclusion: This study supports that patients with normal preoperative renal function who underwent surgery within 48 hours from their last OAC dose did not experience additional adverse bleeding events.