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Falls and Traumatic Brain Injury in the Elderly on Aspirin or Anticoagulant Therapy

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SI/CTR Abstract

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Introduction: Traumatic brain injury (TBI) after a fall in individuals aged 65 and older is a leading cause of morbidity and mortality, but the effect of aspirin and anticoagulant therapy on TBI severity is not fully understood. This study evaluated whether the severity of TBI is associated with use of aspirin or anticoagulant therapy or in combination.

Methods: Using retrospective chart review, we identified patients age 65 or older who fell and sustained head trauma that were admitted to Thomas Jefferson University Hospital trauma service from 2017-2018. Based on final diagnosis, patients were classified into three groups of TBI in order of increasing severity: mild TBI, extra-axial hemorrhage, and intra-axial hemorrhage. ANOVA and regression analysis will be used to compare use of aspirin, anticoagulant therapy, both in combination, or neither in the three groups.

Results: We hypothesize that patients with more severe head trauma will have increased use of aspirin or anticoagulant therapy or both in combination compared to patients who are on neither aspirin nor anticoagulant therapy. Preliminary results show patients with any diagnosis of TBI were more likely to be on aspirin compared to controls (OR 1.74, $p<0.001$). Patients with any diagnosis of TBI and anticoagulant

therapy had no statistical significant association compared to controls (OR 1.25, p=0.25).

Discussion: These findings will guide the understanding of how aspirin and anticoagulant therapy affect severity of TBI. Judicious use of aspirin and anticoagulant therapy in the elderly who are at risk of falling may reduce the incidence of severe TBI.