

Outcomes in Hip Fracture Surgery in Patients Receiving Direct Oral Anticoagulation: Should We Delay?

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INTRODUCTION:

Hip fractures pose a significant public health burden, with admissions for hip fractures each year expected to increase to 650,000 admissions per year by 2050. Delays in patients undergoing hip fracture surgery is extremely dangerous, associated with a more than doubling of mortality risk. As the ageing population continues to grow, so too does the number of medically complex patients suffering from these injuries, including an increasing population of patients on direct oral anticoagulation (DOAC) medications. Protocols for time to surgery for hip fracture patients on DOACs have been used to protect this population, however these discontinuation guidelines are based upon recommendations developed for elective surgeries. No nationally standardized guidelines for DOAC discontinuation prior to emergent operations exist, leading to frequent delays to hip fracture surgery in patients on DOACs. The purpose of this study is to address gaps in the literature by comparing outcomes in patients on DOACs treated within 48 hours of last dose to those with surgical delays >48 hours.

METHODS: Retrospective review of 50+ year old patients on DOACs treated for hip fracture at three level 1 trauma centers between 2010-2018 was performed. Descriptive and inferential statistics were used to analyze results. Patient charts were evaluated to confirm delay in surgery due to DOAC, with delays for other reasons excluded.

RESULTS:

A total of 221 patients were included. Seventy-four patients (33%) had surgery <48 hours following final DOAC dose; 147 patients (66%) had surgery >48 hours after. Both cohorts were similar in age, gender distribution, and Charlson Comorbidity Index (CCI), with an average age of 81.5 years (SD±8.8), 66% female population, and CCI of 6.4 (SD±2.1) for the <48 hour cohort and 79.7 years (SD±9.9), 61% female population, and CCI of 6.3 (SD±2.5) for the >48 hour cohort.

The mean surgical delay time attributed to anticoagulation was 45.6 hours greater than patients with no delay (76.9 hours vs. 31.3 hours; $p < 0.0001$). Patients treated after 48 hours were more likely to require transfusion (OR 3.32, 95%CI [1.61-6.85]). Patients treated within 48 hours had significantly shorter lengths of stay (5.9 days vs. 7.8 days, $p=0.002$). There was no difference in estimated blood loss, anemia, complications, reoperations, readmissions, 90-day mortality, or 1-year mortality (Figure 1).

DISCUSSION AND CONCLUSION:

Hip fracture patients who received surgery within 48 hours of their last DOAC dose experience comparable mortality and complication rates and require fewer transfusions than those who wait for surgery. Additionally, they experience significantly shorter lengths of stay. Previous studies show delays to hip fracture surgery >48 hours are associated with increased mortality. Providers should consider early intervention in this population rather than adherence to elective procedure

DOAC

discontinuation

guidelines.

