

The Impact of Anticoagulant Medications on Fragility Femur Fracture Care: A Multicenter Prospective Cohort Study of 10,197 Patients

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Purpose: Due to their hypocoagulable state on presentation, anticoagulated patients with femoral fragility fractures typically experience delays to surgery. There are no large, multicenter studies previously carried out evaluating the impact of anticoagulant use in this patient population. This study aimed to evaluate the current epidemiology and compare the perioperative management of anticoagulated and non-anticoagulated femoral fragility fracture patients.

Methods: Data were prospectively collected through a collaborative, multicenter approach involving hospitals across the United Kingdom. Femoral fragility fracture patients aged ≥ 60 years and admitted to hospital between May 1 and July 31, 2023 were included. Main outcomes under investigation included time to surgery, receipt of blood transfusion, length of stay, and 30-day mortality. These were assessed using a combination of multivariable linear and logistic regression, and Cox proportional hazards models.

Results: Data on 10,197 patients from 78 hospitals were analyzed. 18.5% of patients were taking anticoagulants. Compared to non-anticoagulated patients, time to surgery was relatively longer by 7.59 hours (95% confidence interval [CI] 4.83-10.36; $P < 0.001$). 42.41% of anticoagulated patients received surgery within 36 hours (adjusted odds ratio 0.54, 95% CI 0.48-0.60, $P < 0.001$). Time to surgery between patient groups varied between units. There was very low correlation between estimated glomerular filtration rate level on admission and time to surgery in anticoagulated patients taking direct oral anticoagulants (DOACs) (Spearman's rank correlation coefficient $\rho = -0.045$; $P = 0.073$). There were no differences in blood transfusion and length of stay between groups (adjusted odds ratio 1.03, 95% CI 0.88-1.22, $P = 0.646$ and 0.22 days, 95% CI -0.44 to 0.89; $P = 0.887$, respectively). Adjusted mortality within 30 days of admission and across the entire study period was higher in anticoagulated patients (hazard ratio 1.27, 95% CI 1.03-1.57, $P = 0.026$ and 1.294, 95% CI 1.066-1.570, $P = 0.009$, respectively).

Conclusion: Approximately one in five femoral fragility fracture patients currently take an anticoagulant medication. These patients experience relatively longer delays to surgery with less than half receiving surgery within 36 hours of admission. This may have resulted in their comparatively higher mortality rate. Development of a national guideline on the management of this growing patient group emphasizing the need for equal priority and access to surgery is likely to help standardize practice in this area and improve outcomes.