Delayed Surgery for Anticoagulated Patients With Hip Fractures is Associated With Increased Coagulopathy and Complications

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Purpose: The incidence of elderly patients receiving oral anticoagulation (OAC) therapy at the time of a hip fracture is increasing. This can result in delayed time-to-surgery (TTS) despite evidence supporting timely surgery for anticoagulated patients with normal renal function. This study aimed to compare coagulopathy, complications, and mortality among patients with hip fracture who are anticoagulated with those who are not.

Methods: This is an a priori planned secondary analysis of a single-center prospective cohort of patients with hip fracture who were either receiving pre-injury OAC or not. Complications, including venous thromboembolism (VTE) events, cardiovascular events, pulmonary events, infectious complications, and 90-day mortality were captured. All patients underwent thrombelastography (TEG6s) analysis preoperatively. $\chi 2$, Mann-Whitney U, and independent samples t-tests were used to compare between groups.

Results: In total, 338 patients with hip fracture were included, with 52 receiving pre-injury OAC (15.4%). Those who were receiving pre-injury OAC were significantly older compared to those who were not (84.9 ± 8.5 years vs 77.0 ± 11.2 years; $p<0.001$). TTS was significantly delayed for the OAC group compared to those not receiving OAC (median: 44.2 hours [IQR: 24–48 hours] vs median: 24.5 hours [IQR: 18.8–36.3 hours]; $p<0.001$). The OAC group had significantly more cardiovascular and infectious-related complications ($p = 0.002$ and $p<0.001$, respectively), and they were significantly more hypercoagulable based on decreased k-time ($p = 0.001$), increased alpha-angle ($p = 0.001$), and increased maximal amplitude ($p = 0.027$) on preoperative TEG analysis. There was no difference in VTE between those receiving OAC and those not (3.8% vs 3.5%; $p<0.05$) or transfusion rate in those receiving OAC and in those not (15.7% vs 17.5%; $p = 1.0$). The 90-day mortality rate in the OAC group was higher (7.7% vs 2.1%), but was not statistically significant ($p = 0.055$).

Conclusion: Safe and timely surgery for anticoagulated patients with hip fracture is a global health priority. This study found that patients receiving pre-injury OAC had delayed TTS, contributing to increased coagulopathy, cardiovascular-, and infectious-related complications. Therefore, early TTS for anticoagulated patients with hip fracture remains an important benchmark to reduce morbidity and mortality.

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