Effect of Preoperative Rivaroxaban Use on the Treatment of Femur Fractures for Geriatric Patients

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Purpose: With an increasing geriatric population, the number of patients being treated with novel oral anticoagulants (NOACs) at the time of a geriatric femur fracture is likely to increase. The influence of NOAC usage on operative treatment of femur fractures is not well studied. The objective of this study is to evaluate the effect of preoperative NOAC usage on time to operative treatment (TOT) for geriatric femur fractures and the rate of postoperative complications and transfusion rates associated with NOAC usage.

Methods: CPT codes were used to identify all patients 65 years and older undergoing operative treatment of a femur fracture (OTA/AO 31A-C) over a 4-year period at a university-based hospital. Chart review identified patients taking warfarin, clopidogrel, or rivaroxaban at the time of injury. A control group of patients not anticoagulated were also identified. Demographic data, TOT, transfusion rate, admission hemoglobin/hematocrit (hgb/hct), length of stay (LOS), and 30-day mortality were obtained.

Results: Table 1 details data points for each group. **Analysis of variance revealed a significant difference only for TOT between the warfarin group and the control group of 6.8 hours, P <0.05, SD 2.35 (95% confidence interval, 2.12-11.41).

Conclusion: Our data suggest that patients anticoagulated with rivaroxaban at the time of fracture did not experience significant delays to operative treatment compared to the control group. Rivaroxaban does not seem to confer a heightened 30-day mortality risk or extended LOS in this small cohort. The rivaroxaban group also was found to undergo transfusion of packed red blood cells at twice the rate of the control group.

	Control (n=97)	Warfarin (n=49)	Plavix/ASA (n=29)	Rivaroxaban (n=10)
Ave Age (yrs)	83	87	84	81
Gender (M:F)	15:82	16:33	10:19	10:0
TOT (hrs)	21.4	28.2**	20.5	22.6
Transfusion rate	50.5 %	44.9%	58.6%	90%
Admit hgb/hct	12/37	12/36	11/35	11/34
LOS (days)	5.6	7.0	6.7	6.7
Mortality Rate	4.6%	20.4%	6.9%	0%