

**Short-Term Complications of Proximal Femur Fractures Treated Within 24 Hours**

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**Purpose:** Management of unstable proximal femur fractures in osteoporotic patients is a rising challenge in orthopaedic trauma. Treatment within 24 hours has been shown to decrease mortality and complications. Our objective was to determine the effect of a treatment within 24 hours despite oral anticoagulation in patients with proximal femur fractures treated with proximal femur nail. Furthermore, the effect of cement augmentation was investigated.

**Methods:** A retrospective chart review of 338 patients (mean age  $80 \pm 13$  years; 230 women and 108 men) with a sub- or intertrochanteric fracture between January 2012 and December 2017 was performed. Solely patients treated within 24 hours after admission were included. Augmentation was performed with Traumacem V+ Cement in 152 cases. Primary outcome measures were the transfusion rate and pre- and postoperative hemoglobin (Hb) difference. Secondary outcome measures were mortality, cut-out rate, and rate of complications like infection, hematoma, and acute cardiovascular events.

**Results:** Patients undergoing treatment with direct oral anticoagulants (DOACs) had a 3.8-fold increased risk for intraoperative blood transfusion. The risk for blood transfusion for patients taking other oral anticoagulants did not differ from the control group. Patients without an intraoperative blood transfusion on oral anticoagulation showed no increase in the pre- and postoperative Hb difference compared with controls. The risk for a vasoactive intervention was 3.6-fold higher for the cement augmented patients. Mean blood pressure change after augmentation was  $8 \pm 7,4$  mm Hg. Still, augmentation or treatment with oral anticoagulation showed no significant effect on complication rates or mortality in patients operated within the first 24 hours.

**Conclusion:** There was no increase in mortality or rate of complications in patients treated with oral anticoagulation when operated within the first 24 hours. Treatment with DOACs showed a higher risk for the need of a blood transfusion intraoperatively. Augmentation of the proximal femur nail antirotation proved to be a safe procedure. In osteoporotic patients treatment within 24 hours with a proximal femur nail with cement augmentation if needed and despite oral anticoagulation proved to be a safe procedure.