Association Between Mortality and Early Postoperative Mobilization After Distal Femur Fracture Fixation in Elderly Patients

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Purpose: This study sought to evaluate the impact of postoperative weightbearing (WB) status and early postoperative mobilization on 30-day and 1-year mortality in patients ≥65 years who underwent open reduction and internal fixation (ORIF) of distal femur (OTA/AO 33A, 33C) fractures (DFFs).

Methods: This is a multicenter retrospective review of all patients ≥65 years of age who underwent ORIF of isolated OTA/AO 33A or 33C fractures at 1 Level II and 2 Level I academic medical centers between 2012- 2023. Statistical analysis was performed to evaluate associations between mortality and postoperative WB status (weightbearing as tolerated [WBAT] vs limited WB), early postoperative mobilization, and the modified 5-factor frailty index (mFI-5). Early postoperative mobilization was defined as ambulation >5 feet within the first 3 postoperative days. A series of binary logistic regression analyses were conducted to identify factors associated with mortality and with postoperative mobilization, controlling for demographics. Pairwise deletion was used for missing data. An alpha level of P = 0.05 was used to determine significance.

Results: A total of 247 patients were included. Of 38 patients treated with intramedullary nails, 19 were permitted to be WBAT. Of the 190 patients treated with plates, 10 were permitted to be WBAT. Of 19 patients treated with nail-plate combinations, 9 were permitted to be WBAT. After adjusting for demographics and mFI-5 score, WBAT status was associated with achievement of early postoperative mobilization (P = 0.001, odds ratio [OR] = 4.735, 95% confidence interval [CI] 1.87-11.99). 30-day mortality occurred in only 6 patients (2.4%) and therefore analyses were not independently performed for this time point. After adjusting for demographics, mFI- 5 score, and permitted WBAT status, postoperative mobilization was not associated with survival at 1 year (P = 0.452). Increased mFI-5 score was associated with an increased 1-year mortality (P = 0.003, OR = 1.71, 95% CI 1.19-2.45).

Conclusion: Patients permitted to be WBAT were more likely to achieve early postoperative mobilization. However, early mobilization after fixation of DFF in elderly patients did not appear to correlate with 1-year mortality in this cohort.