

Early Functional Mobility Predicts Return to Baseline Function and Discharge Disposition After Distal Femur Fractures in the Elderly

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Purpose: Improving fixation constructs to allow for weightbearing after distal femur fractures has been a potential area of emphasis to reduce the morbidity and mortality associated with impaired mobility in the elderly. However, most studies evaluating the impact of weightbearing restrictions fail to account for overall functional mobility. The aim of this study was to identify predictors of return to baseline function and ambulatory status after operative fixation of distal femur fractures.

Methods: All patients >55 years old who underwent operative fixation of a distal femur fracture from 2013-2022 at a Level I trauma center were retrospectively reviewed. Early functional mobility was determined by inpatient physical therapists using the Activity Measure for Post-Acute Care (AMPAC) score. The first postoperative AMPAC score was categorized into groups: 6, 7-10, and >11. Pre-injury baseline and 90-day postoperative ambulatory status was scored as either independently ambulatory (0) or dependent on a cane/crutch (1), walker (2), or wheelchair (3). Patients who were non-ambulatory at baseline were excluded. Chi-squared and Fisher exact tests were used to compare groups and binary-logistic regression was performed to determine predictors of return to baseline functional status.

Results: 173 patients were included with an average follow-up of 1.31 years. All demographic variables, including preoperative ambulatory status, were similar between AMPAC score groups. AMPAC scores were not influenced by weightbearing restrictions and were similar between native and periprosthetic fractures. When controlling for demographics and injury characteristics, AMPAC score of 11+ was independently predictive of reaching pre-injury ambulatory status by 90 days (odds ratio [OR] 6.05, $P = 0.004$), of ambulating independently (OR 5.25, $P = 0.015$), and of discharge to a non-facility (OR 8.4, $P = 0.002$). Pre-injury ambulatory status was also independently predictive of return to pre-injury ambulatory status (OR 6.33, $P = 0.002$) and of ambulating independently (OR 13.3, $P = 0.002$).

Conclusion: Weightbearing restrictions after operative fixation of distal femur fractures does not impact early postoperative mobility. However, the importance of early functional mobility and preoperative ambulatory status cannot be underestimated as they are independently predictive of ambulatory independence and return to pre-injury baseline function by 90 days. The inpatient AMPAC score may help identify patients needing additional intervention postoperatively to improve functional outcomes, discharge disposition, and risks associated with prolonged immobility.