The Terrible 2s: Twice the Risk of Inpatient Complications in 2nd Geriatric Hip Fractures

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Purpose: Our objective was to characterize differences in baseline demographics, outcomes, and cost between 1st and 2nd (contralateral) hip fractures in the same patient that occur within 5 years of each other.

Methods: An IRB-approved retrospective review of operatively treated hip fractures was performed at an academic medical center from November, 2014 to May, 2023. Inclusion criteria were OTA 31A/B classification, age ≥65 years, and presence of second, contralateral hip fracture within 5 years of each other. Patients were analyzed based on the chronological order of their fracture–1st hip fracture cohort versus 2nd hip fracture cohort. Univariable comparison of patients' demographics, injury characteristics, surgical history, postoperative complications, 90-day readmission rates, 1 year mortality, discharge location, and direct inpatient hospitalization costs were compared using t-tests, $\chi 2$ tests, and analysis of variance tests. Major complications were defined as: sepsis, acute respiratory failure, myocardial infarction, stroke, pulmonary embolus, or death.

Results: A total of 78 patients' 1st hip fracture hospitalization was compared to their 2nd hip fracture hospitalization. Mean time to 2nd hip fracture was 589.9 ± 508.4 days and mean age was 84.2 ± 8.2 years old. At the time of the 2nd hip fracture, more patients were household ambulators (47% vs 26%, P = 0.012), assistive device users (87% vs 50%, P = 0.001), and trended toward being sicker (Charlson Comorbidity Index: 2.1 ± 1.9 vs 1.6 ± 1.6, P = 0.062; Score for Trauma Triage in the Geriatric and Middle Aged [STTGMA]: 2.4% ± 5.9% vs 1.2% ± 0.2.0%, P = 0.081). The 2nd hip fracture cohort had more major complications (21% vs 10%, P = 0.05) and trended toward more minor complications (58% vs 44%, P = 0.08). There were no other differences in outcomes and hospitalization cost.

Conclusion: Patients who sustain a 2nd contralateral hip fracture within 5 years of their first hip fracture have a 2x increase risk of major inpatient complications and mortality. There are otherwise comparable hospital quality measures and cost profile during their 2nd hip fracture hospitalization compared to their 1st hip fracture hospitalization. Resources should be allocated to minimize the risk of major inpatient complications in 2nd hip fracture patients.