

Protocol-Based Multidisciplinary Comanagement for Hip Fracture Care: 3 Years of Experience in an Academic Medical Center

Heather Roberts MD; Stephanie Rogers MD; Utku Kandemir MD; Derek Ward MD

University of California, San Francisco, San Francisco, CA, United States

Purpose: Multidisciplinary standardized protocols for care of patients with hip fractures have been shown to improve outcomes. A hip fracture protocol was implemented at our institution to standardize the treatment episode from emergency room to discharge focusing on emergency care, preoperative medical management, operative timing, and geriatrics comanagement. The aim of this study was to evaluate the impact of this protocol on time to surgery, hospital length of stay, and patient outcomes including readmission and mortality.

Methods: We conducted a retrospective review of adult patients admitted to a single tertiary care institution who underwent operative management of a hip fracture between June 2012 and January 2020. Comparison of patient characteristics, hospitalization characteristics, and outcomes were performed between patients admitted prior to and after initiation of the hip fracture protocol in September 2017.

Results: A total of 606 patients treated for hip fracture were identified, including 371 prior to and 235 after the initiation of the hip fracture protocol. Average age (74 ± 17 years), average Charlson Comorbidity Index (5.4 ± 2.9), and percent female gender (58.8%) did not vary significantly between groups. There was a significant reduction in time from admission to surgical management, from 41.6 ± 77.3 to 27.1 ± 29.9 hours ($P = 0.006$), and in length of hospital stay, from 7.9 ± 12.7 to 5.7 ± 4.4 days ($P = 0.01$). The percentage of patients whose surgeries were performed under spinal anesthesia increased from 11.3 to 20.4% ($P = 0.007$). More patients were admitted to the orthopaedics service (66.4% compared to 44.7%, $P < 0.001$) and were comanaged by the geriatrics service (69.4% compared to 0.8%, $P < 0.001$) after hip fracture protocol initiation. In-hospital mortality decreased from 2.7% to 0.9%, and no significant change was observed in readmission rate (16.8%), 90-day mortality (5.8%), or 1-year mortality (11.7%).

Conclusion: With implementation of a multidisciplinary hip fracture protocol, we observed a significant and sustained reduction in time from admission to surgical management, hospital length of stay, and in-patient mortality. This has implications to minimize health-care costs for our society and improve outcomes for our aging population.