

Early Outcomes and Lessons from the Implementation of a Geriatric Hip Fracture Protocol at a Level 1 Trauma Center

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Abstract : Introduction Hip fractures account for more than 300,000 hospital admissions every year. Many present as fragility fractures in geriatric patients with multiple medical comorbidities. Standardized protocols for the multidisciplinary management of this patient population have been shown to improve patient outcomes. A hip fracture protocol was implemented at a Level I Trauma center with a focus on pre-operative medical optimization and early surgical care. This study evaluates the efficacy of that protocol, including the early transition period. Methods A retrospective review was performed of all patients ages 60 and older with isolated hip fractures who were managed surgically between 2020 and 2022. This included patients 1 year prior and 1 year following the implementation of a hip fracture protocol at a Level I Trauma center. Results 530 patients were identified: 249 patients were treated before, and 281 patients were treated after the protocol was instituted. There was no difference in mean age ($p=0.35$), gender ($p=0.3$), or Charlson Comorbidity Index ($p=0.38$) between the cohorts. Following the implementation of the protocol, there were observed increases in time to surgery (27.5h vs. 33.8h, $p=0.01$), hospital length of stay (6.3d vs. 9.7d, $p<0.001$), and ED LOS (5.1h vs. 6.2h, $p<0.001$). There were no differences in in-hospital mortality (2.01% pre vs. 3.20% post, $p=0.39$) and complication rates (25% pre vs 26% post, $p=0.76$). A trend towards improved outcomes was seen after the early transition period but failed to yield statistical significance. Conclusion Early medical management and surgical intervention are key determining factors affecting outcomes following fragility hip fractures. The implementation of a hip fracture protocol at this institution has not yet significantly affected these parameters. This could in part be due to the restrictions placed at this institution during the COVID-19 pandemic. Despite this, the time to OR pre-and post-implementation was quicker than figures reported elsewhere in literature. Further longitudinal data will be collected to determine the final influence of this protocol. Significance/Clinical Relevance Given the increasing number of elderly people and the high morbidity and mortality associated with hip fractures in this population finding cost effective ways to improve outcomes in the management of these injuries has the potential to have enormous positive impact for both patients and hospital systems.

Keywords : hip fracture, geriatric, treatment algorithm, preoperative optimization

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