

Treatment and Health Services Outcomes in Older Patella Fracture Patients in Ontario, Canada: A Population-Based, Retrospective Cohort

*Gurrattan Chandhoke, MSc; David Wasserstein, MD; Paula Rochon, MD; Milena Vicente, RN; Emil H. Schemitsch, MD; Aaron Nauth, MD
St. Michael's Hospital, Toronto, ON, Canada*

Purpose: There remains a substantial lack of knowledge and evidence regarding treatment and health services outcomes following operative and nonoperative patellar fracture management in older patients. Factors predicting readmission and treatment length of stay (LOS) have not been previously reported. Additionally, reoperation rates for this patient subset have not been investigated. We conducted a retrospective study of patella fracture treatment outcomes in a large cohort of older patients using a provincial health database. The purpose of this study was to evaluate treatment and health services outcomes in older (≥ 66 years) patella fracture patients.

Methods: Data from the Canadian Institute for Health Information was used to identify patients ≥ 66 years who had sustained a patella fracture between April 1, 2004 and March 31, 2016, from a linkable dataset. Intervention codes from the Discharge Abstract Database (DAD) were used to categorize patients into operative and nonoperative groups at baseline. We identified rates of reoperation up to 2 years after initial treatment (including revision fixation, hardware removal, joint replacement, and irrigation and debridement). Ambulatory care reporting databases were used to identify frequency and cause of emergency department (ED) readmission within 30 days of treatment discharge, and DAD was used to identify treatment LOS. We used a Cox proportional hazard model followed by cumulative incidence analysis to evaluate the rate of reoperation. A multivariate logistic regression and multivariate linear regression were used to assess ED readmission and treatment LOS, respectively.

Results: A total of 6258 patients were identified in the database, 72% of whom received nonoperative treatment at baseline. 74% of patients were female, and the average time to surgery was 7 days. Approximately 20% of operatively treated patients underwent reoperation, mostly related to hardware removal within 2 years of initial treatment. ED readmission was high (15.2%), but generally unrelated to the patella fracture. Falls represented 11% of readmissions, with the majority of cases presenting in the nonoperative group. Male sex, rural residence, and baseline dementia were all significant predictors of ED readmission. Furthermore, treatment LOS following operative management averaged 7 days. Finally, net costs were higher following operative intervention, despite the nonoperative group having higher baseline costs.

Conclusion: Our study revealed that most older patella fracture patients are treated nonoperatively. In those treated operatively, there are high rates of reoperation. ED readmissions are also common in this population, but generally unrelated to the patella fracture. These results suggest that managing patella fractures in older patients is complex, and complications are prominent. Further investigation with prospective studies is warranted.