Identifying Risk Factors for 30-Day Readmission After Hip Fracture Surgery

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INTRODUCTION: Hip fractures often lead to significant morbidity and mortality, with early readmissions posing considerable challenges. We aimed to identify demographic, clinical, and socioeconomic predictors of 30-day hospital readmission, including whether community-based care confers elevated risk relative to academic centers.

METHODS: We retrospectively analyzed 5,550 adults who underwent hip fracture surgery between 2013 and 2024 in a single health system. Characteristics included age, sex, race, comorbidities (e.g., myocardial infarction, renal disease), ASA classification, hospital type, discharge disposition, insurance status, and socioeconomic indices (Area Deprivation Index [ADI], Social Vulnerability Index [SVI]). Univariate logistic regression identified significant predictors at $p<0.05$. Two separate Bayesian multivariate models incorporated either ADI or SVI to avoid collinearity, adjusting for key covariates.

RESULTS:

Overall, 602 patients (10.8%) were readmitted within 30 days. Univariate analysis revealed that older age, higher ASA classification, myocardial infarction, renal disease, metastatic cancer, inactive patient portals, and facility-based discharge correlated with elevated readmission risk. Notably, although community hospitals accounted for 48% of all patients, they represented 68% of readmissions. In both ADI and SVI models, receiving care at community-based hospitals emerged as a strong predictor of readmission (OR range 2.44–2.81), alongside inactivated patient portals (OR range 2.06–2.16), while discharge home was protective (OR ~0.22). Renal disease and higher ADI quartiles also significantly increased readmission likelihood.

DISCUSSION AND CONCLUSION: Our findings suggest that hospital setting, discharge destination, patient portal usage, and certain comorbidities play critical roles in 30-day readmissions following hip fracture surgery. Future efforts should focus on targeted interventions encompassing patient engagement, comorbidity optimization, and refined discharge planning to improve outcomes in this vulnerable population. Reinforcing communication between hospital teams and community providers may be beneficial.