



What Are Predictors of Hospice Discharge with 30-Day Mortality After Surgical Fixation of Hip Fractures?

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¹Department of Orthopaedics, Johns Hopkins University School of Medicine, Baltimore, MD, USA
²Orthopaedic Surgery Residency, Philadelphia College of Osteopathic Medicine, Philadelphia, PA, USA

Introduction

- Even with perioperative management of comorbidities involving a multi-disciplinary approach, hip fractures in the elderly are associated with significant morbidity and mortality¹
- Hospice care has been shown to substantially decrease restricting symptoms and even prolong life²
- However, there are few studies assessing discharge to hospice following surgery for hip fractures
- The aims of this study were to determine the proportion of hip fracture patients discharged to hospice, the 30-day mortality rates of such hospice patients, and independent predictors of discharge to hospice with 30-day mortality following hip fracture surgery

Materials and Methods

- A retrospective cohort study utilizing the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) was queried for all hip fractures surgeries between the years of 2016 and 2018
- Variables assessed included patient demographics, comorbidities, perioperative characteristics, and postoperative outcomes
- Differences between hospice and non-hospice patients were compared using chi-squared analysis or Fisher's exact test for categorical variables and Student's *t*-tests for continuous variables
- A binary logistic regression model was used to assess independent predictors of hospice discharge with 30-day mortality

Results

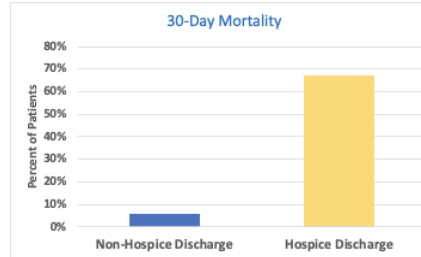


Figure 1: Percentages of 31,531 patients who experienced death within 30 days after hip fracture surgery, by discharge destination

Variable	OR (95% CI)	P-value
Age > 90	1.4 (1.0 – 2.0)	0.040
Body mass index*	0.96 (0.93 – 0.99)	0.008
Delay >48h from admission to surgery	1.5 (1.1 – 2.0)	0.021
>10% weight loss in last 6 months	2.6 (1.5 – 4.5)	<0.001
Preoperative wound infection	1.6 (0.94 – 2.7)	0.081
Partial dependence functional status	1.8 (1.2 – 2.5)	0.002
Total dependence functional status	3.8 (2.2 – 6.6)	<0.001
Liver disease with ascites	2.8 (0.94 – 8.1)	0.066
History of CHF	1.8 (1.1 – 3.0)	0.033
Disseminated cancer	6.1 (4.0 – 9.3)	<0.001
Preoperative albumin†	0.67 (0.51 – 0.88)	0.005
Preoperative cognitive deficit	2.0 (1.4 – 2.9)	<0.001
Full medical comanagement required	1.9 (1.1 – 3.1)	0.016
Institutional standardized care pathway	0.74 (0.54 – 1.0)	0.053
Preoperative sepsis	1.8 (1.2 – 2.6)	0.002

Table 1. Multivariate logistic regression for independent predictors of hospice discharge with 30-day mortality

OR, odds ratio; CI, confidence interval; CHF, congestive heart failure.
 *: odds ratio and confidence interval per each 1 kg/m² increase in body mass index
 †: odds ratio and confidence interval per each 1 g/L increase in serum albumin

- Overall, 31,531 operatively treated hip fractures were identified, of which 281 (0.9%) involved a discharge to hospice
- Patients discharged to hospice had a 67% 30-day mortality rate in comparison to 5.6% of patients not discharged to hospice (*p* < 0.001) (**Figure 1**)
- Variables most significantly independently associated with increased odds of hospice discharge with 30-day mortality included disseminated cancer, totally dependent functional status, >10% weight loss in the 6 months prior to surgery, preoperative cognitive deficit, and full medical comanagement (**Table 1**)
- Variables independently associated with decreased odds of hospice discharge with 30-day mortality were increasing preoperative albumin, increasing BMI, and implementation of an institutional standardized care pathway (**Table 1**)

Conclusions

- Overall rates of discharge to hospice in hip fracture patients are low but the 30-day mortality rate is high for patients that are discharged to hospice
- Disseminated cancer, dependent functional status, >10% weight loss over six months preoperatively, and preoperative cognitive deficit were the strongest predictors of hospice discharge with 30-day mortality following hip fracture surgery
- An awareness of these associations is important for surgeons to consider when discussing postoperative expectations and outcomes with these patients

References:

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