Mobilization After Hip Fractures on Day of Surgery Associated with Decreased Length of Stay: A Prospective Study

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Purpose: At present, there is limited evidence to guide the optimal timing, venue, or specific type of rehabilitation after hip fracture surgery. Furthermore, there is currently minimal literature quantifying the effects of immediate ambulation or mobilization of patients with these fractures. As efforts to improve treatment expands to include multidisciplinary teams, attention is focused on care processes that are easiest to modify and directly linked to outcomes. The purpose of this study is to determine if evaluation/treatment by physical therapy on the day of surgery impacts length of stay in elderly patients with intra- and extracapsular fractures of the hip.

Methods: Adult patients admitted for hip fracture requiring surgery were included over a 22-month period (May 2017- February 2019). Pathological fractures were excluded in this analysis. Multiple surgeons operated on hip fractures (n = 528) during this time period within one institution. A mobilization protocol was put into place to initiate mobilization of hip fracture patients on day of surgery with the nursing or therapy team. Patients were prospectively monitored thereafter.

Results: Of these 528 surgical cases, 259 (49.05%) were mobilized on day of surgery, while 269 did not mobilize with therapy on postoperative day 0). The median (interquartile range) length of stay of mobilized patients was 4.0 (3-6) days, versus 5.0 (4-6) days in the nonmobilized patients ($P = 0.0158$). The mobilized and nonmobilized cohorts were subcategorized based on their likelihood of discharging home versus a facility. Of the 259 mobilized on day of surgery, 64 (24.71%) were discharged home, versus 48 discharged home (17.84%) in nonmobilized cohort ($P = 0.0434$). Patients were followed postoperatively, with no statistically significant increased rates of readmission between the two cohorts ($P = 0.45$).

Conclusion: Mobilization on day of surgery is a safe method of intervention that reduced inpatient length of stay by 1 day, with a higher percentage of patients being discharged home as opposed to a rehabilitation facility.

Table 1. Summary of data by mobilization

	All Patients (n = 528)	Patients Mobilized		p-value
		Yes (n = 259)	No (n = 269)	
Age (years), mean ± sd	75.2 ± 14.6	75.0 ± 13.9	75.4 ± 15.2	0.77[a]
Length of Stay (days), median (IQR)	5 (3-6)	4 (3-6)	5 (4-6)	**0.02**[b]
ER to OR Time (hours), median (IQR)	19.2 (12.3-27.6)	18.6 (13-26.3)	19.4 (11.1-28.3)	0.80[b]
Patient Readmitted?, n (%)				0.58[c]
Yes	23 (4.4%)	10 (3.9%)	13 (4.8%)	
No	505 (95.6%)	249 (96.1%)	256 (95.2%)	
Disposition, n (%)				**0.04**[c]
Home	111 (21.0%)	64 (24.7%)	47 (17.4%)	
Other	417 (79.0%)	195 (75.3%)	222 (82.6%)	
Completed Nutrition Assessment, n (%)				0.36[c]
Yes	497 (94.1%)	241 (93.1%)	256 (95.2%)	
No	26 (4.9%)	15 (5.8%)	11 (4.1%)	
Missing	5 (1.0%)	3 (1.2%)	2 (0.7%)	

[a] Comparison made using Student's t-test. [b] Comparison made using Wilcoxon Mann-Whitney test.
[c] Comparison made using Chi-Square test.

Table 2. Summary of Logistic and Poisson Regression for Readmission

Predictor	OR (95% CI)	p-value
Age (years)	1.02 (0.99-1.05)	0.2839
Patient Mobilized (Yes vs No)	1.05 (0.44-2.49)	0.58

Table 3. Summary of Poisson Regression for Length of Stay

Predictor	Estimate (95% CI)	p-value
Patient Mobilized (Yes)	1.5 (1.23-1.76)	<0.01
Age (years)	0 (0-0.01)	0.21