The 'Weekend Effect' and Total Hip Arthroplasty: Higher Risk of Readmission for Patients Admitted on Fridays

Introduction

Total hip arthroplasty (THA) is an extremely common procedure aimed at reducing pain and returning normal function to patients with degenerative hip damage. However, there may be differences in postoperative care on a weekend following a Friday elective surgery due to reduced access to in-hospital care providers and discharge-planning resources. This study aims to examine these differences.

Methods

We performed a retrospective analysis of the PINC AI Healthcare Database (2016-2022) of elective, primary THA patients spending >1 night in the hospital. We defined two cohorts: Friday surgery vs Monday-Thursday surgery. We compared index facility cost, CMS-defined complications, and 90-day readmission in univariate and multivariable regression analyses adjusted for patient and facility characteristics.

Results

We included 191,045 patients, 19,515 (10.2%) having Friday surgery. Friday patients were younger (67.65 vs 68.09, $p<0.001$), less white (85% vs 86%, $p<0.001$), less female (61% vs 62%, $p=0.004$), had greater LOS (2.86 days vs 2.70, $p<0.001$), and less Medicare (62% vs 64%, $p<0.001$). Institutions performing Friday THA were more urban (92% vs 90%, $p<0.001$), more teaching hospitals (50% vs 45%), and more likely to have >99 beds (92% vs 91%, $p<0.001$). Univariate analysis showed no difference in complications ($p=0.76$), however Friday patients had more 90-day readmission (3.56% vs

3.46% p=0.026) and greater facility cost ($17871.83 vs $17251.41, p<0.001). Multivariable analysis revealed no increased risk for Friday patients for complications (p=0.92), but increased risk for 90-day readmission (OR 1.10, 95% CI: 1.01-1.20, p=0.02) and greater facility cost (95% CI: 289.14-692.44, p<0.001).

Conclusion

We identify a 'weekend effect' in THA, in which patients admitted on Friday have modestly higher risk of 90-day readmission and higher facility index costs. Future work should explore strategies to mitigate the impact of weekend-related variation in postoperative care.

Table 1. Demographics and Characteristics by Procedure Date in Individuals Undergoing Primary Total Hip Arthroplasty (N=191,045)			
Variable	**Friday (N = 19,515)**	**Non-Friday (N = 171,530)**	**p-value**
Age in years (Mean ± SE)	67.65 (0.08)	68.09 (0.03)	<0.001
Elixhauser Comorbidity Index (Mean ± SE)	2.20 (0.01)	2.19 (0.00)	0.60
Sex			0.004
Female	11905 (0.61)	106435 (0.62)	
Male	7610 (0.39)	65095 (0.38)	
Race			<0.001
Asian	180 (0.01)	1166 (0.01)	
Black	1916 (0.1)	17195 (0.1)	
Other	796 (0.04)	5300 (0.03)	
White	16623 (0.85)	147869 (0.86)	
Ethnicity			<0.001
Hispanic	716 (0.04)	5086 (0.03)	
Non-Hispanic	18799 (0.96)	166444 (0.97)	
Payer			<0.001
Medicaid	1054 (0.05)	8318 (0.05)	
Medicare	12108 (0.62)	110478 (0.64)	
Other	491 (0.03)	4448 (0.03)	
Private	5743 (0.29)	47561 (0.28)	
Uninsured	119 (0.01)	725 (0.00)	
Urban/Rural Hospital			<0.001
Urban	17914 (0.92)	153914 (0.90)	
Rural	1601 (0.08)	17616 (0.1)	
Teaching Hospital			<0.001
No	9749 (0.5)	95087 (0.55)	
Yes	9766 (0.5)	76443 (0.45)	

Beds Within Hospital			<0.001
0-99	1595 (0.08)	14794 (0.09)	
100-199	3364 (0.17)	30979 (0.18)	
200-299	3705 (0.19)	34488 (0.2)	
300-399	3687 (0.19)	27397 (0.16)	
400-499	2313 (0.12)	20791 (0.12)	
500+	4851 (0.25)	43081 (0.25)	
Region			<0.001
Northeast	4096 (0.21)	31559 (0.18)	
Midwest	4970 (0.25)	43138 (0.25)	
South	7220 (0.37)	72624 (0.42)	
West	3229 (0.17)	24209 (0.14)	
Column data reported as number of patients (%) or mean ± standard error (SE)			