Hospital Exposure Prior to Total Hip Arthroplasty: Are Perioperative Outcomes Impacted?

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INTRODUCTION: As demand for total hip arthroplasty (THA) continues to grow, identifying risk factors for poor perioperative outcomes is paramount to patient wellness. Lack of preoperative hospital exposure may represent an important predictor of postoperative success. Therefore, the aim of the present study was to determine the risk of adverse outcomes following THA after a preoperative healthcare event (PHE).

METHODS:

This was a single institution retrospective review of all patients who underwent primary THA from September 2011 to April 2022. Patients were stratified based on whether they had a PHE or not. PHEs were defined as an emergency department visit or hospital admission within 90 days of surgery. Any patient who underwent staged or same day bilateral THA, revision THA, and non-elective THA was excluded. Significant differences in demographic differences were determined using chi-squared analysis and independent samples t-tests. Binary logistic regression was fit for discharge disposition, 30-and 90-day readmission, and 1 year revision while controlling for all significant covariates.

RESULTS:

We identified a total of 11,598 patients status post THA, of whom 273 had a PHE. PHE patients were significantly more likely to require facility discharge (odds ratio [OR]: 2.490; p<0.001) than patients who did not have a PHE. Additionally, any PHE predisposed patients to significantly higher 30-day (OR: 1.992; p=0.013) and 90-day (OR: 2.387; p<0.001) readmission rates. Patients with 2 or greater PHEs were at an even greater risk of facility discharge (OR: 3.679; p=0.001), readmission within 30 days (OR: 4.204; p=0.009), and readmission within 90 days (OR: 7.965; p<0.001).

DISCUSSION AND CONCLUSION:

Patients who undergo THA after having a PHE are at significantly higher risk of facility discharge and readmission within 30 and 90 days following surgery. A temporary recovery period following PHE and prior to THA may lead to better postoperative outcomes.

Table 2. Impact of PHEs on Perioperative Outcomes

	Standard Error	P-Value	Odds Ratio	Confidence Interval
Facility Discharge				
Any PHE	0.147	<0.001	2.490	1.865 to 3.324
≥ 2 Events	0.392	0.001	3.679	1.707 to 7.927
30-Day Readmission				
Any PHE	0.278	0.013	1.992	1.154 to 3.439
≥ 2 Events	0.546	0.009	4.204	1.442 to 12.257
90-Day Readmission				
Any PHE	0.208	<0.001	2.387	1.588 to 3.586
≥ 2 Events	0.392	<0.001	7.965	3.694 to 17.176
1 Year Revision				
Any PHE	0.369	0.549	1.247	0.605 to 2.571
≥ 2 Events	1.022	0.866	1.189	0.160 to 8.821

Table 1. Demographics

	No PHE (n=11325)	Any PHE (n=273)	P-Value
Sex			0.315
Male	4923 (43.5%)	127 (46.5%)	
Female	6402 (56.5%)	146 (53.5%)	
Age (years, ± SD)	64.20 ± 11.79	65.96 ± 13.20	0.030
Smoking Status			0.015
Never Smoker	5978 (52.8%)	120 (44.0%)	
Former Smoker	4359 (38.5%)	125 (45.8%)	
Current Smoker	988 (8.7%)	28 (10.3%)	
Race			0.017
White	8522 (75.2%)	186 (68.1%)	
Black	1317 (11.6%)	45 (16.5%)	
Other	1486 (13.1%)	42 (15.4%)	
BMI (kg/m², ± SD)	29.04 ± 5.98	28.77 ± 6.10	0.459
CCI (± SD)	1.03 ± 1.67	2.00 ± 2.47	<0.001
Surgical Time (minutes, ± SD)	99.49 ± 33.52	112.57 ± 37.95	<0.001