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Preoperative Factors Related to Delayed Discharge after Total Knee Arthroplasty Removal from Inpatient-Only List

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Background

- The Centers for Medicare & Medicaid Services removed total knee arthroplasty (TKA) from the inpatient-only (IPO) list effective January of 2018
- Consequently, all TKAs were scheduled as outpatient (23-hour observation) without workflow modifications
- While previous studies have identified specific factors associated with successful outpatient TKAs, none have been described under these mandatory, non-selective circumstances[1-5]
- Specific aim: to examine the preoperative factors associated with delayed discharge following this policy change among a non-selected cohort, as published data in this area are lacking

Methods

- TKA patients admitted to any Baptist Health South Florida facility between January 01, 2018 and August 01, 2018 were retrospectively analyzed
- Patients were stratified into two groups based on hospital night stay:
  - ≤ 1 night (non-delayed discharge)
  - > 1 night (delayed discharge)
- The association between the following preoperative factors and delayed discharge were examined using 2-tailed *t*-tests for continuous data, and Pearson's chi-square or Fischer exact tests for categorical data
  - Age; gender; race/ethnicity; insurance type; preoperative education class attendance; anesthesia type; smoking; body mass index (BMI); diabetes; hypertension; cardiovascular diseases; chronic obstructive pulmonary disease (COPD); and kidney disease
- All analyses were conducted using SPSS (IBM, version 23.0)

Results

- 447 TKA patients were identified during the study period
  - 279 (62.4%) had a non-delayed discharge
  - 168 (37.6%) had a delayed discharge
- The following table presents the association between preoperative factors and delayed discharge among TKA patients originally scheduled as outpatient following TKA removal from IPO list

Variable	Nights ≤ 1 N = 279	Nights > 1 N = 168	P value
Age (years)	**69.9 (8.6)**	**71.5 (8.0)**	**0.033**
Gender			
Male	**124 (44.4%)**	**39 (23.2%)**	**<0.001**
Female	**155 (55.6%)**	**129 (76.8%)**	
Race/ethnicity			
Non-Hispanic White	107 (38.4%)	53 (31.5%)	0.348
Hispanic White	157 (56.3%)	105 (62.5%)	
Other or unknown	15 (5.4%)	10 (6.0%)	
Insurance type			0.185
Medicare HMO	97 (34.8%)	75 (44.6%)	
Medicare HCFA	107 (38.4%)	62 (36.9%)	
HMO	41 (14.7%)	15 (8.9%)	
PPO	20 (7.2%)	9 (5.4%)	
Other	14 (5.0%)	7 (4.2%)	
Preoperative education			0.782
Yes	61 (87.1%)	36 (83.7%)	
No	9 (12.9%)	7 (16.3%)	
Anesthesia type			0.111
General	60 (21.5%)	46 (27.4%)	
Spinal	79 (28.3%)	55 (32.7%)	
Spinal with MAC	135 (48.4%)	62 (36.9%)	
Other	5 (1.8%)	5 (3.0%)	
Smoking	29 (10.4%)	23 (13.7%)	0.291
BMI (kg/m^2)	30.8	31.2	0.464
Diabetes	33 (11.8%)	27 (16.1)	0.252
Hypertension	**109 (39.1%)**	**82 (48.8%)**	**0.049**
Cardiac disease	4 (1.4%)	3 (1.8%)	1.000
CHF	1 (0.4%)	1 (0.6%)	1.000
Stroke	2 (0.7%)	1 (0.6%)	1.000
COPD	**0 (0%)**	**4 (2.4%)**	**0.020**
Kidney disease (creatinine > 1.5)	2 (0.7%)	0 (0%)	

Main Findings:

- Delayed discharge was related to:
  - Older age
  - Female sex
  - Hypertension
  - COPD
- Post-hoc analyses revealed that patients with delayed discharge were more likely to be discharged to an institution (26.8% vs. 5.8%, p <0.001) than home (73.2% vs. 94.2%, p <0.001), suggesting social support may also play an important role

Conclusions

- Almost 40% of our population had a ≥ 2 night hospital stay despite being scheduled as outpatient
- Preoperative factors associated with delayed discharge included older age, female sex, hypertension, and COPD
- With the numbers of available for study, delayed discharge was not related to race/ethnicity, insurance type, preoperative education, anesthesia type, smoking, body mass index, diabetes, cardiovascular disease, or kidney disease
- The influence of social support warrants further investigation since discharge to an institution was prevalent in the delayed group
- **Limitations:**
  - Small sample size, with limited prevalence of certain conditions
  - Missing data on preoperative education class attendance

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