Regional Anesthesia Has Shorter Length of Stay for Total Knee Arthroplasty

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Total knee arthroplasty is among the most common surgical procedures performed in the United States. Prolonged admission length of stay (LOS) can become a burden to the patient and healthcare system. Moreover, it is associated with higher healthcare costs. This study sought to assess the relationship between regional anesthesia (RA) on admission LOS among patients who underwent primary total knee arthroplasty (TKA). METHODS:

A retrospective cohort study was performed using the National Surgical Quality Improvement Program (NSQIP) database of primary TKA occurring between 2012 and 2020. The primary exposure was anesthesia modality (RA versus general anesthesia [GA]). The primary outcome was surgical admission LOS. Potential confounders included basic demographics (age, sex, race, ethnicity), baseline health status (preoperative functional status, ASA classification, BMI, smoking, diabetes, chronic immunosuppression), and procedure characteristics (admission source, procedural setting, operative time, and wound classification). Univariate analyses were performed to assess for differences between cohorts. Multivariable regression analysis that adjusted for confounding was performed to identify risk of anesthesia modality on prolonged admission LOS.

RESULTS:

Over the study period, there were 200,500 cases of TKA, of which 8,523 (4.25%) received RA. Many patients in both cohorts had age 65-74 years, female sex, White race, non-Hispanic ethnicity, independent functional status, obesity, no smoking, no diabetes, no chronic immunosuppression, admission from home, and inpatient setting. In contrast, a higher proportion of patients who received RA versus GA had ASA class 2 versus 3, respectively. On multivariable regression analysis, patients who received RA versus GA had shorter (OR 0.98, 95% CI 0.97 to 0.99; p<0.001) LOS for TKA admission.

DISCUSSION AND CONCLUSION:

96 (40)

<0.001 0.875

Compared to patients who received GA, those who received RA for TKA had shorter surgical admission LOS. Further studies involving the identification of ideal candidates for RA may allow for expanded use and outcomes.

	Basisnel	Concrel	n velue !
	N = 8523	N = 191977	b mag
	(4.2509%)1	(95,749%)1	
Broup	(<0.001
18-54	747 (8.8%)	21,218 (11%)	
55-64	2,675 (31%)	58,764 (31%)	
65-74	3.220 (38%)	72,980 (38%)	
75-84	1,631 (19%)	34,695 (18%)	
85	250 (2.9%)	4,320 (2,3%)	
iex.			0.004
Female	5.124 (60%)	118.422 (62%)	
Male	3,399 (40%)	73,555 (38%)	
306	.,,		<0.001
Asian	140 (1.8%)	3,891 (2,2%)	
Black or African American	532 (7.0%)	18,541 (10%)	
Other	71 (0.9%)	1,804 (1,0%)	
White	6.871 (90%)	152,568 (86%)	
Ithnicity	-,,		< 0.001
Non-Hispanic	7.269 (85%)	163.144 (86%)	
Hispanic	329 (3.9%)	11,987 (6.3%)	
Unknown	921 (11%)	15 559 (8 2%)	
Junctional Status Prior to Surgery			< 0.001
Dependent	182 (2.1%)	2,586 (1.4%)	
Independent	8,315 (98%)	188,365 (99%)	
ASA Classification			< 0.001
1-No Disturb	166 (1.9%)	2.691 (1.4%)	
2-Mild Disturb	4,428 (52%)	85,874 (45%)	
3-Severe Disturb	3,779 (44%)	99,707 (52%)	
4/S-Life Threat/Moribund	144 (1.7%)	3,567 (1.9%)	
BMI Category			< 0.001
Normal	791 (9.3%)	16,177 (8.4%)	
Obese	5,395 (63%)	126,836 (66%)	
Overweight	2,257 (26%)	48,044 (25%)	
Underweight	80 (0.9%)	920 (0.5%)	
Smoking Status	573 (6.7%)	17,648 (9.2%)	<0.001
Diabetes			<0.001
No	7,117 (84%)	154,669 (81%)	
Insulin	350 (4.1%)	9,271 (4.8%)	
Non-Insulin	1,056 (12%)	28,037 (15%)	
mmunosuppressive Therapy	319 (3.7%)	7,306 (3.8%)	0.767
dmission Origin			0.345
Home	8,495 (100%)	191,120 (100%)	
Institution	24 (0.3%)	657 (0.3%)	
Missing	4	200	
Setting			<0.001
Inpatient	7,497 (88%)	172,980 (90%)	
Outpatient	1.026 (12%)	18,997 (9,9%)	