Impact of Acute Preoperative Narcotics on Hospital Readmission in Total Joint Arthroplasty Procedures

Introduction:

Preoperative opioid use has been associated with poorer surgical outcomes. This study seeks to provide information about the impact of acute narcotics use on readmission rates after total joint arthroplasty. To do so we looked at 30 and 90 day hospital readmission rates of patients with acute preoperative narcotics usage compared to patients not using narcotics.

Methods:

4137 patients who had either primary THA or TKA between 2010 and 2024 were analyzed retrospectively. Patients with short and long acting narcotics ordered within six weeks prior to surgery were recorded. Assessment was conducted with a logistic regression on rates of 30 day readmission and 90 day readmission controlling for age, race, BMI, initial hospital length of stay, arthroplasty procedure, smoking status, and narcotics usage status. A Cox proportional hazard ratio regression on days to readmission was run controlling for race, BMI, initial hospital length of stay, arthroplasty procedure, smoking status, and narcotics usage status.

Results:

The 30 day readmit logistic regression found significant association with age (OR:1.025;95% CI:1.008-1.043;P:0.0048), initial hospital length of stay (OR:1.078;95% CI: 1.011-1.144;P:0.0148), and short acting narcotics use (OR:1.698;95% CI:1.127-2.508;P:0.0093). 90 day readmit logistic regression found significant association with BMI (OR:1.043;95% CI:1.021-1.066;P:0.0001), and readmission before 30 days (OR:1.847;95% CI:1.094-2.988;P:0.0161), but did not find any significant association with narcotics use. A Cox regression assessing time to readmission found a significant association with short acting narcotics use (HR:1.463;95% CI:1.108-1.906;P:0.0059), initial hospital length of stay (HR:1.058;95% CI:1.014-1.095;P:0.0037), and BMI (HR:1.02;95% CI: 1.003-1.036;P:0.0165).

Conclusion:

Preoperative use of short-acting narcotics was independently associated with increased risk and earlier timing of hospital readmission following primary total hip or knee arthroplasty. These findings reinforce prior evidence that even limited preoperative opioid

exposure adversely affects postoperative recovery and highlight the importance of optimizing pain management and minimizing opioid use before elective arthroplasty.

Table 1: Multiple Logistic Regression Analysis of 30 and 90-Day Readmission Post initial Surgical Encounter

		30 Day Readmission			90 Day Readmission		
Variable		**Odds Ratio**	**95% CI**	**P Value**	**Odds Ratio**	**95% CI**	**P Value**
Age		**1.025**	**1.008 to 1.043**	**0.0048**	0.9886	0.9734 - 1.004	0.1477
Race*							
	Black	1.079	0.6581 - 1.706	0.7532	1.032	0.6749 - 1.541	0.8805
	Asian	1.062	0.2519 - 3.039	0.9219	1.466	0.4288 - 3.808	0.4811
	Other	1.032	0.5390 - 1.825	0.9198	0.7233	0.3599 - 1.318	0.3233
BMI		0.9941	0.9690 - 1.019	0.6479	**1.043**	**1.021 - 1.066**	**0.0001**
THA**		1.14	0.8063 - 1.606	0.4565	1.023	0.7384 - 1.413	0.8884
Hospital Length of Stay		**1.078**	**1.011 - 1.144**	**0.0148**	1.058	0.9882 - 1.122	0.0785
Current Smoking Status		0.8626	0.4592 - 1.509	0.6239	1.328	0.8167 - 2.087	0.2339
Narcotics Status***							
	Long + Short	2.081	0.1099 - 12.14	0.4982	1.286	0.06690 - 7.736	0.8184
	Short	**1.698**	**1.127 - 2.508**	**0.0093**	1.342	0.9045 - 1.953	0.133
Previous Readmission at 30 Days		-	-	-	**1.847**	**1.094 - 2.988**	**0.0161**

*Reference = White; **Reference = TKA; ***Reference = None

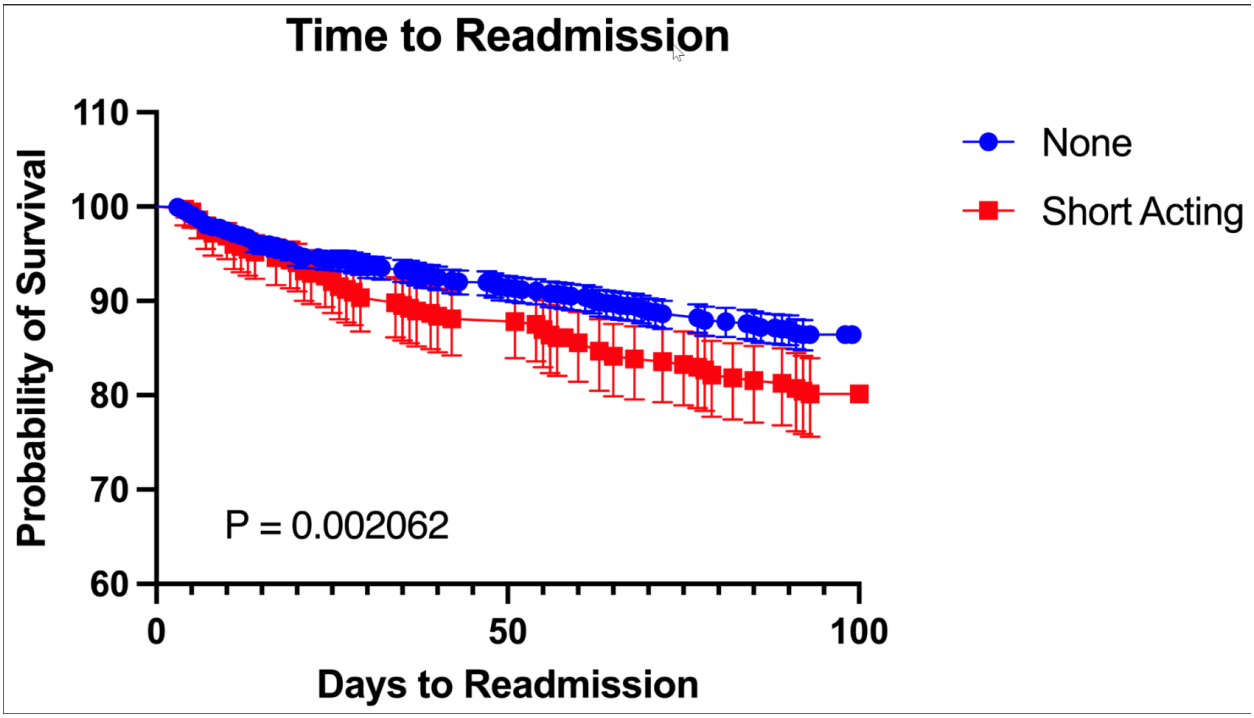

Figure 1: Kaplan-Meier survival curve