Evaluating the Effect of Meloxicam on Medical vs. Surgical Complication Rates in Chronically Anticoagulated Patients Following Total Hip and Knee Arthroplasty

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INTRODUCTION

- Non-steroidal anti-inflammatory drugs (NSAIDs) are often used for post-operative pain management in total join replacement.
- Concurrent use of NSAIDs and oral anticoagulants carries a risk of bleeding, wound complications, and other adverse events.
- Prior studies examined transfusion and readmission rates among chronically anticoagulated patients undergoing TKA w/ postoperative COX-2 inhibitors and found no evidence of increased risk
- Limited data surrounding NSAID/COX-2i use postoperatively regarding systemic medical complications (ex. GI bleeding, cardiac events, renal complications)

SPECIFIC AIMS

The purpose of this study is to evaluate both surgical and medical complications associated with use of postoperative meloxicam in chronically anticoagulated patients following elective TJA.

MATERIALS & METHODS

Design: Retrospective review of 5490 patients treated at CJRI between 1/1/2014 and 12/31/2025

Inclusion Criteria: Primary elective THA/TKA; documented prescription of anticoagulation 30 days prior to and following surgery; documented prescription of meloxicam or no NSAID prescription within 30 days of operation

Exclusion: revision arthroplasty; fracture/emergent procedures; pre-existing bleeding disorder or complication; chronic dialysis dependence

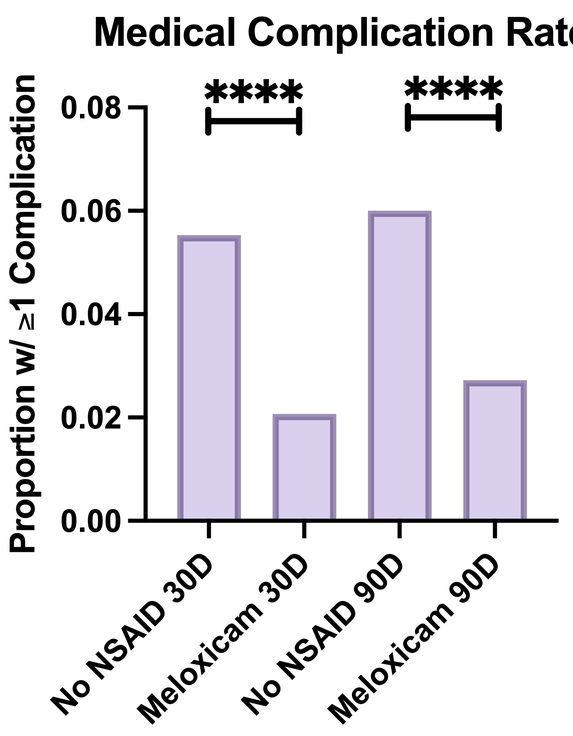
Analysis: Chi-squared and student's t-test for demographic information; chi-squared test for preliminary outcome comparison (α=0.05)

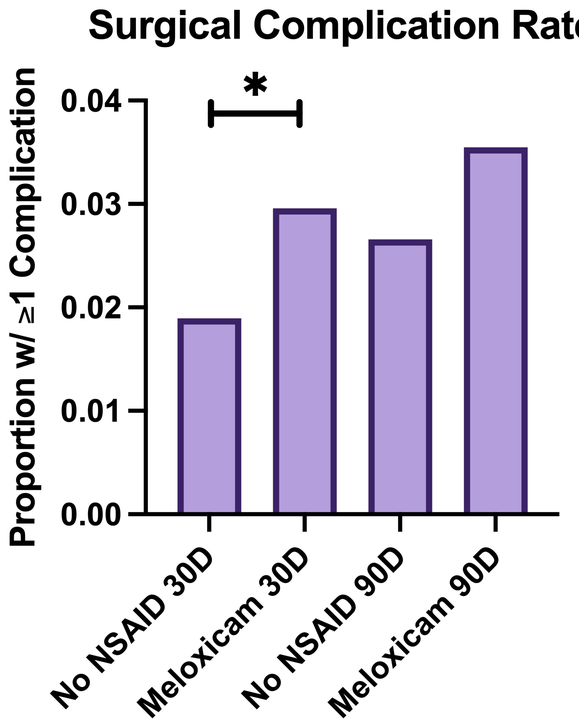
Outcomes:

Medical Complications	Surgical Complications
Acute MI	Wound Dehiscence
Cardiac Arrest	Dislocations
Cardiac Arrhythmia	Periprosthetic Fractures
CVA	Tendon Rupture
TIA	Hematoma
GI Hemorrhage	Mechanical Failure
Acute Renal Failure/ Kidney Injury	Periprosthetic Joint Infection
VTE	Surgical Site Infection
Dural Tear/CSF Leak	Vascular Complications
Dysphagia	Implant Malposition
Vocal Cord Paralysis	
UTI	
Neurologic Deficit	
Nerve Injury	
Pneumonia	
Pneumothorax	
Pressure Ulcer	
Post-op Urinary Retention	
In-House Mortality	

RESULTS

	No NSAIDs	Meloxicam	p-value
Mean Age	69.48	67.23	<.0001
Gender (M:F)	39.25:60.75	45.83:54.17	<.0001





Proportion of patients w/ ≥1 complication stratified by using post-operative meloxicam vs. no documented NSAID prescription.

Significant differences ($p<0.05$) denoted with an asterisk

RESULTS

Chi-squared comparison of 30 & 90-day complication rates.

- No NSAID N=3799
- Meloxicam N=1691

Medical Rates	No NSAID	Meloxicam	p-value/ϕ	Odds Ratio (95% CI)
30-day	0.055	0.021	p<0.0001 ϕ=0.08	0.36 (0.25-0.52)
90-day	0.060	0.027	p<0.0001 ϕ=0.07	0.44 (0.32-0.61)

Surgical Rates	No NSAID	Meloxicam	p-value/ϕ	Odds Ratio (95% CI)
30-day	0.019	0.030	p=0.0138 ϕ=0.03	1.58 (1.10-2.23)
90-day	0.027	0.035	p=0.0713 ϕ=0.02	1.35 (0.98-1.87)

Returns to ED, readmission, and returns to OR were excluded in preliminary analysis due to differences by individual in categorization as surgical or medical.

CONCLUSIONS

- Patients using meloxicam had a statistically significant reduction in medical complications at both 30 and 90 days
- Patients using meloxicam had a significant increase in surgical complications at only 30 days
- Limitations include differences in demographics as well as variation in severity of pre-existing disease (i.e., reason for anticoagulation)
- Low ϕ values suggest a very small effect size
- Next steps include parsing readmission and reoperation data as well as multivariate analysis to account for confounders

REFERENCES/CONTACT

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