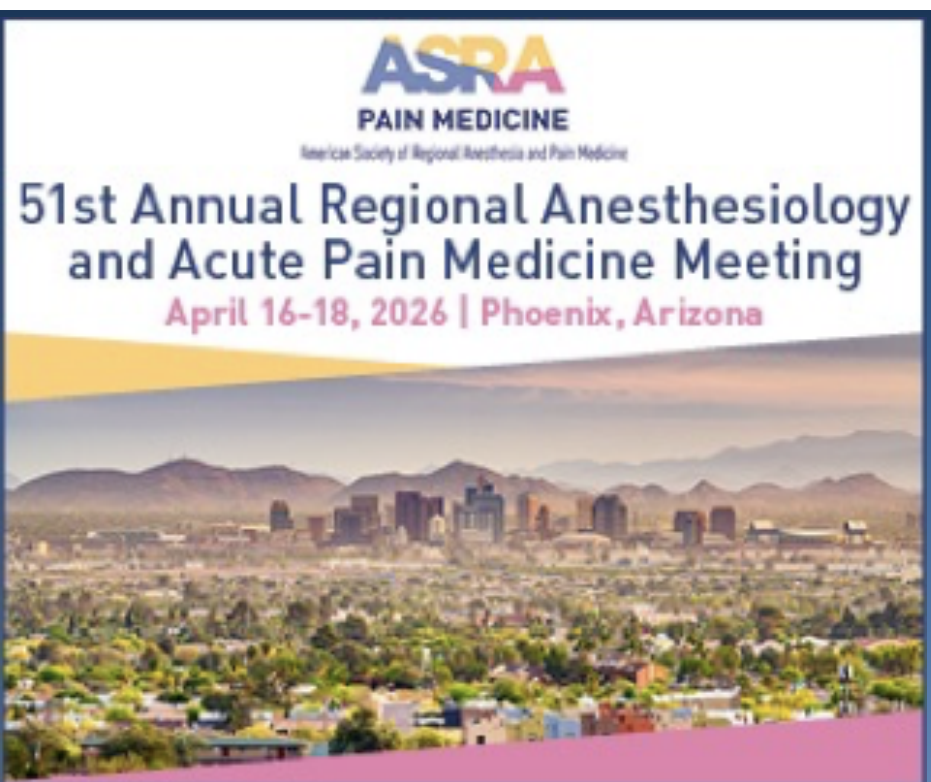




Impact of Preoperative Opioid Exposure on Postoperative Outcomes Following Shoulder Arthroplasty

Aria Soltankhah, B.S.¹, Bryan Yavari, B.S.¹, Stanna Calderon, B.S.¹, Evan Lederman, M.D.^{1,2}, Anup Shah, M.D.^{1,2}

¹University of Arizona College of Medicine - Phoenix

²Banner Health



Medicine
Phoenix

INTRODUCTION

- Total shoulder arthroplasty (TSA) for the management of advanced shoulder pathology offers substantial improvements in pain and function. However, postoperative complications remain clinically meaningful and may be influenced by preoperative factors.
- Opioid exposure prior to surgery has been linked to opioid overdose, pneumonia, infection, and respiratory failure, yet limited literature exists evaluating its impact on post-TSA outcomes (Wilson et al., 2021). This study investigates associations between opioid use before TSA and postoperative complications within 180 days after surgery.

METHODS

- A retrospective cohort study was conducted using the Banner Health TriNetX federated electronic health record network that includes all Banner hospitals.
- Adult patients (≥18 years) undergoing primary total shoulder arthroplasty were identified using ICD-10-PCS and CPT procedure codes.
- Patients were stratified into two cohorts: those with documented opioid prescriptions (ATC code N02A) within one year prior to surgery and those without opioid exposure during that period.
- Outcomes were assessed from postoperative day 1 through day 180 and included opioid dependence, infection, shoulder instability, respiratory failure, myocardial infarction, stroke, pneumonia, sepsis, acute kidney injury, and adhesive capsulitis. Propensity score matching (1:1) was performed to balance demographics and baseline comorbidities.
- This study used only de-identified data and was exempt from institutional review board approval under HIPAA §164.514(b)(1). No off-label or investigational interventions were used.

RESULTS

Figure 1: Flowchart

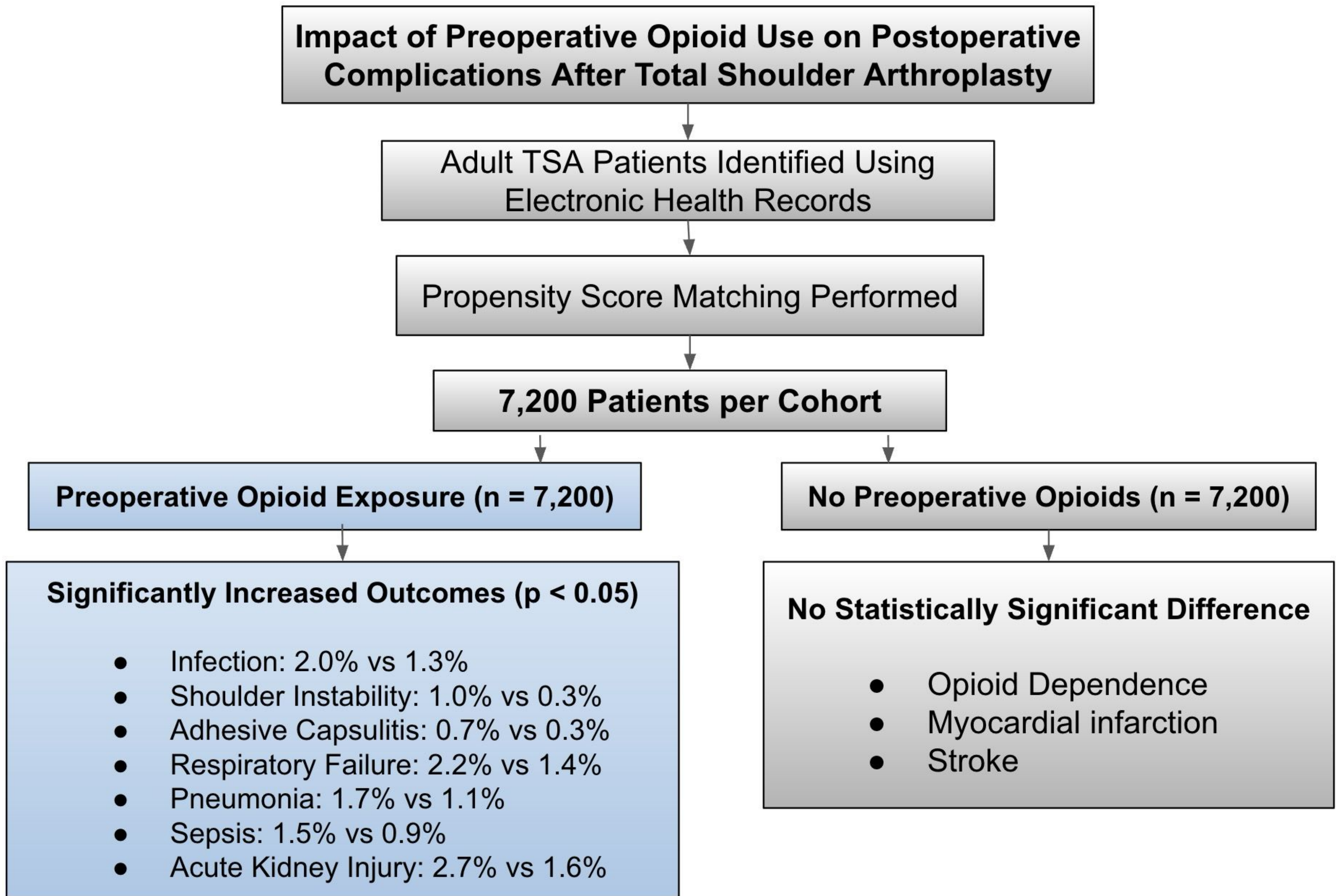


Figure 2: Table of outcomes for statistically significant results

Outcome	Opioid (%)	Non-opioid (%)	RR (95% CI)	p-value
Postoperative infection	2.0	1.3	1.51 (1.14-2.00)	0.004
Shoulder instability	1.0	0.3	3.56 (2.17-5.84)	<0.001
Adhesive capsulitis	0.7	0.3	2.53 (1.51-4.24)	<0.001
Respiratory failure	2.2	1.4	1.54 (1.18-2.00)	0.001
Pneumonia	1.7	1.1	1.54 (1.14-2.07)	0.004
Sepsis	1.5	0.9	1.65 (1.20-2.26)	0.002
Acute kidney injury	2.7	1.6	1.70 (1.33-2.17)	<0.001

CONCLUSIONS

- Preoperative opioid use was associated with a significantly increased risk of multiple medical and shoulder-specific complications within six months following total shoulder arthroplasty.**
- These findings suggest that opioid exposure prior to TSA may adversely affect early postoperative recovery and joint stability.
- Further research is needed to determine the causal relationship between preoperative opioid exposure and postoperative complications after shoulder arthroplasty.

REFERENCES

- Wilson JM, Farley KX, Gottschalk MB, Daly CA, Wagner ER. Preoperative opioid use is an independent risk factor for complication, revision, and increased health care utilization following primary total shoulder arthroplasty. J Shoulder Elbow Surg. 2021;30(5):1025-1033. doi:10.1016/j.jse.2020.08.007
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