Thresholds for Preoperative Opioid Use in Arthroscopic Rotator Cuff Repair that Negatively Influence Postoperative Clinical Outcomes

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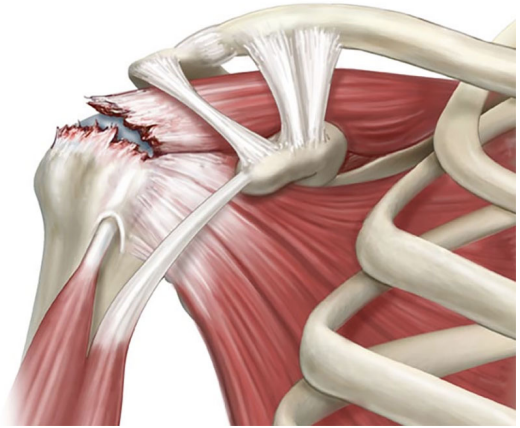
Introduction

- Preoperative opioid use is a known risk factor for complications and poor outcomes following rotator cuff repair (RCR)
- The use of preoperative opioids occurs along a spectrum, ranging from patients receiving few to no opioid prescriptions to patients with multiple, recurrent opioid prescriptions.



Purpose/Hypothesis

Purpose: Evaluate preoperative opioid use along a spectrum to better understand the role that preoperative opioid use has on postoperative outcomes after rotator cuff repair

Hypothesis: Patients with higher levels of preoperative opioid exposure would have inferior clinical outcome scores and higher pain scores in the after arthroscopic RCR

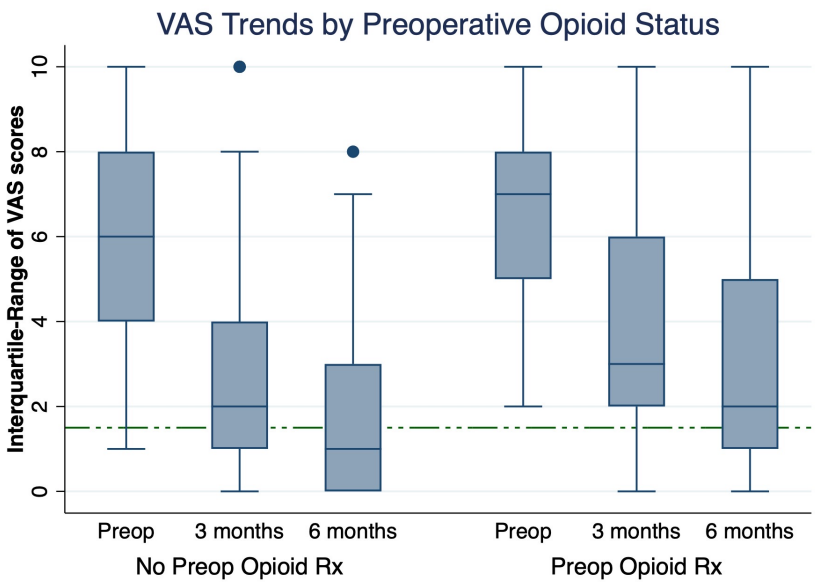
Methods

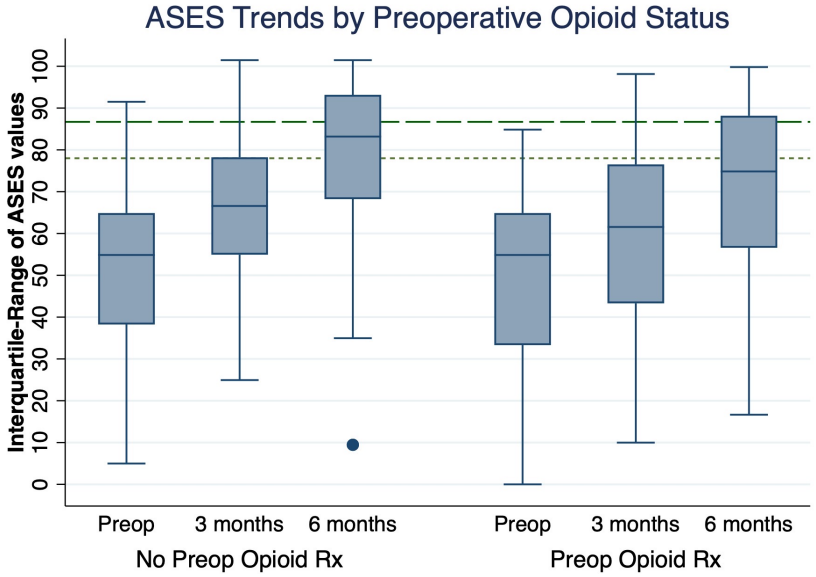
- Patients undergoing RCR 2018-2020
  - Prescription drug monitoring program (PDMP)
  - Cumulative morphine milligram equivalents (MME) from prescriptions one year prior to surgery
    - 0-200, 200-500, >500
- Postoperative Outcomes (3 and 6 months)
  - Visual analog scale (VAS) for pain
  - American Shoulder and Elbow Surgeons Shoulder Score (ASES)
  - Proportion achieving patient acceptable symptom state (PASS) for VAS and ASES were determined

Results – Demographics

- 763 patients (47.6% male)
- Mean age: 60.2 ± 10.0 years
- Mean follow up: 6.7 +/- 4.9 months
- 488 patients (64%) had no history of opioid use one year prior to RCR
- 275 (36%) had an opioid prescription one year before RCR

Results – Trends





Patients with preoperative opioid use had an average ASES value 7.9 points lower ($p<0.001$), and average VAS value 1.0 points greater ($p< 0.001$) than opioid naïve patients when considering **entire postoperative treatment course.**

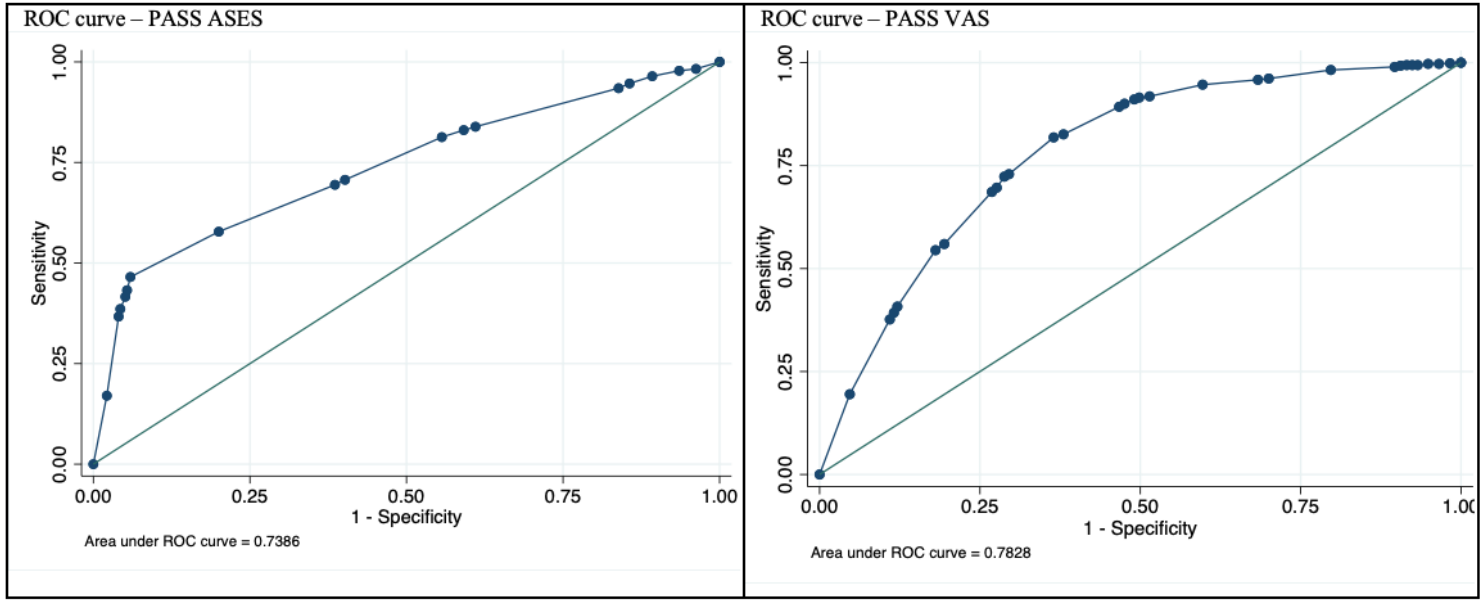
Results – VAS

Table II: Multivariate Predictors of Achieving VAS PASS Following Rotator Cuff Repair	Odds Ratio	95% CI	P Value
Preoperative Opioid Use (*MME*)			
< 200 MME	1	[Reference]	[Reference]
200-500 MME	0.70	(0.48 – 1.03)	0.074
500+ MME	0.45	(0.31 – 0.66)	<0.001
Follow Up Duration†	1.00	(0.99 – 1.00)	0.010
Patient Sex			
Male	1	[Reference]	[Reference]
Female	0.80	(0.65 – 0.97)	0.027

Results – ASES

Table I: Multivariate Predictors of Achieving ASES PASS Following Rotator Cuff Repair	Odds Ratio	95% CI	P Value
Preoperative Opioid Use (*MME*)			
< 200 MME	1	[Reference]	[Reference]
200-500 MME	0.75	(0.49 – 1.14)	0.173
500+ MME	0.69	(0.50 – 0.95)	0.024
Follow Up Duration (*Months*)	1.07	(1.06 – 1.08)	<0.001
Patient Sex			
Male	1	[Reference]	[Reference]
Female	0.76	(0.61 – 0.96)	0.020

Results – ROC



ROC analysis with MME categories of 0-200, 200-500, and >500 MME yielded an area under the curve of 0.74 for PASS ASES and 0.78 for PASS VAS

Conclusion

- Greater opioid use preoperatively results in inferior postoperative outcomes after RCR
- Thresholds for preoperative opioid use prior to arthroscopic rotator cuff repair that negatively influence postoperative outcomes were identified
- Providers can use these thresholds when educating and counseling patients

References

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