

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

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Disclosures

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AAOS: Board or committee member

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Introduction

- Preoperative opioid use is risk factor for complications and poor outcomes following rotator cuff repair (RCR)
- **Objective:**
 - **Determine preoperative opioid use thresholds that negatively influence postoperative outcomes following arthroscopic RCR**
- **Hypothesis:**
 - **Identified thresholds of preoperative opioid use would demonstrate inferior clinical outcome scores in groups with higher preoperative opioid use**

Methods

- Consecutive patients undergoing arthroscopic RCR from 2018-2020
- Preoperative opioid use in year prior to surgery obtained from state PDMP
 - Morphine milligram equivalents (MME) conversion
- Patient acceptable symptom state (PASS) proportion calculated at 6 months
 - VAS Pain, ASES score
- Multivariate analysis and receiver operator characteristic (ROC) analysis performed

Results

- 763 patients (47.6% male)
- Mean age 60.2 years
- 275 (36%) had an opioid exposure within one year prior to RCR
- No association between the number of days from opioid prescription to surgery



Results

- Preoperative opioid use cohort had lower mean ASES (8 pts) and higher VAS pain (1 pt) levels ($p < 0.001$)
- At 6 months postoperatively, 40.0% (131/328) of opioid naïve and 26.7% (46/172) opioid users reached PASS for ASES ($p = 0.003$)
- At 6 months postoperatively, 58.7% (223/380) of opioid naïve and 40.2% (80/199) opioid users reached PASS for ASES ($p < 0.001$)

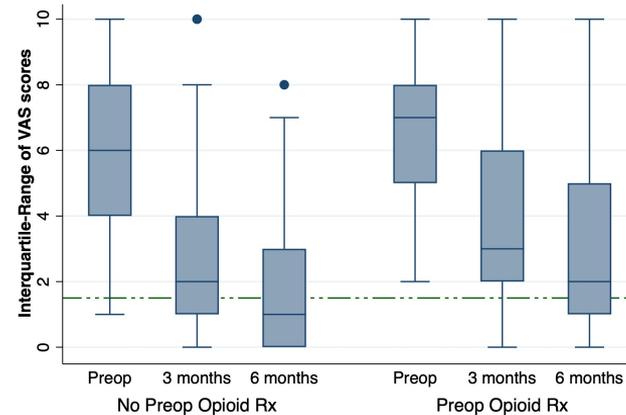


Figure 1: VAS trends by preoperative opioid status; green dash = PASS value

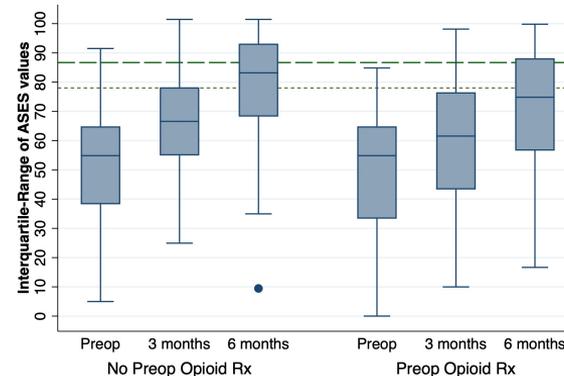


Figure 2: ASES trends by preoperative opioid status; green dash = PASS value

Results

- Probability of achieving PASS for VAS decreased by 1.8% for every 100 MME used preoperatively (p=0.004)
- Threshold of 500+ MME preoperatively identified as predictor for failure to meet PASS for VAS and ASES postoperatively

Figure 3: Multivariate predictors of achieving VAS PASS

	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

Figure 4: Multivariate predictors of achieving ASES PASS

	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 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 (figure 5)

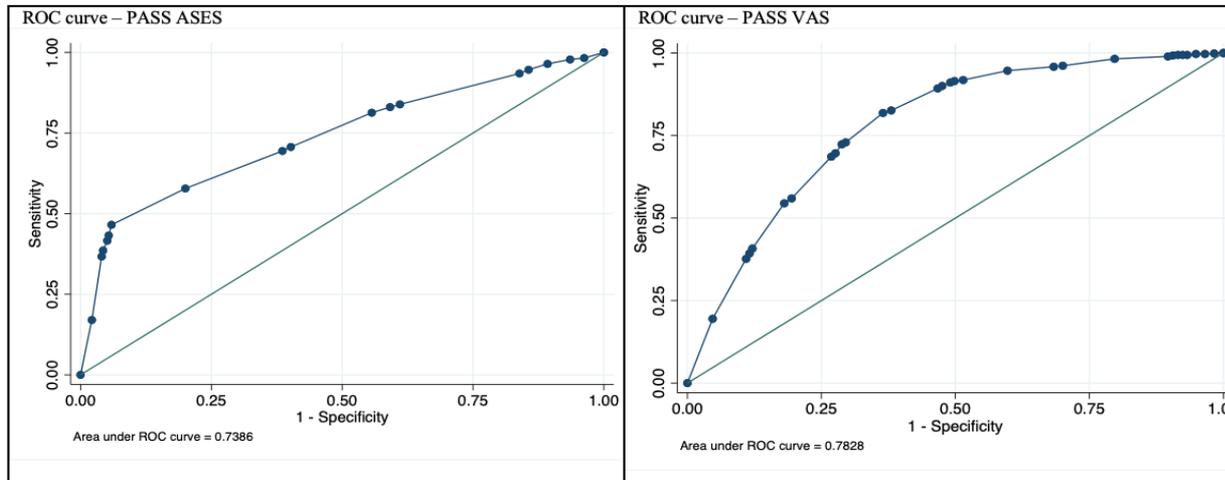


Figure 5: ROC curves for ASES and VAS PASS

Conclusion

- Preoperative opioid use is a risk factor for diminished clinical outcome scores and higher pain following RCR in the early postoperative setting
- Higher preoperative opioid use (500+ MME) resulted in inferior clinical outcomes
- Providers can use preoperative MME thresholds when educating and counseling patients on outcomes following arthroscopic RCR

References

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