

Opioid Use in Total Shoulder Arthroplasties: A Retrospective Cohort Analysis

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Objective

- Evaluate how postoperative opioid consumption relates to daily pain scores in total shoulder arthroplasty (TSA) patients and determine how this relationship differs between preoperative opioid users and non-users

Introduction

- In the US, opioid consumption and opioid-related mortality are among the highest in the world
- Opioids remain as one of the primary methods for pain management postoperatively
- Prior studies have linked preoperative opioid use to worse postoperative outcomes and higher opioid consumption
- However, the relationship between pain intensity and opioid consumption, and how this relationship differs between preop users and non-users remains unclear

Methods

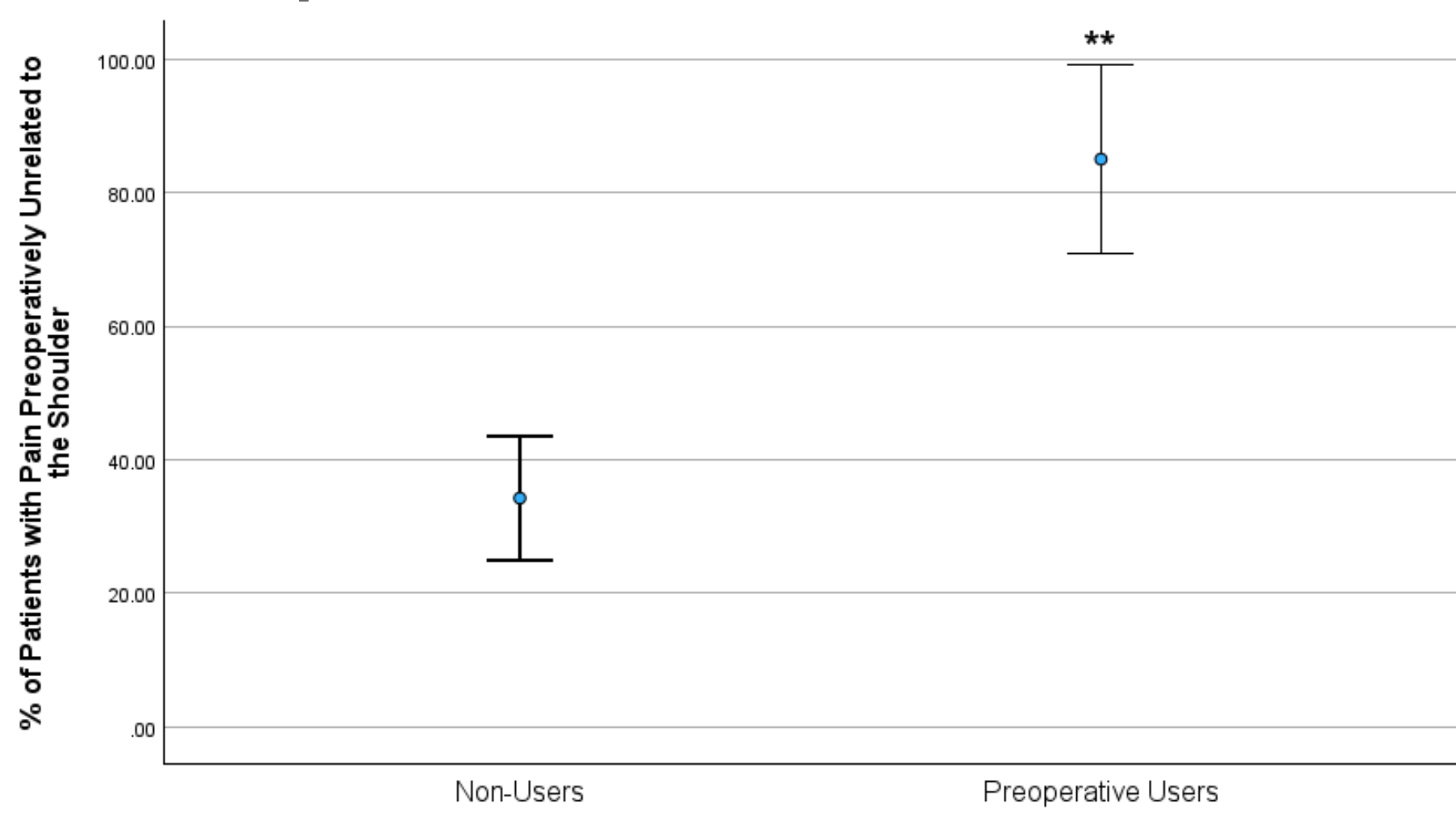
- 93 consecutive patients undergoing TSA between June 2021 and June 2022 at a single surgeon academic center were enrolled in the study
- Patients were excluded if they were undergoing revision shoulder arthroplasty
- Following surgery, patients completed daily pain diaries to track pain and opioid use. Preoperative use and postoperative refills were determined using the New York State Prescription Monitoring Program. Any opioid prescription within three months before surgery was considered preoperative use
- Group comparisons performed using Chi-Squared tests. Mixed-model linear regressions evaluated opioid consumption in response to pain

Results

Demographics

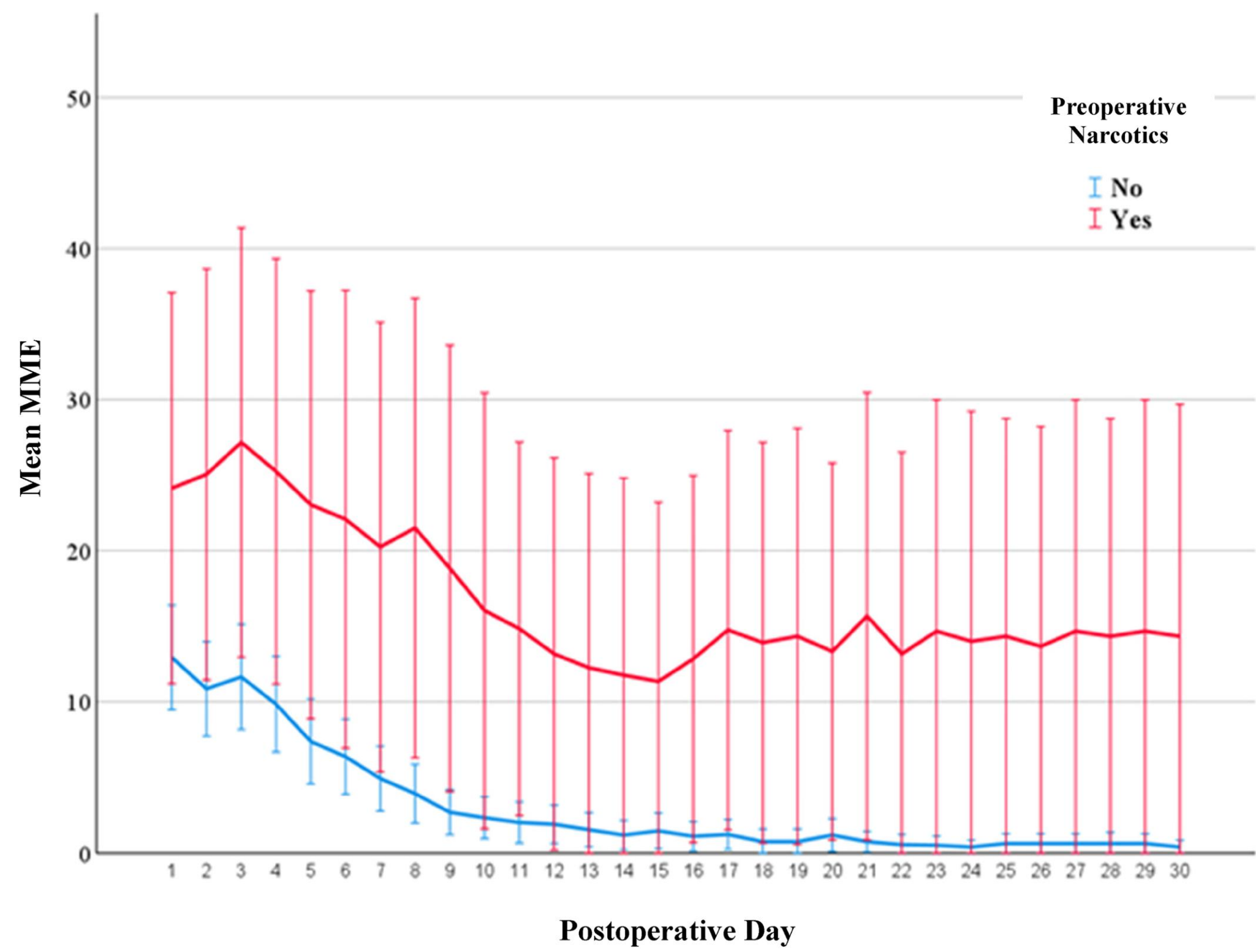


- Preop opioid users demonstrated a significantly ($p < .001$) higher prevalence of preoperative chronic pain, unrelated to the shoulder

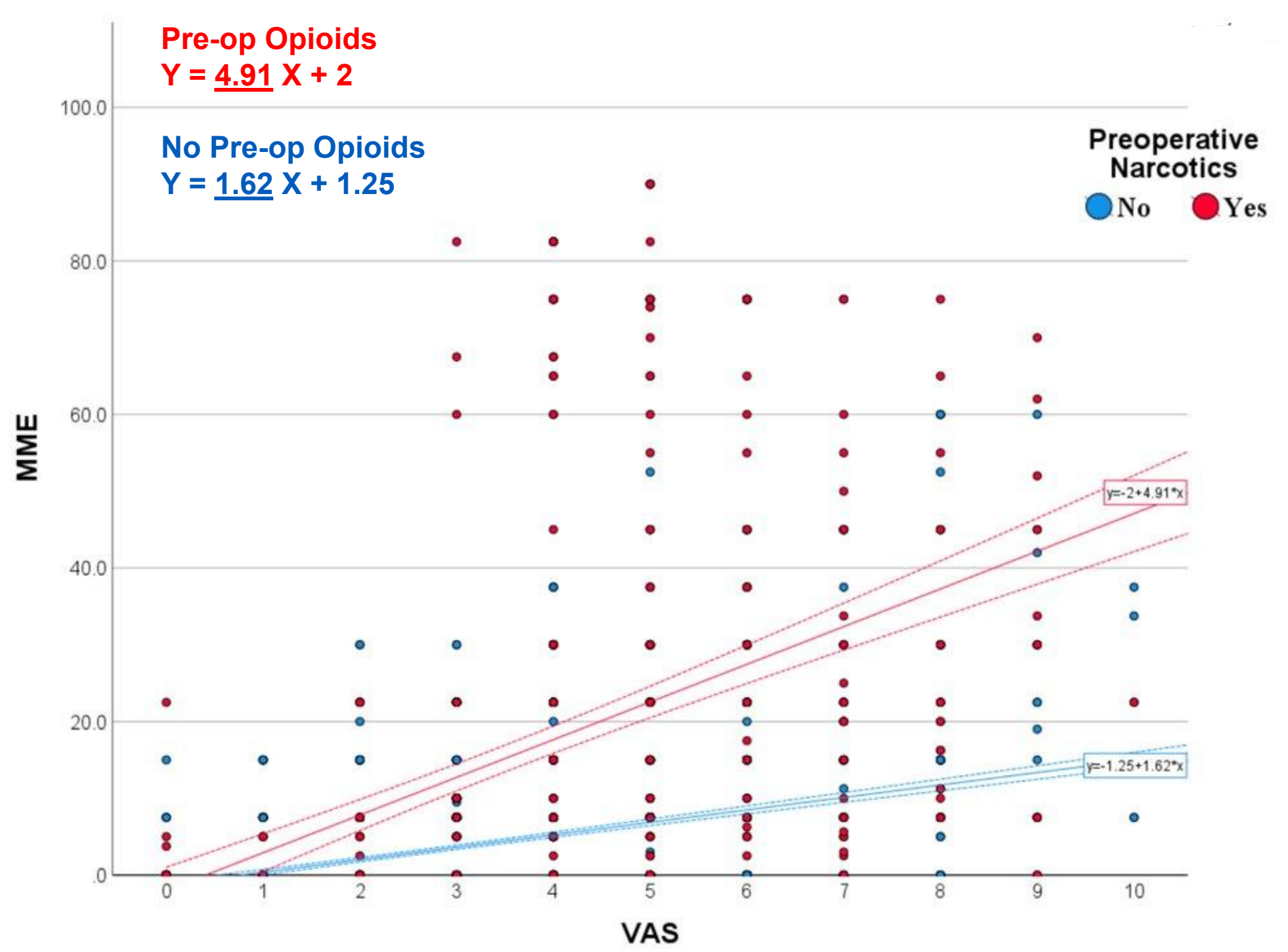


Opioid Use Preop	No Opioid Use Preop	p-value
17/20 (85%)	25/73 (34%)	< 0.001
Osteoarthritis – 12 (60%)	Osteoarthritis – 14 (19%)	NA
Degenerative Disc Disease – 6 (30%)	Spondylolisthesis – 5 (7%)	
Rheumatoid Arthritis – 4 (20%)	Rheumatoid Arthritis – 3 (4%)	

- No correlation between preoperative and daily postoperative opioid consumption ($p = .279$)



- Preop opioid users consumed significantly more opioids postoperatively in response to pain ($p < .001$)



Conclusion

- Preoperative opioid use was strongly associated with greater postoperative opioid consumption for the same pain intensity compared to opioid-naïve patients, with an additional 5 MME consumed for each 1-point increase on the VAS in preop users, suggesting potentially altered pain processing, tolerance, or dependency
- Most preoperative opioid users had chronic pain unrelated to the shoulder, indicating a more complex pain profile in this demographic
- These findings highlight the importance of identifying opioid exposure and chronic pain comorbidities in preoperative patients to help guide analgesic management and better anticipate pain responsiveness
- Early counseling, multimodal pain management and coordination with pain specialists in these patients may help to optimize recovery, reduce opioid requirements and minimize risk for prolonged use postoperatively in this vulnerable demographic

References

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