

Postoperative Opioid Use Following Elective Endonasal Skull Base Surgery

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Introduction

- Postoperative analgesic protocols following Endonasal Skull Base Surgery (ESBS) are not well defined.
- Within the fields of otolaryngology and neurosurgery it is generally accepted that ESBS, performed by either a microscopic or endoscopic approach, is less painful compared to an open craniotomy approach.
- There remains a paucity of data on opioid prescribing patterns and use following these types of procedures.
- Recent studies have demonstrated that age, pre-existing history of mood or chronic pain disorders, and smoking status are independent variables that can predict increased opioid requirements.
- We sought to define opioid prescription patterns and identify demographic factors, comorbidities, and surgical complications associated with increased opioid prescribing patterns following ESBS.

Methods

- We performed a retrospective review of 500 patients who underwent ESBS between October 2015 and November 2020.
- Postoperative opioid refill rates were calculated based on anonymized Electronic Medical Record data and converted into Oral Morphine Milligram Equivalents (MMEs).
- Individual demographics, comorbidities, and intraoperative complications were analyzed independently.
- Odds Ratio and Chi-Squared analyses were performed to identify patient characteristics associated with increased postoperative opioid prescription rates.

Results

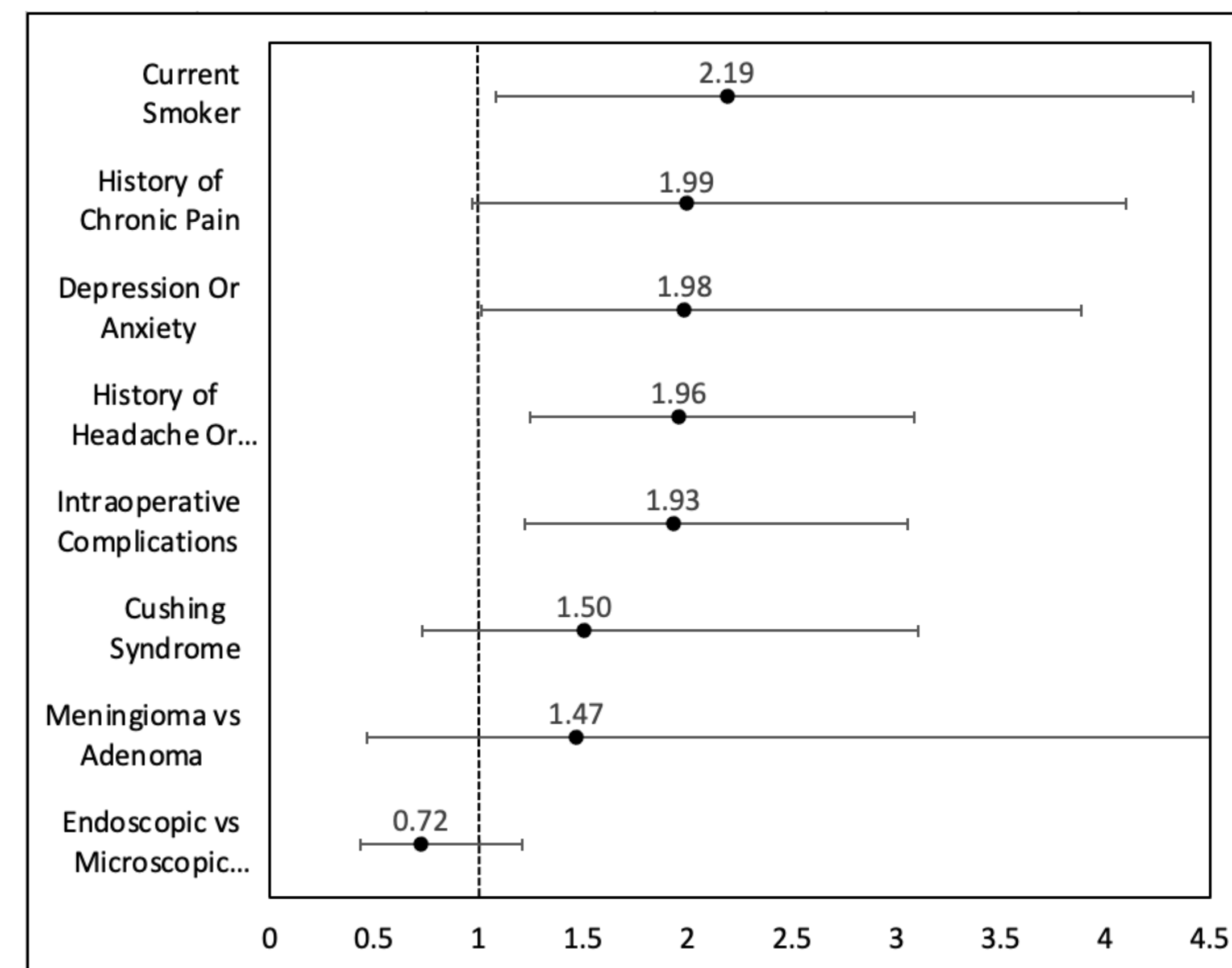


Figure 1. Opioid refill odds ratio forest plot by patient characteristics.

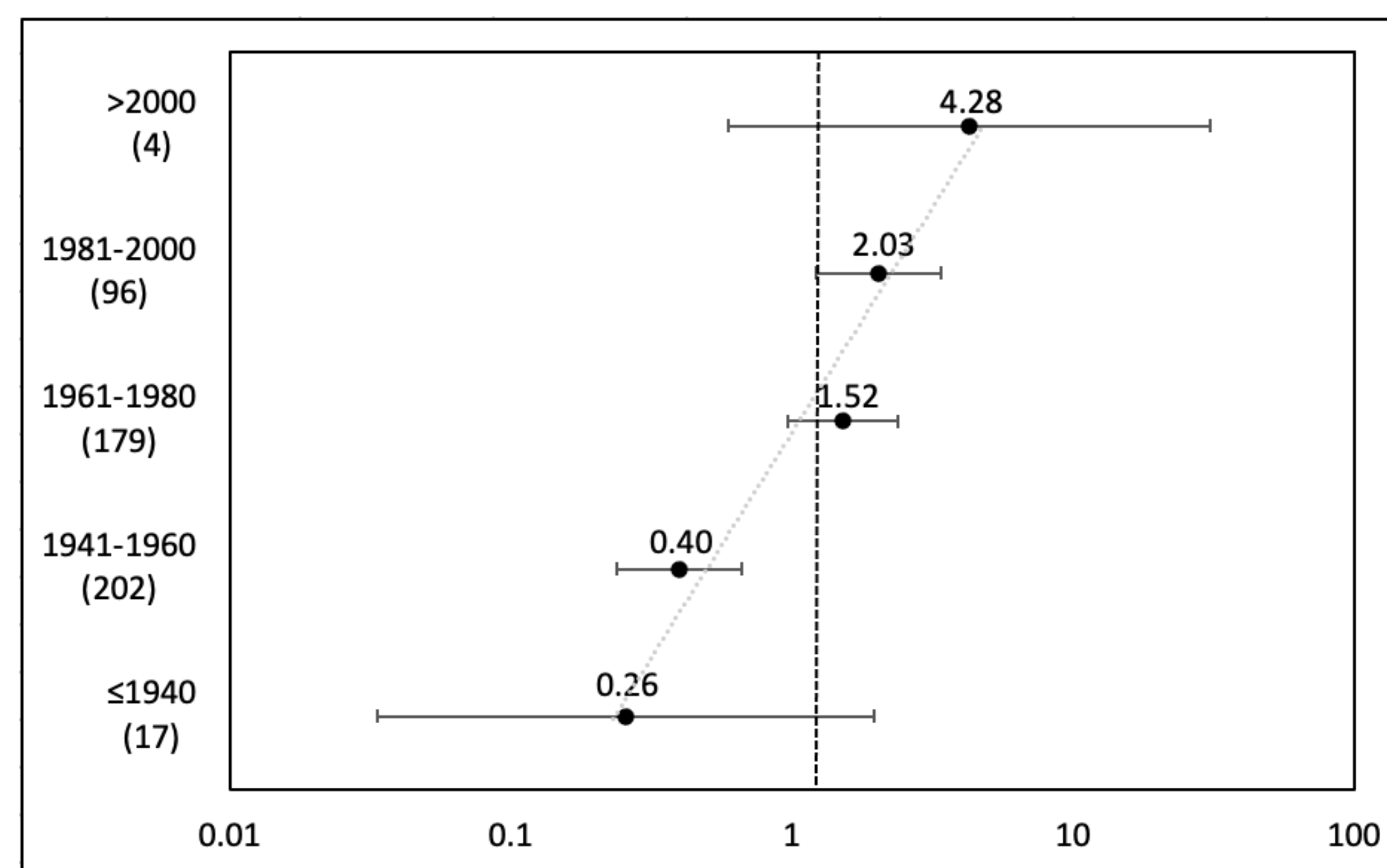


Figure 2. Opioid refill odds ratio forest plot by decade of birth.

Characteristic	n (%) or Mean/Median ± SD
N	500
Age, years (mean)	52.0 ± 16.22
Sex	
Female	51.6%
Male	48.4%
History of Anxiety and/or Depression	46 (9.2%)
Anxiety	22 (4.4%)
Depression	31 (6.2%)
History of Headache/Migraine and/or Chronic Pain	257 (51.4%)
Headache/Migraine	235 (47%)
Chronic Pain	39 (7.8%)
Smoking Status:	
Current	40 (8%)
Former	130 (26%)
Never	330 (66%)
Other Comorbidities:	
Cushing's disease	43 (8.6%)
Acromegaly	48 (9.6%)
Vision Loss/Hemianopsia	190 (38%)

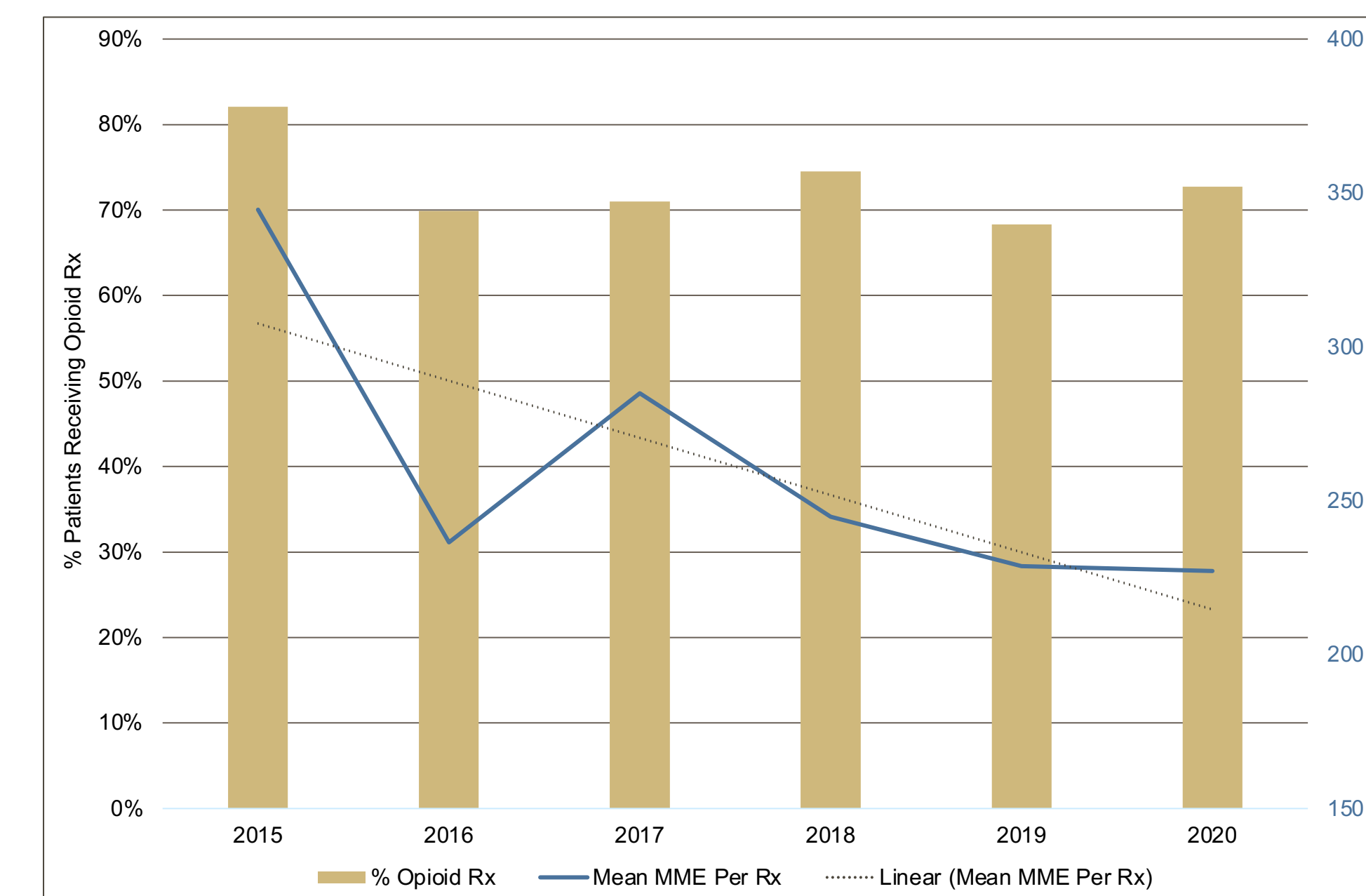


Figure 3. Percentage of patients who received an opioid prescription by year (bar) and mean MME per prescription (line).

Conclusion

- Smoking status, intraoperative CSF leak, age less than 50, history of mood disorders, and chronic headache or migraine were all associated with increased rates of opioid prescription refills in patients undergoing ESBS.
- Tumor pathology (adenoma versus meningioma), surgical approach (microscopic versus endoscopic), and patient gender analyses did not result in statistically significant differences in opioid refill rates.

Discussion

- Our research largely reaffirms findings from prior similar studies.
- Of the 96 patients within our study population who received an opioid refill during the postoperative period, 78 (81.3%) had at least one of the following: history of chronic headache or migraine, history of anxiety or depression, age less than 50 years old, or current smoking status.
- This suggests that most patients who demonstrate heightened pain experiences postoperatively may be predicted in the preoperative setting.
- This presents a valuable opportunity to reduce unnecessary opioid prescriptions and improve preoperative patient counseling.

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