Postoperative Respiratory and Analgesic Outcomes in Patients With Obstructive Sleep Apnea Undergoing Hip Arthroplasty

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KEY FINDING

Respiratory depression and gabapentinoid use were more frequent with OSA

OSA can complicate perioperative analgesia.

RESPIRATORY DEPRESSION

7.6% vs. 6.0%

OSA vs. no OSA / $p < 0.001$

GABAPENTINOID USE

2.4% vs. 1.9%

OSA vs. no OSA / $p = 0.028$

STUDY DESIGN

Retrospective cohort
TriNetX research network

Patients undergoing THA with OSA (G47.33) versus without OSA.

BEFORE MATCHING

8,150 OSA

56,150 No OSA

1:1 PROPENSITY SCORE MATCHING

7,780 per cohort

15,560 total / 180-day follow-up

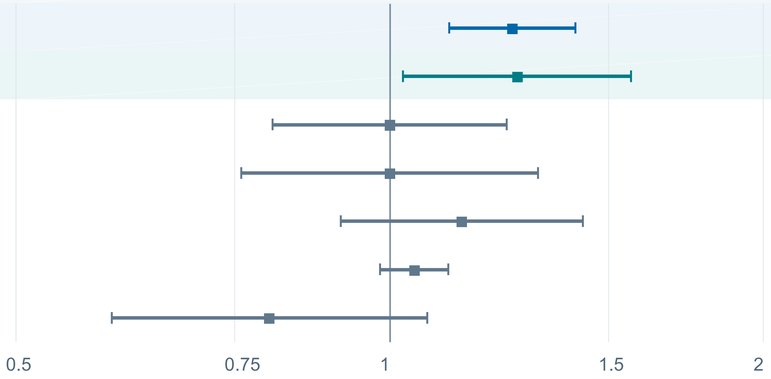
MATCHED VARIABLES

Age, sex, race, ethnicity, hypertension, ischemic heart disease, COPD, asthma, nicotine dependence, substance use disorders, osteoarthritis, obesity, diabetes, and thyroid disease.

MATCHED OUTCOMES

Risk ratio and 95% confidence interval

Outcome	OSA (%)	No OSA (%)	RR (95% CI)
Respiratory depression	**7.6**	**6.0**	**1.255 (1.117–1.411)**
Gabapentinoid use	**2.4**	**1.9**	**1.267 (1.025–1.565)**
Opioid-related disorders	2.1	2.1	1.000 (0.805–1.242)
Chronic pain	1.3	1.3	1.000 (0.759–1.317)
Delirium	2.1	1.8	1.143 (0.913–1.431)
Opioid analgesic use	20.2	19.3	1.047 (0.982–1.115)
Myocardial infarction	1.0	1.3	0.800 (0.597–1.072)



Squares: risk ratios. Lines: 95% CIs. Logarithmic scale. Vertical reference: RR = 1.

DISCUSSION & FINDINGS

Respiratory risk and opioid outcomes

Respiratory depression was more frequent with OSA (7.6% vs. 6.0%), despite no significant difference in opioid analgesic use or opioid-related disorders. Similar prescription rates do not establish comparable opioid doses. No significant differences emerged for chronic pain, delirium, or myocardial infarction.

Gabapentinoid use and clinical implications

Gabapentinoid use was higher with OSA (2.4% vs. 1.9%). This association does not show that gabapentinoids caused the respiratory events. The findings support attention to respiratory status and sedating medications after THA. Nonsignificant comparisons do not establish equivalence between groups.

BALANCE & LIMITATIONS

All matched SMDs <0.1. Mean age was 62.9 ± 15.8 vs. 64.4 ± 16.7 years (OSA vs. no OSA). Coding accuracy, unavailable anesthesia, opioid dosing and CPAP adherence details, and residual confounding limit interpretation. Outcomes span 180 days and are not restricted to the immediate perioperative period.

REFERENCES

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2. Naveen N, et al. Cureus. 2026;18:e111137.
3. Thomas TL, et al. J Arthroplasty. 2024;39:3119–3127.e1.