

Perioperative Buprenorphine Use Protects Against Long-term Opioid Use

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BACKGROUND

- Research shows 70-80% of surgical procedures result in mu opioid prescriptions perioperatively
- Persistent postoperative opioid use (PPOU) contributes to the risk of opioid use disorder (OUD) and opioid related deaths
- Buprenorphine (bup) was first FDA approved for acute pain (1985) is a partial mu opioid agonist/kappa opioid antagonist analgesic with a superior safety profile compared to full mu opioid agonists
- Little is known about whether perioperative bup pain management on the day of surgery (DOS) might influence PPOU outcomes

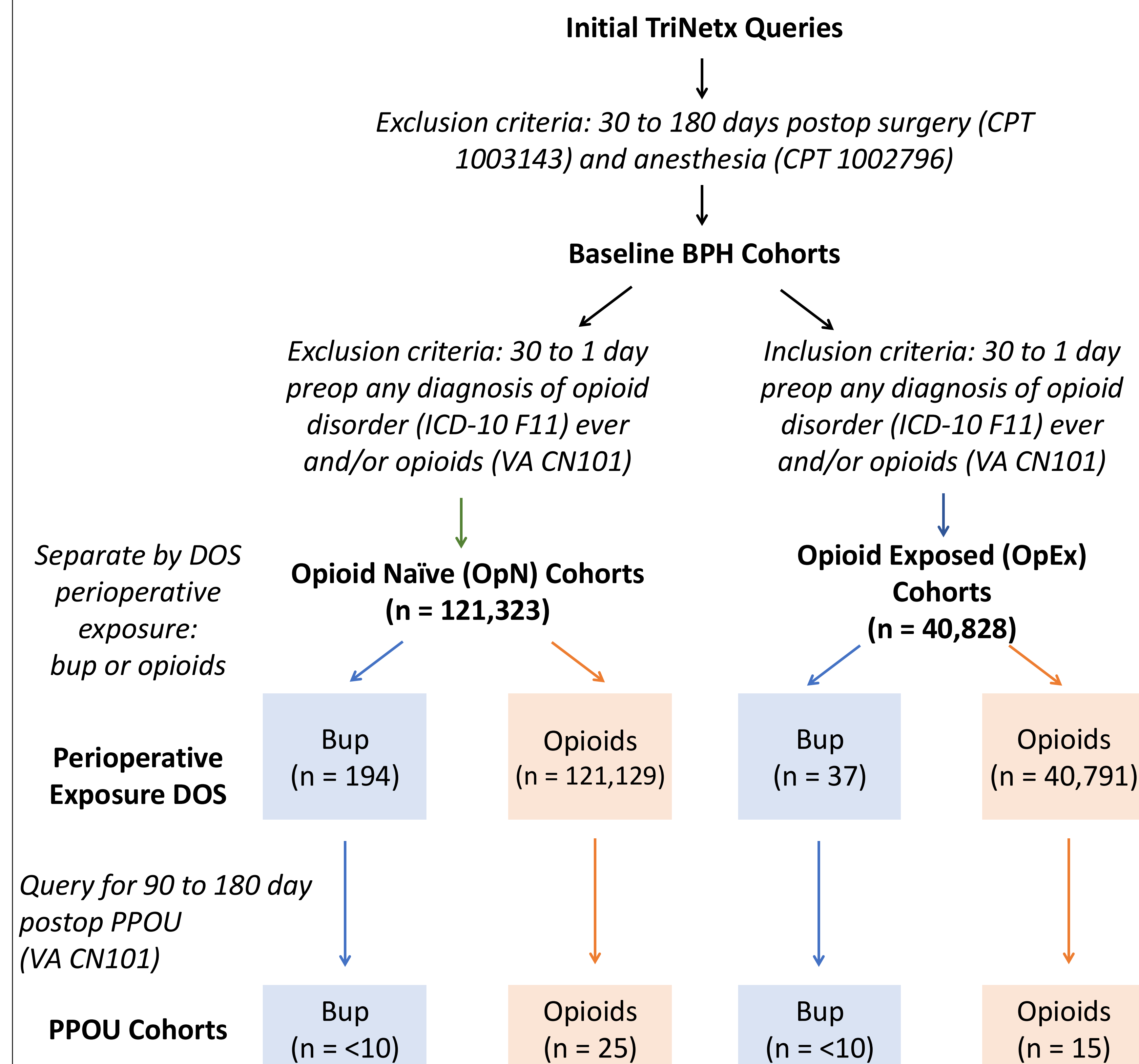
OBJECTIVE

- To compare perioperative pain pathways (bup versus opioids DOS) on the risk of developing PPOU in opioid-naïve (OpN) versus opioid-exposed (OpEx) older men undergoing elective urologic surgeries

METHODS

- Retrospective cohort study from deidentified medical records within TriNetX of 84 healthcare organizations
- Cohorts included male patients 60 and older who underwent urologic surgeries between 2011-2024
- After cohorts were separated to opioid naïve (OpN) versus opioid exposed (OpEx) cohorts, groups were divided by pain management DOS with bup versus mu opioids
- Propensity score matching (PSM) controls for potential confounders based on established risks and demographics

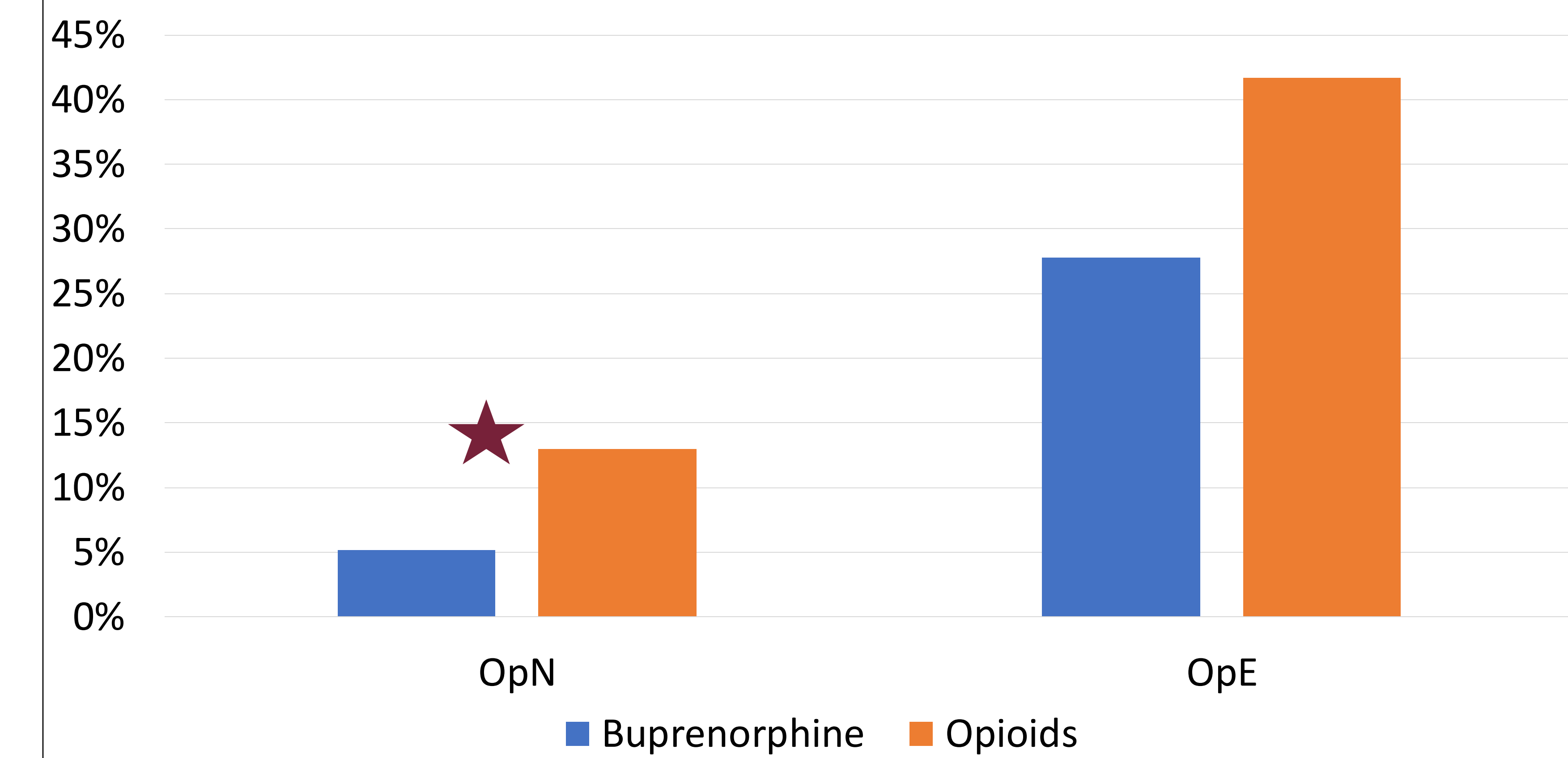
Figure 1. Schematic Outlining the Methodology of Cohort Assembly



RESULTS

- Bup cohorts could be underestimated as values <10 are reported as 10 within TriNetX
- Among OpE patients, PSM balancing did not lead to statistically significant differences ($p = 0.216$)
 - Risk Ratio: 1.5, 95% Confidence Interval (0.78, 2.88)
- Among OpN patients, PSM balancing yielded statistically significant differences ($p = 0.008$)
 - PPOU occurred in 25 men in DOS opioids versus fewer than 10 in bup
 - This correlates to 7.77 patients per 100 BPH surgeries who are at risk of developing PPOU from opioids as compared to bup use
 - Risk Ratio: 2.5, 95% Confidence Interval (1.23, 5.04)

Figure 2. Percent Risk of Developing PPOU



* Risk of PPOU was significantly higher in OpN opioids DOS at 12.953% while risk in OpN bup DOS was 5.181%

CONCLUSION & FUTURE DIRECTIONS

- This study represents an initial step aimed to understand risk factors in elective surgeries and PPOU
- Reviewed opioid prescribing patterns DOS following perioperative pain management to identify key opportunities to lower PPOU
- Results suggest perioperative buprenorphine for pain reduces risk of PPOU in older OpN patients
- We will review large-scale databases (e.g., TriNetX) to explore correlations between disease states, concurrent medications, and PPOU risk in other elective surgical specialties and populations

REFERENCES & ACKNOWLEDGEMENTS

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