EPH214

Impact of Preoperative Anxiety and Depression on Chronic Postoperative Opioid Use in Orthopedic Surgery Patients

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Background

- Prolonged (chronic) opioid use is a growing concern among patients undergoing surgery, and psychiatric disorders may act as a risk factor for long-term opioid use and misuse among surgical patients.
- The complex interplay between psychiatric disorders, surgical procedures, and opioid misuse is well-recognized; however, research examining the impact of pre-operative anxiety or depression on chronic opioid use post-surgery in adults remains limited.

Objectives

- To evaluate the association between preoperative depression or anxiety and chronic postoperative opioid use in adults (≥18 years) after orthopedic surgeries.

Methods

- This retrospective cohort study utilized Inovalon closed claims data to examine adults who underwent selected orthopedic procedures, identified by CPT codes, from January 2017 to February 2022, considering only the first orthopedic procedure if multiple were present during the study period.
- The study included opioid-naïve patients with continuous insurance coverage, excluding those with opioid prescriptions from 365 to 31 days pre-surgery, and focused on individuals who filled opioid prescriptions within one month before or one week after surgery.
- The primary outcome was postoperative chronic opioid use, defined as filling an opioid prescription 91-180 days post-surgery.
- Preoperative anxiety/depression identified by ≥2 ICD-10 claims, ≥30 days apart, within 6 months pre-surgery.
- Association of preoperative anxiety or depression with chronic postoperative opioid use analyzed using separate multivariable logistic regression models, controlling for confounders.

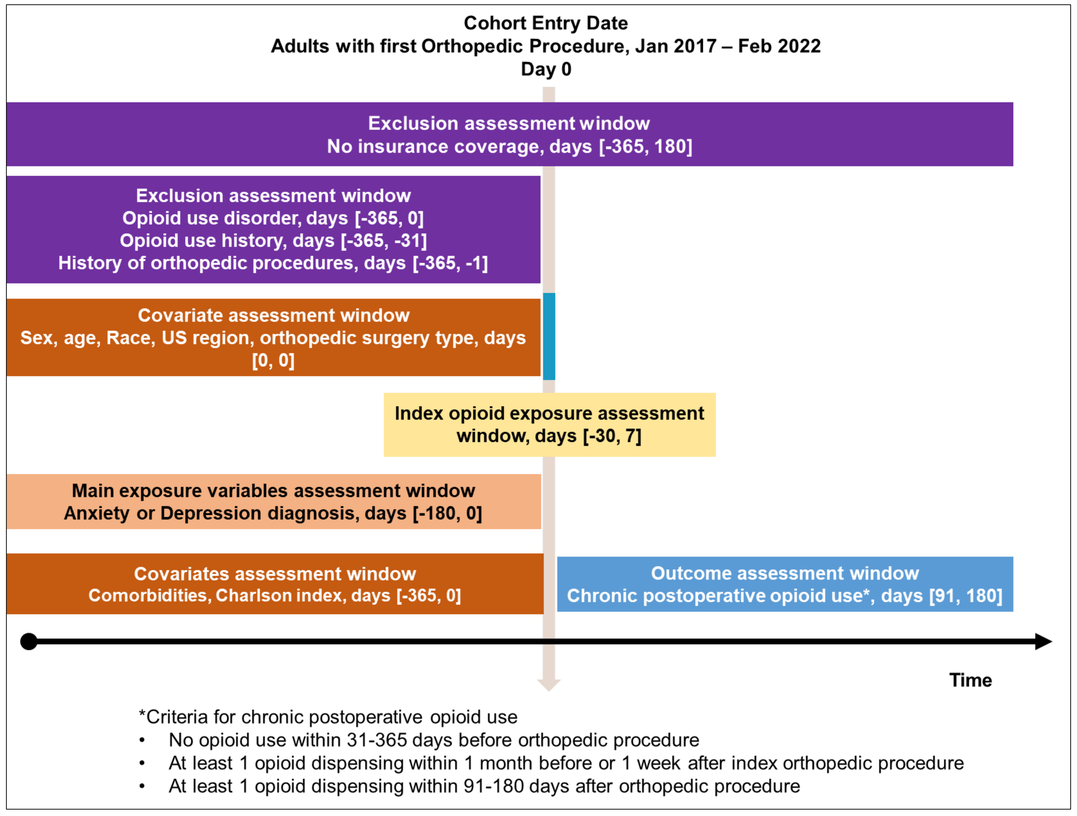

Fig. 1: Study design

Table 1: Multivariable logistic regression models examining the association between pre-operative anxiety or depression and chronic postoperative opioid use in adult orthopedic surgery patients

Model 1		Adj. Odds ratio*	95% CI	p-value
Pre-operative Anxiety	Yes vs. No	1.18	1.14 – 1.23	< 0.001
Model 2		**Adj. Odds ratio***	**95% CI**	**p-value**
Pre-operative depression	Yes vs. No	1.21	1.16 – 1.26	< 0.001
Model 3		**Adj. Odds ratio***	**95% CI**	**p-value**
Both Anxiety & Depression	Yes vs. No	1.29	1.23-1.36	< 0.001

*Model is adjusted for sex, age, US region, Orthopedic surgery type, chronic pain, gout, respiratory disorder, bipolar/psychotic disorder, rheumatoid arthritis, osteoarthritis, soft tissue disorders, dementia/Alzheimer's disease, Parkinson's disease, seizures, and obesity

Results

- A total of 200,049 adults undergoing orthopedic surgeries were initially considered. From this group, 158,875 patients met the inclusion and exclusion criteria and were thus included in the final analysis.
- Among those analyzed, 20,762 (13.1%) developed chronic postoperative opioid use.
- Most patients (74.5%) did not have documented preoperative anxiety or depression diagnosis. However, 16.0% had either condition, and 9.5% had both.
- In multivariable logistic regression analysis, patients with preoperative anxiety alone were found to have an 18% increased risk of chronic postoperative opioid use (adjusted odds ratio [aOR]=1.18; 95% confidence interval [CI] 1.14-1.23; p<0.001).
- Pre-operative depression was associated with a 21% increased risk of chronic postoperative opioid use, as determined by a similar model (aOR=1.21; 95%CI 1.16-1.26; p <0.001).
- Individuals with both pre-operative anxiety and depression diagnosis had a 29% increased risk of chronic postoperative opioid use compared to those without either condition (aOR = 1.29; 95%CI 1.23-1.36; p <0.001).

Conclusion

- Our study indicates an increased risk of chronic postoperative opioid use in orthopedic surgery patients with preoperative anxiety or depression.
- To reduce this risk, perioperative mental health interventions, such as cognitive behavioral therapy, and exploring non-opioid pain management alternatives are recommended, although complete avoidance of opioids may not always be feasible.

Conflict of Interest: None

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