Associations between preoperative depression and anxiety, hysterectomy, and postoperative opioid use

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Background

- The opioid crisis is associated with 130 deaths per day. Over-prescription of opioids is a major contributor to the crisis; prescriptions are up 400% since 1999.
- Depression and anxiety are associated with increased acute and chronic pain post-hysterectomy.
- Providers overprescribe up to 4x the needed amount of opioids post-hysterectomy.

Objective

Determine whether preoperative depression and anxiety was associated with increased opioid use following hysterectomy.

Methods

Data

- We examined adult opioid-naïve women from the Watson/Truven Health Analytics MarketScan® database who underwent hysterectomy for non-cancer causes and followed them for 6 months post-surgery.

Measures

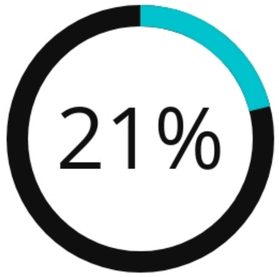
- Pre-existing depression and anxiety were measured using diagnosis codes and prescription medication use.
- Persistent opioid use was defined as filling an opioid prescription during the postoperative period (≤30 days after surgery) and again 90-180 days after surgery.

Analysis

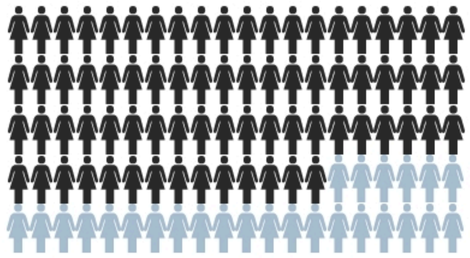
We used multivariable log-binomial regression to assess whether women with preoperative depression had higher risk of persistent opioid use and 30-day complications, after adjusting for demographics, comorbidities, and surgical characteristics.

Results

Sample



289,233 women were included
21% experienced pre-existing depression or anxiety



- 74% of women were given an opioid prescription during the perioperative period and, of those that initiated, 8% had at least one additional opioid fill 90-180 days after their hysterectomy.

Multivariable Model

	Incidence, n (%) Preoperative Depression/ Anxiety	No Depression/ Anxiety	HR or RR (95% CI)[a]
Total, N	60,260	228,973	–
30-day ED visit	4,982 (8.3)	15,473 (6.8)	1.17 (1.13, 1.21)
30-day readmission	4,574 (7.6)	17,633 (7.7)	0.99 (0.96, 1.03)
Outpatient opioid fills			
Perioperative[b]	52,434 (87.0)	185,582 (81.1)	1.07 (1.06, 1.07)
Any postoperative[c]			
15-30 days	3,856 (6.6)	10,063 (4.5)	1.44 (1.39, 1.49)
31-60 days	3,035 (5.4)	7,677 (3.6)	1.46 (1.40, 1.52)
61-90 days	2,556 (4.7)	6,184 (3.0)	1.50 (1.43, 1.57)
91-180 days	6,023 (12.3)	15,157 (8.0)	1.45 (1.41, 1.49)
Persistent postoperative[d]			
15-30 days	3,615 (6.2)	9,133 (4.1)	1.49 (1.43, 1.55)
31-60 days	701 (1.3)	1,373 (0.6)	1.92 (1.75, 2.11)
61-90 days	198 (0.4)	318 (0.2)	2.25 (1.87, 2.70)
91-180 days	112 (0.2)	153 (0.1)	2.61 (2.03, 3.37)
Opioid complications			
Opioid dependence	135 (0.2)	73 (<0.1)	5.54 (4.12, 7.44)
Opioid abuse	18 (<0.1)	12 (<0.1)	4.20 (1.97, 8.96)
Opioid poisoning	18 (<0.1)	47 (<0.1)	1.22 (0.68, 2.16)

Abbreviations: HR, hazard ratio; RR, risk ratio; CI, confidence interval
[a] Inverse-probability of treatment weighted
[b] opioid fill 14-30 days before surgery; [c] post surgical fills; [d] opioid fills before and after surgery

Discussion

- Post-operative opioid use is high after hysterectomy.
- Prescription fills before surgery are common, increasing risk for misuse.
- Persistent use is rare, but depression and anxiety increase risk of persistent use.
- Opioid complications are very rare; depression and anxiety increases risk.
- Women with depression and anxiety are more likely to go to ER after surgery, but no difference in readmission. These visits could possibly be avoidable.

Limitations

- Insured population and outpatient insurance-reimbursed opioid fills only.
- Some opioids may be prescribed for purposes other than hysterectomy
- Unmeasurable confounding (other clinical covariates)

Conclusions

Women with preexisting depression or anxiety had a slightly greater chance of filling an opioid prescription and a higher risk of persistent opioid use post-hysterectomy, which leaves this population more vulnerable to the risk of opioid dependence.

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