Prepregnancy surgery and risk of neonatal abstinence syndrome in future newborns

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1 Background

- Opioids are frequently used for postsurgical pain in young women.
- Postsurgical use of opioids may lead to opioid dependence.
- Long term use of opioids may lead to neonatal abstinence syndrome in future pregnancies.

2 Objective

- To determine the association between maternal prepregnancy surgery and the risk of neonatal abstinence syndrome in the offspring

3 Methods

Study design   Longitudinal cohort study of 2,182,365 deliveries in Quebec, Canada, between 1989 and 2016

Data   Hospital discharge abstracts

Exposure   Maternal prepregnancy surgery (n=705,966) vs. no surgery (n=1,476,399)

Outcome   Neonatal abstinence syndrome

Analysis   Risk ratios and 95% confidence intervals (CI) from log-binomial regression models adjusted for maternal pain comorbidity and pregnancy characteristics

5 Conclusion

- Prepregnancy surgery is associated with the risk of neonatal abstinence syndrome in future pregnancies.
- Prescription opioids for postsurgical pain may result in opioid dependence, inadvertently increasing the risk of neonatal abstinence syndrome in future offspring.
- Efforts to minimize use of opioids for postsurgical pain control are needed.

4 Results

Table 1 Association of prepregnancy surgery with neonatal abstinence syndrome

	Prevalence per 10,000 newborns (95% CI)	Risk ratio (95% CI)
Prepregnancy surgery	14.9 (14.0-15.8)	1.6 (1.5-1.8)
Total no. surgeries		
1	11.2 (10.1-12.4)	1.3 (1.1-1.4)
2	14.3 (12.4-16.1)	1.6 (1.3-1.8)
≥3	21.3 (19.3-23.3)	2.4 (2.1-2.7)
Type of surgery		
General	16.3 (14.5-18.2)	1.7 (1.5-2.0)
Cardiothoracic	43.3 (25.6-60.9)	4.5 (2.9-7.0)
Neurosurgery	31.1 (13.5-48.7)	3.0 (1.6-5.8)
Orthopedic	18.1 (15.1-21.1)	2.0 (1.6-2.5)
Urologic	34.0 (23.7-44.3)	3.0 (2.2-4.3)
No surgery	8.8 (8.3-9.2)	Referent