A Retrospective Study of Acute Post-Operative Pain Following Cesarean Section in Patients on Opioid Agonist Pharmacotherapy

Johanna Cobb MD; Elizabeth Snow RN;
Heather Turcotte DO; Aurora Quaye MD;
Wendy Craig PhD; Robert Warters MD

Introduction:

- **Opioid agonist pharmacotherapy** (e.g. methadone or buprenorphine) is strongly recommended for pregnant patients with opioid use disorder[1]
- Following cesarean section, these patients can have difficulty with pain control; however **small retrospective studies have been conflicting**[1-5]

Methods:

- We generated a dataset of all **patients who underwent cesarean section** at our institution between Jan 2016 and Dec 2018
- We compared **24-hour postoperative opioid consumption** for patients taking **methadone or buprenorphine** with data from patients not taking these medications
- Secondary outcomes were **highest pain score** in the first 24 hours and **length of stay** after surgery

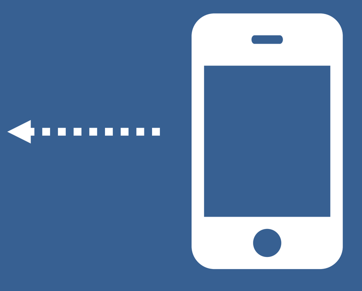
Results in Brief:

- Median **opioid consumption** during the first 24 hours after surgery was over **three times higher** for patients taking methadone or buprenorphine ($p < 0.001$)
- Mean **highest pain score** observed during the first 24 hours after surgery **was also higher** for patients taking methadone or buprenorphine ($p < 0.001$)
- These differences **remained significant after adjustment for covariates**
- There were no differences in these outcome variables between the buprenorphine and methadone groups

Conclusions:

- Our results support a **strong relationship** between **opioid agonist pharmacotherapy** and **increased post cesarean section pain**
- In light of the current opioid epidemic, **further studies are urgently needed** to investigate improved pain management strategies in this patient population

Cesarean section patients taking **methadone or buprenorphine** use **over 3 times** the amount of **opioids** in the first 24 hours after surgery, compared with those not taking these medications



Take a picture to download the **full poster**

Maine Medical Center
MaineHealth

Results Expanded:

	Methadone	Buprenorph	None
Number	37	86	2856
Opioid (MME) consumption[1]	105 [69.5 – 120]	97.5 [75 – 120]	30 [0 – 64]
Received PCA opioids	8 (21.6)	8 (9.3)	160 (5.6)
Received any opioids	36 (97.3)	81 (94.2)	1978 (69.3)
Highest pain score[1]	8.3 ± 1.5	8.2 ± 1.6	5.5 ± 2.2
Length of stay (hours)[2]	73 [68 – 79.5]	72 [69 – 77]	71 [62-76]

Table 1. Outcomes among women presenting for cesarean section, stratified by use of opioid agonist pharmacotherapy. Data shown as median [interquartile range], mean ± standard deviation, or frequency, n (%) as appropriate.

1. P-value < 0.001. When adjusted for maternal age, smoking and marital status, parity, use of intrathecal morphine, chronic pain, hypertension, and mental health comorbidities, p-value remained < 0.001
2. P-value = 0.002. When adjusted for parity, gestation type, marital status, race, the use of intrathecal morphine, depression, hypertension, and renal insufficiency, p-value = 0.001

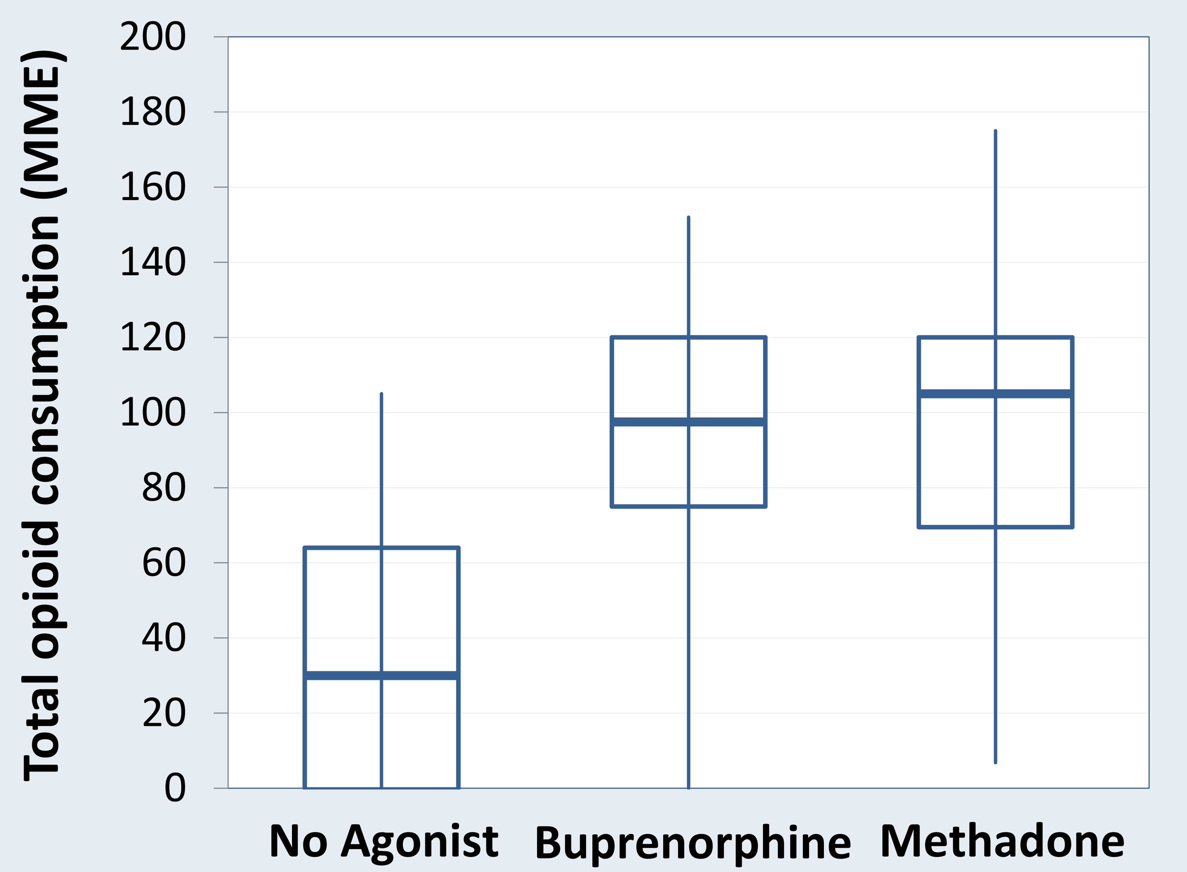


Figure 1. Total opioid consumption in the first 24 hours after surgery. Boxes represent the 25th and 75th centile; thick horizontal lines represent median value; thin vertical lines represent the 5th and 95th centiles.

References:

1. Mascola MA, et al. Obstet Gynecol. 2017;**130**(2):e81-94
2. Jones HE, et al. Am J Addict. 2006;**15**:258-9
3. Meyer M, et al. Obstet Gynecol. 2007;**110**:261-6
4. Meyer M, et al. Eur J Pain. 2010;**14**(9):939-43
5. Hoflich AS, et al. Eur J Pain. 2012;**16**(4):574-84