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Narcotic Use Decreases with Ibuprofen Administration
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Background
The United States is currently confronted with a growing narcotic dependence and the ability to use alternative analgesic methods is imperative in reducing narcotic use. Chang, et al. (2017) reported better pain reduction with a combination of ibuprofen and acetaminophen than with narcotics alone. The benefit of ibuprofen in the postpartum period is paramount in managing pain, decreasing swelling, reducing muscle aches, uterine cramping and incisional pain. When combined with acetaminophen, it is a viable non-opioid alternative for acute pain control.

Current literature reports that ibuprofen is safe in most postpartum preeclamptic patients; the authors completed a study that validated this finding (Costas, et al., 2018).

The Perinatal Special Care Unit (PSCU), a 15 bed high risk unit at Providence St Vincent Medical Center (PSVMC) began to consistently use ibuprofen along with acetaminophen in August 2018 with the goal to reduce narcotic use.

Purpose
The purpose of this study was examine if the administration of ibuprofen, in addition to acetaminophen, would impact the amount of narcotic use in postpartum women with Preeclampsia at PSVMC.

PICOT Question:
In postpartum women with Preeclampsia, does administering ibuprofen, compared to not administering ibuprofen, decrease narcotic use within 24-96 hours following delivery?

Methods
This study was an IRB approved retrospective chart audit of preeclampsia postpartum patients who delivered between January 2017 and December 2018. A total sample of 729 patients who had severe range blood pressures (BP ≥ 160/105) during their hospital stay were identified.

Data was collected on 326 randomly selected patients.

Inclusion criteria included Preeclampsia diagnosis, and treatment with antihypertensive medication for severe range blood pressures (BP ≥ 160/105). Patients who received multiple narcotics were excluded from the study.

Narcotic, ibuprofen and acetaminophen use was measured in milligram per day (mg/day). Narcotic trends were compared to the amount of ibuprofen or acetaminophen administered.

Results
Results were obtained by comparing the amount of oxycodone, ibuprofen and acetaminophen used in postpartum preeclamptic vaginal and cesarean deliveries.

This study included a total sample of 326 patients with a mean age of 32.8 ± 6.3 years.

About half of the patients used ibuprofen including 110 (46%) of the vaginal deliveries and 81 (53%) of the cesarean deliveries. Oxycodone use differed between delivery types, with 107 (38%) of vaginal deliveries and 150 (97%) of cesarean patients using oxycodone.

Ibuprofen and Oxycodone Use for Cesarean Patients

The percentage of postpartum preeclamptic women who received ibuprofen increased from 39% to 95% since August 2018. (See Figure 1)

Figure 2 shows the amount of ibuprofen and oxycodone used for all vaginal and cesarean deliveries included in this study.

Among cesarean patients, the amount of ibuprofen is inversely proportional to the amount of oxycodone, that is, as the ibuprofen dose increases the oxycodone dose decreases significantly (r=-.237, p=.003). (See Figure 3)

There was not a correlation between acetaminophen dosage and oxycodone use.

Discussion/Conclusions
The largest decrease in oxycodone use was for patients who received 1800 to 2400 mg of ibuprofen per day. As we try to improve our population health, we should encourage ibuprofen and acetaminophen use prior to initiating narcotics. It is imperative that preeclamptic women receive ibuprofen in their postpartum period to reduce their oxycodone use.

Key limitations of this study included limited patient demographics.

Further research should include additional chart audits on ibuprofen and narcotic administration, to ensure that ibuprofen use is maximized. In addition, length of stay should be studied to determine patient outcomes based on their ibuprofen and oxycodone use. Education will be provided to all nurses in regards to initiating pain management with non-opioid modalities prior to narcotics.

References
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