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Ibuprofen Does Not Increase Blood Pressure in Preeclampsia

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Background

In 2013, The American College of Obstetricians and Gynecologists (ACOG) made a recommendation to withhold Ibuprofen in postpartum Preeclamptic women.

The U.S. is currently confronted with a growing narcotic dependence and the ability to use alternative analgesic methods is imperative in reducing narcotic use.

Chang A Et al (2017) reported better pain reduction with a combination of ibuprofen and acetaminophen than with narcotics.

The benefit of Ibuprofen in the postpartum period is paramount in managing pain, decreasing swelling and helping reduce muscle aches and uterine cramping. 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 (exceptions include patients with elevated serum AST, ALT >200mg/dL & serum creatinine >1.0mg/dL).

Purpose

To study the impact of Ibuprofen on blood pressure in the immediate postpartum period in women with Preeclampsia on the Perinatal Special Care Unit (PSCU) at Providence St. Vincent Medical Center.

PICOT Question:

In postpartum women with Preeclampsia, does administering Ibuprofen, compared to not administering Ibuprofen, increase blood pressure within 24-96 hours of delivery?



Methods

IRB approved study of patients delivered between 12/30/2016 and 12/31/2017. Total sample of 633 patients who had severe blood pressure (BP \geq 160/105) during their hospital stay.

Inclusion criteria: Preeclampsia diagnosis, postpartum magnesium infusion, with treated severe range blood pressures in postpartum (BP \geq 160/105). N=169. 66 received ibuprofen, 103 did not.

A retrospective chart audit was completed on 44 randomly selected Preeclamptic postpartum patients. Data collected included 22 patients who received ibuprofen and 22 patients who did not.

Mean arterial pressures (MAP) were compared in women who received Ibuprofen versus who did not receive Ibuprofen. A baseline was obtained at 2 hours postpartum. Patient blood pressures from each 24 hour interval were averaged.

The MAPs of the two groups of patients were then compared at the following intervals: **24, 48, 72 and >96 hours**. The MAP for each group at these intervals were compared using t-tests to determine statistical significance.

Results

Results were obtained by comparing a MAP point difference from the baseline. When patient's who **DID** receive Ibuprofen were compared with patient's who did **NOT** receive Ibuprofen, the results indicated no significant changes from baseline. (See Figure 1.)

	Baseline MAP	Change Baseline to 24 hours	Change Baseline to 48 hours	Change Baseline to 72 hours	Change Baseline to 96 hours	Change Baseline to 96+ hours
Ibuprofen Patients	96.5	0.2	-1.1	-0.5	1.2	3.3
No Ibuprofen Patients	97.7	-0.8	-4.2	-0.2	-0.6	2.9
Statistical Significance		p= 0.6759	p= 0.2293	p= 0.9221	p= 0.5424	p= 0.9244

Figure 1. Baseline Blood Pressure Changes

When comparing the average overall MAP pressures between the two groups of patients, there was **no significant increase in blood pressures** at the following time intervals: 24, 48, 72 and > 96 hours. (See Figure 2.)

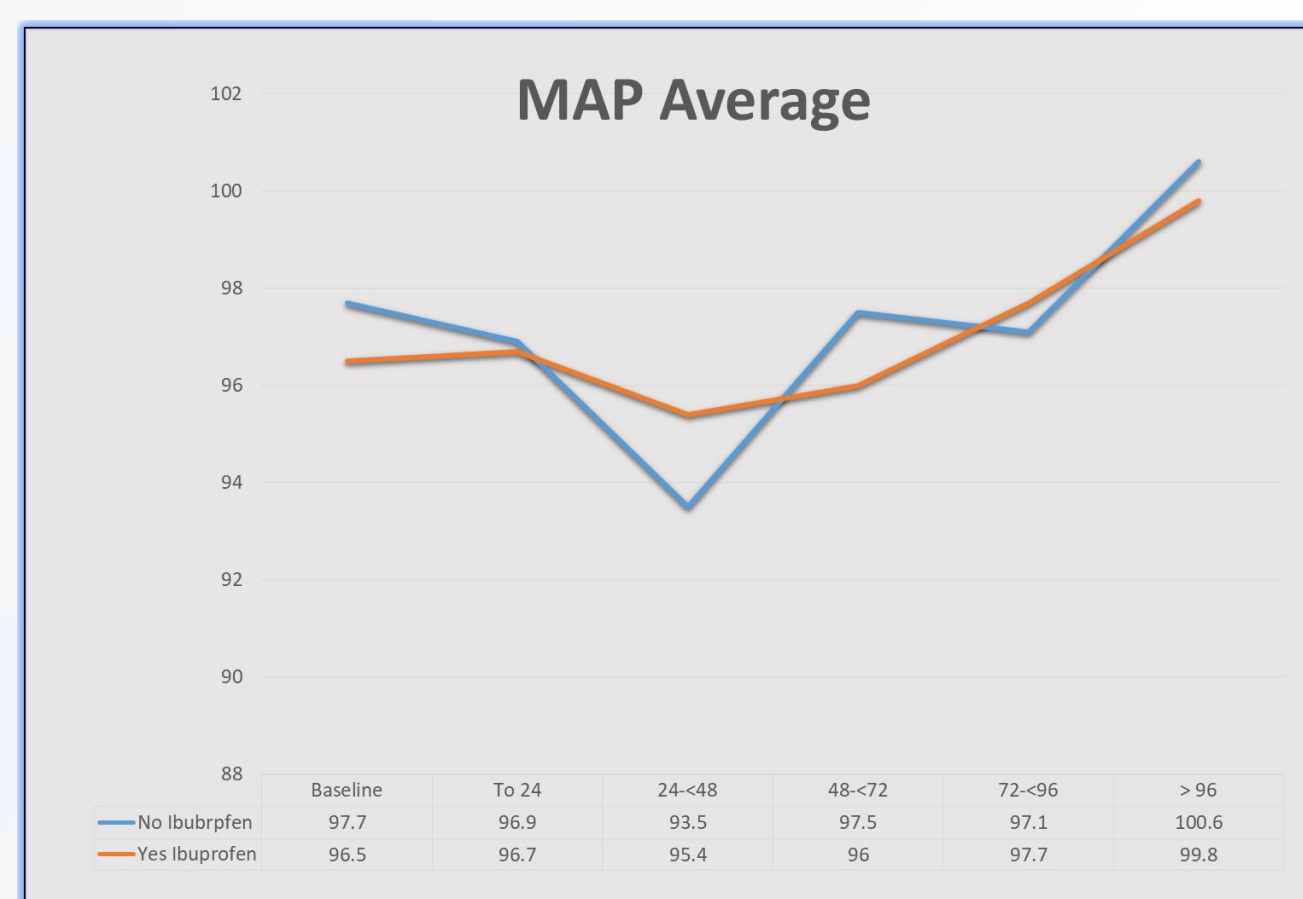


Figure 2. Comparing MAP Results Over 24-96 Hours

Discussion/Conclusions

In conclusion, our data collection results revealed that there was not a significant increase in MAP for Preeclamptic patients who receive Ibuprofen in the postpartum period which is consistent with current literature.

Key limitations of this retrospective chart audit include the limited number of patients obtained for the project. There were many patients available to audit, but the data extraction process was extremely time consuming.

The implications of practice with the ability to use Ibuprofen following the birth will reduce narcotic dependence, provide excellent pain control specific to the postpartum period, and be safe to use in regards to **not** elevating blood pressures in women with Preeclampsia.

Next steps: PSCU will be implementing the new practice of administering Ibuprofen to postpartum patients with Preeclampsia who meet criteria.

References

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