Ibuprofen Does Not Increase Blood Pressure in Preeclampsia

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Objective

The aim of this IRB approved study was to evaluate the impact of ibuprofen on mean arterial pressure (MAP) in the immediate postpartum period of women with preeclampsia.

Background

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

While the United States is facing an opioid epidemic, preeclamptic postpartum women are receiving a greater amount of narcotics for pain control because ibuprofen is not considered safe to use in the postpartum period. The belief is that ibuprofen increases blood pressure in postpartum women with preeclampsia.

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Methods

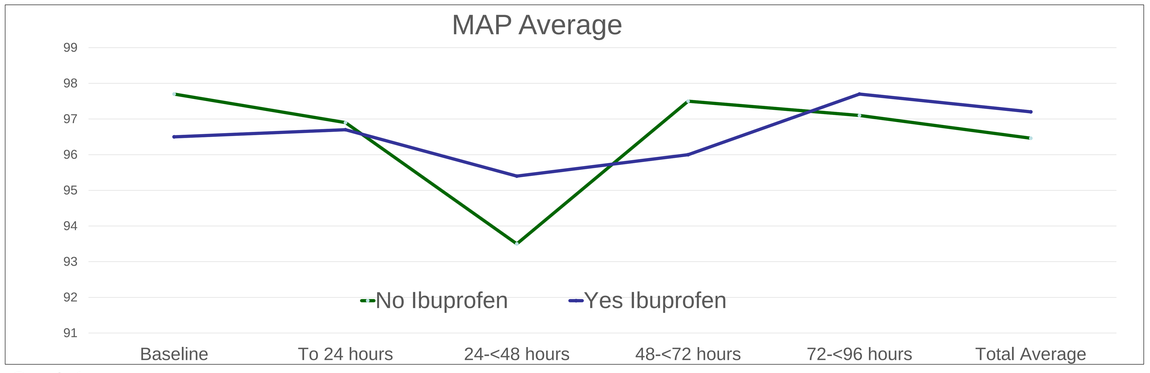
A query identified 633 preeclamptic perinatal patients who delivered at Providence St. Vincent Medical Center, from January 2017 to December 2017, who had severe hypertension (HTN) (BP ≥160/105) during their hospital stay.

A total of 169 patients met our criteria, 66 (39%) received ibuprofen and 103 (61%) did not.
A stratified random sample selected 60 preeclamptic postpartum patients, including 30 who received ibuprofen postpartum and 30 who did not.

Inclusion Criteria:
- Preeclampsia diagnosis
- Magnesium sulfate during the postpartum period
- Treatment for severe HTN after delivery

Exclusion Criteria:
- Patients presenting with a BP ≥160/105 at 2 hours following delivery

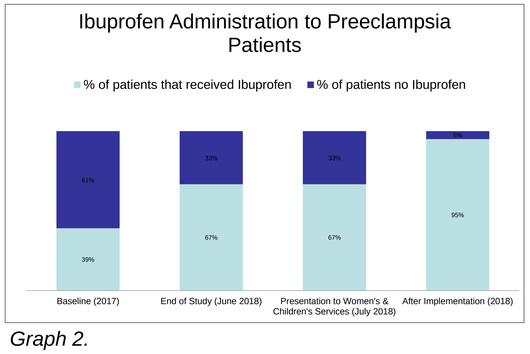
The baseline MAP was obtained at 2 hours postpartum and the MAPs for each 24 hour interval were averaged. The MAPs were compared in women who received ibuprofen versus those who did not. T-tests were used to determine statistical significance between the MAPs of the two groups of patients at the following hourly intervals: 24, 48, 72 and 96. Power calculations were done to ensure adequate sample size.



Graph 1.

Results

The average MAP scores are displayed in Figure 1 and Graph 1. When patients who did receive ibuprofen were compared with patients who did not receive ibuprofen, there was no statistical significant differences in MAP comparisons (baseline [p=0.46], 2 to 24 hours [p=0.46], 24 to 48 hours [p=0.56], 48 to 72 hours [p=0.45], 72 to 96 hours [p=0.49], average of total hours [p=0.48]).



Graph 2.

Average MAP Values with Standard Deviation

Ibuprofen	2 Hour Baseline	2 to 24 Hours	24-<48 Hours	48-<72 Hours	72-96 Hours	Total Average
NO	98.6 ± 7.1	97.1 ± 6.4	95.1 ± 7.4	98.0 ± 8	97.8 ± 6.4	97.2 ± 7.3
YES	96.8 ± 9.9	95.9 ± 6.4	95.6 ± 7.4	96.4 ± 7.0	97.7 ± 6.8	96.5 ± 7.5
p	0.46	0.46	0.56	0.45	0.49	0.48

Figure 1.

Implications for Nursing Practice

Based on our findings, ibuprofen following birth is safe for patients with postpartum preeclampsia and should be included in the pain control plan in order to reduce narcotic use.

Our results demonstrated that there was no significant difference in MAP for preeclampsia patients who received ibuprofen in the postpartum period compared to the patients who did not receive ibuprofen. This finding is consistent with current literature.

Since the completion of our study, the Perinatal Special Care Unit at Providence St. Vincent Medical Center has increased the percentage of ibuprofen administered to preeclamptic postpartum women from 39% to 95%. Graph 2.

Key limitations of this study included the limited sample size that met criteria. Demographic data was not collected on the patients included in this study.

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