Severe-Range Hypertension in the Peripartum Period: Are We Providing Appropriate and Timely Care?

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Severe-Range Hypertension in the Peripartum Period: Are We Providing Appropriate and Timely Care?

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Introduction

- Preeclampsia occurs in 2-8% of pregnant women and can occur with and without severe features.1
- One feature that defines preeclampsia with severe features is elevations of SBP >160mmHg and/or DBP >110mmHg, which can lead to serious adverse maternal and fetal outcomes including death.2,3
- In order to prevent adverse events, the California Maternal Quality Care Collaborative (CMQCC) recommends that patients should be evaluated promptly and receive antihypertensive medications within 60 minutes, and ideally within 30 minutes.4
- Frequent reassessment and administration of escalating doses of antihypertensive medications should occur to decrease the risk of adverse events.4
- LVHN Department of Ob/Gyn established a clinical practice guideline to establish a standardized way to identify and manage severe-range hypertension in the peripartum period (Figure 1).

Problem Statement

This quality improvement project aims to identify whether healthcare providers at LVHN provide timely and appropriate management of severe-range hypertension on the labor and delivery floor, based on the established clinical practice guideline.

Methodology

- Following IRB exemption, a retrospective chart review was performed to identify patients with preeclampsia with severe features in the peripartum period at LVHN during the months of December 2015 to May 2016.
- Patients without SBP >160mmHg or DBP >110mmHg and those who did not receive antihypertensive medication were excluded.
- Management of these patients as compared to the clinical practice guideline at LVHN was analyzed.
- Descriptive statistics were used to assess the distributions of the examined variables.

Results

- 76 patients were identified. Of these, 36 patients remained following exclusion.
- The mean, median, and range of time elapsed between various steps from blood pressure identification to medication administration are reported in Table 1.
- The number of patients who were treated appropriately as defined by the LVHN clinical practice guideline are reported in Figure 2.
- 1 patient received PO nifedipine rather than the recommended IV labetalol or hydralazine.

Conclusions and Future Implications

- On average, healthcare providers met the recommended blood pressure confirmation-to-medication administration time of within 60 and 30 minutes.
- On average, healthcare providers did not meet the recommended time for blood pressure rechecks.
- About 1 out of 4 patients received an incorrect second antihypertensive when found to have persistently severe-range blood pressure upon reassessment.
- These findings allow for a number of health system improvements to be made to increase the quality of patient care at LVHN. These include but are not limited to: physician/midwife notification following first severe-range blood pressure, Epic changes, healthcare professional education, and posting the clinical pathway in an easily-accessible location on the labor & delivery floor for reference.

References:

Table 1. Timing of Various Health System Steps

<table>
<thead>
<tr>
<th>BP Identification to Physician Address Notification (minutes)</th>
<th>Notification to Medication Order (minutes)</th>
<th>Order to Medication Administration (minutes)</th>
<th>BP Identification to Medication Confirmation (minutes)</th>
<th>BP Confirmation to Medication Administration Total (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>5.4</td>
<td>1.2</td>
<td>12.9</td>
<td>40.9</td>
</tr>
<tr>
<td>Median</td>
<td>6.0</td>
<td>0.9</td>
<td>13.0</td>
<td>36.3</td>
</tr>
<tr>
<td>Range</td>
<td>540</td>
<td>0.4</td>
<td>66.3</td>
<td>135.1</td>
</tr>
</tbody>
</table>

Figure 1. Hypertensive Emergency Pathway for Peripartum Patients

Figure 2. Comparison of Time Between Various Stages of BP Identification and Medication Administration