Maternal Hypertension Protocol: Clinical Algorithm for EDs

Delivered in past year?

- Yes
  - Cardiac issues/s—see back page

- No
  - Delivered in past 6 weeks?
    - Yes
      - Female, 18-50 yrs. of age
        - Yes <20 weeks
          - ED Treatment with OB consultation as needed for vaginal bleeding, UCs, etc.
        - Yes >20 weeks
          - ED to OB Transfer
        - No
          - Measure BP
            - SBP≥160 or DBP≥110 HYPERTENSIVE EMERGENCY
              - Immediate OB Consult required:
                - Labs: CBC with platelets, AST, ALT, creatinine, urine dip for protein, UA, LDH & uric acid
                - Initiate antihypertensive immediately per treatment guidelines
                - Consider Magnesium Sulfate IM as ordered by OB consult
            - SBP 140-159 or DBP 90-109 HYPERTENSION
              - OB Consult within 60 minutes:
                - Labs: CBC with platelets, AST, ALT, creatinine, urine dip for protein, UA, LDH & uric acid if ordered by OB
                - Serial BP q 4 hours unless significant change in patient condition
                - If patient's BP increases to SBP≥160 or DBP≥110 then initiate antihypertensive and notify OB if not already present of change in condition
            - SBP≤140 AND DBP<90 NORMAL BP
              - OB Consult PRN and/or upon discharge:
                - Routine ED protocol per diagnostic criteria
                - Notify OB if BP changes
                - Plan for transitional care management and notification of OB that patient was seen in the ED upon admission and/or discharge
    - No
      - Is the patient pregnant?
        - Yes
          - Transfer to L&D and Communicate:
            - Suspicion of Preeclampsia
            - Symptoms
            - VS including BP
            - Any pertinent prenatal and past history
          - Consult OB at higher level of care and initiate transfer as needed. Plan for same report as an internal transfer and proceed
        - No
          - Measure BP
            - SBP≥160 OR DBP≥110 HYPERTENSIVE EMERGENCY
              - Immediate OB Consult (≤30 minutes) if SBP≥160 or DBP≥110 (Hypertensive Emergency)
                - Hypertensive emergency: SBP≥160 or DBP≥110, initiate antihypertensive immediately per treatment guidelines
                - Labs: CBC with platelets, AST, ALT, creatinine, urine dip for protein, UA, LDH & uric acid
                - Consider Magnesium Sulfate IM as ordered by OB consult
          - OB Consult <60 minutes if SBP 140-159 or DBP 90-109 Hypertension
            - Labs: CBC with platelets, AST, ALT, creatinine; urine dip for protein, UA, LDH & uric acid
            - Serial BP q 4 hours unless significant change in patient condition
            - Assess for headache, visual complaints, RUQ pain, altered mental status, CVA, seizure, SOB, pulmonary edema, major trauma
            - Persistent nausea, vomiting
            - If patient's BP increases to SBP≥160 or DBP≥110 then initiate antihypertensives and magnesium and notify OB of change in condition if not already present

<table>
<thead>
<tr>
<th>IV LABETALOL as Primary</th>
<th>IV HYDRAZINE as Primary</th>
<th>PO NIFEDIPINE as Primary</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Administer labetalol 20 mg IV over 2 min</td>
<td>• Administer hydralazine 5 or 10 mg IV</td>
<td>• Administer immediate release nifedipine capsules 10 mg po</td>
</tr>
<tr>
<td>• Repeat BP in 10 min</td>
<td>• Repeat BP in 20 min</td>
<td>• Repeat BP in 20 min</td>
</tr>
<tr>
<td>◦ If BP threshold is still exceeded, administer labetalol 40 mg IV</td>
<td>◦ If BP threshold is still exceeded, administer hydralazine 10 mg IV</td>
<td>◦ If BP threshold is still exceeded, administer immediate release nifedipine capsules 20 mg po</td>
</tr>
<tr>
<td>◦ If SBP &lt; 160 and DBP &lt; 110, continue to monitor closely</td>
<td>◦ If SBP &lt; 160 and DBP &lt; 110, continue to monitor closely</td>
<td>◦ If SBP &lt; 160 and DBP &lt; 110, continue to monitor closely</td>
</tr>
<tr>
<td>• Repeat BP in 10 min</td>
<td>• Repeat BP in 20 min</td>
<td>• Repeat BP in 20 min</td>
</tr>
<tr>
<td>◦ If BP threshold is still exceeded, administer labetalol 80 mg IV</td>
<td>◦ If BP threshold is still exceeded, administer labetalol 20 mg IV</td>
<td>◦ If BP threshold is still exceeded, administer immediate release nifedipine capsules 20 mg po</td>
</tr>
<tr>
<td>◦ If SBP &lt; 160 and DBP &lt; 110, continue to monitor closely</td>
<td>◦ If SBP &lt; 160 and DBP &lt; 110, continue to monitor closely</td>
<td>◦ If SBP &lt; 160 and DBP &lt; 110, continue to monitor closely</td>
</tr>
<tr>
<td>• Repeat BP in 10 min</td>
<td>• Repeat BP in 20 min</td>
<td>• Repeat BP in 10 min</td>
</tr>
<tr>
<td>◦ If BP threshold is still exceeded, administer hydralazine 10 mg IV over 2 min</td>
<td>◦ If BP threshold is still exceeded, administer labetalol 20 mg IV</td>
<td>◦ If BP threshold is still exceeded, administer immediate release nifedipine capsules 20 mg po</td>
</tr>
<tr>
<td>◦ If SBP &lt; 160 and DBP &lt; 110, continue to monitor closely</td>
<td>◦ If SBP &lt; 160 and DBP &lt; 110, continue to monitor closely</td>
<td>◦ If SBP &lt; 160 and DBP &lt; 110, continue to monitor closely</td>
</tr>
<tr>
<td>• Repeat BP in 20 min; if BP threshold is still exceeded, obtain emergent consultation from maternal-fetal medicine, internal medicine, anesthesiology, or critical care.</td>
<td>• Repeat BP in 20 min; if BP threshold is still exceeded, obtain emergent consultation from maternal-fetal medicine, internal medicine, anesthesiology, or critical care.</td>
<td>• Repeat BP in 20 min; if BP threshold is still exceeded, obtain emergent consultation from maternal-fetal medicine, internal medicine, anesthesiology, or critical care.</td>
</tr>
<tr>
<td>◦ If SBP &lt; 160 and DBP &lt; 110, continue to monitor closely</td>
<td>◦ If SBP &lt; 160 and DBP &lt; 110, continue to monitor closely</td>
<td>◦ If SBP &lt; 160 and DBP &lt; 110, continue to monitor closely</td>
</tr>
<tr>
<td>• Once target BP achieved, monitor BP q10 min for 1 hour, q15 min for 2nd hour, q30 min for 3rd hour</td>
<td>• Once target BP achieved, monitor BP q10 min for 1 hour, q15 min for 2nd hour, q30 min for 3rd hour</td>
<td>• Once target BP achieved, monitor BP q10 min for 1 hour, q15 min for 2nd hour, q30 min for 3rd hour</td>
</tr>
</tbody>
</table>

**Magnesium**

**Initial Treatment in the ED:**
- Consult with OB and if ordered, give Magnesium Sulfate 5 grams IM x 2 doses;
- Close observation for signs of toxicity
  - Disappearance of deep tendon reflexes
  - Decreased RR, shallow respirations, shortness of breath
  - Heart block, chest pain
  - Pulmonary edema
- Place Calcium Gluconate at bedside as reversal agent; follow ED anti-seizure protocol; give Ativan if patient seize

**Cardiac S/S:** Prompt evaluation by obstetrics and cardiology providers (if currently pregnant or was pregnant within the past year):
- Orthopnea ≥ 3 pillows
- Asthma unresponsive to therapy
- Shortness of breath without activity
- New onset chest pain
- Resting HR ≥ 119
- Systolic blood pressure of ≥ 160 mmHg or diastolic ≥ 110 mmHg
- Resting respiratory rate of ≥ 29
- Oxygen saturations at or below 94%
- Syncope