Maternal Hypertension Protocol: Clinical Algorithm for EDs

- **Delivered in past year?**
  - Yes → **Is the patient pregnant?**
    - Yes → **Plan 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 anti-hypertensive immediately per treatment guidelines
          • Consider Magnesium Sulfate IM as ordered by OB consult
          • 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
      - **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 q1hr unless significant change in patient condition
          • If patient's BP increases to SBP > 160 or DBP > 110 then initiate anti-hypertensive and notify OB if not already present of change in condition
      - **SBP ≤ 140 AND DBP ≤ 90 NORMAL BP**
        - Yes → **If in-house OB Consult**
          • Transfer to L&D and Communicate:
            • Suspicion of maternal HTN and/or Preeclampsia
            • Symptoms
            • VS including BP
            • Any pertinent prenatal and past history
        - NO → **If no in-house OB Consult OB at higher level of care and initiate transfers as needed. Plan for same report as an internal transfer and proceed**

- **Delivered in past 6 weeks?**
  - Yes → **Clinical Features**
    • Headache, visual complaints, altered mental status, CVA, seizure
    • Abdominal pain—especially RUQ, epigastric pain
    • Persistent nausea, vomiting
    • SOB, pulmonary edema
  - NO → **If the patient pregnant?**
    - Yes → **ED Treatment with OB consultation as needed for vaginal bleeding, UCs, etc.**
    - NO → **Measures 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 anti-hypertensive immediately per treatment guidelines
          • Consider Magnesium Sulfate IM as ordered by OB consult
          • OB Consult PRN and/or upon discharge:
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          • Serial BP q1hr unless significant change in patient condition
          • If patient's BP increases to SBP > 160 or DBP > 110 then initiate anti-hypertensive and notify OB if not already present of change in condition
      - **SBP ≤ 140 AND DBP ≤ 90 NORMAL BP**
        - Yes → **Consider Cardiac issue s/s – see back page**

- **Is the patient pregnant?**
  - Yes <20 weeks
    - Yes → **ED Treatment with OB consultation as needed for vaginal bleeding, UCs, etc.**
    - 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 anti-hypertensive immediately per treatment guidelines
          • Consider Magnesium Sulfate IM as ordered by OB consult
          • OB Consult PRN and/or upon discharge:
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          • Labs: CBC with platelets, AST, ALT, creatinine; urine dip for protein, UA, LDH & uric acid
          • Serial BP q1hr unless significant change in patient condition
          • If patient's BP increases to SBP > 160 or DBP > 110 then initiate anti-hypertensive and notify OB if not already present of change in condition
      - **SBP ≤ 140 AND DBP ≤ 90 NORMAL BP**
        - Yes → **If in-house OB Consult**
          • Transfer to L&D and Communicate:
            • Suspicion of maternal HTN and/or Preeclampsia
            • Symptoms
            • VS including BP
            • Any pertinent prenatal and past history
          • Labs: CBC with platelets, AST, ALT, creatinine; urine dip for protein, UA, LDH & uric acid
          • 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 anti-hypertensives and notify OB if change in condition if not already present
        - NO → **If no in-house OB Consult OB at higher level of care and initiate transfers as needed. Plan for same report as an internal transfer and proceed**

**References:**
1st Line Anti-Hypertension Treatment in the ED setting:
IV Labetalol or Hydralazine; if no IV access, give immediate release oral nifedipine
Target BP: 140–150/90–100 mm Hg (BP < 140/90 = decreased fetal perfusion)

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

Initial Treatment in the ED:
• Consult with OB and if ordered, give Magnesium Sulfate 5 grams IM x 2 doses or IV load bolus per protocol
• 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 stat if patient seizing

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