EMERGENCY DEPARTMENT RECOGNITION and TREATMENT: FOCUS ON DELAYED POSTPARTUM PREECLAMPSIA and ECLAMPSIA

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BACKGROUND:
Hypertensive disorders including preeclampsia and eclampsia are one of the leading causes of maternal morbidity and mortality. While there has been an overall decrease in the frequency of eclampsia, the frequency of postpartum and delayed eclampsia has increased\(^1\) making it more common for patients to present to the Emergency Department (ED) with symptoms. Postpartum or delayed preeclampsia/eclampsia is frequently associated with Posterior Reversible Encephalopathy Syndrome (PRES; see pg. 88). Although obstetric consultation is warranted in every case of preeclampsia, emergency physicians should be knowledgeable of and comfortable with the initial management. Since many of these patients will present to an ED, education of ED personnel and application of diagnosis and treatment protocols are important steps in reducing morbidity and mortality associated with postpartum preeclampsia and eclampsia. Emergency physicians should have a higher index of suspicion in order to improve the recognition and treatment of postpartum preeclampsia and eclampsia. This may require gathering historical information regarding a recent pregnancy from family members; it is important to remember that:

1. Up to 26\(\%\) of eclamptic seizures occur beyond 48 hours and as late as four to six (4-6) weeks after delivery.\(^1,2\) However, most of these cases occur in the first seven (7) days after delivery.\(^3\)

2. As many as 78\(\%\) of these patients have no previous diagnosis of hypertensive disease with the antecedent pregnancy.\(^2,3\)

3. If medical records are not immediately available, treating personnel may have no knowledge that the patient has recently delivered, resulting in a decreased index of suspicion.\(^4\)

4. While the clinical presentation of delayed postpartum preeclampsia may be atypical, the most common complaint is headache in up to 69\(\%\) of patients.\(^3\) Headache in a recently pregnant patient will likely be isolated but should prompt an investigation into the possibility of delayed postpartum preeclampsia.

Seizures in the first and early second trimester (< 20 weeks) or well into the postpartum period probably are due to Central Nervous System (CNS) pathology and warrant full evaluation, including computed tomography (CT) scanning of the head, lumbar puncture (if clinical evidence of meningitis or concern for hemorrhage exists), determination of electrolyte levels and urine or serum toxicologic screening. Do not overlook other neurologic causes of seizure, particularly if the seizure occurs more than 24-48 hours after delivery.

RECOMMENDATIONS FOR QUALITY IMPROVEMENT:
1. ED triage protocols must identify patients who are currently pregnant or have delivered in the previous six (6) weeks. If the patient’s medical records are not available, then simple questioning of the patient, family, Emergency Medical Services (EMS), etc., may provide this information. This information must then be clearly communicated to the treatment team.

2. ED personnel should be familiar with the risk factors and characteristics of delayed postpartum preeclampsia and eclampsia.

3. Do not overlook other neurologic causes of seizure, particularly if the seizure occurs more than 48 hours after delivery.

4. Implementation of the CMQCC protocol (see Appendix F, pg.108-109) protocol for diagnosis and treatment of preeclampsia and eclampsia in the Emergency Department. This can be reinforced through the use of educational tools in other sections of this toolkit and with the use of drills and simulations.

EVIDENCE GRADING
Level of Evidence: C

REFERENCES


PART 1 of 2: Diagnosis: Evaluation and Treatment of Antepartum and Postpartum Preeclampsia and Eclampsia in the Emergency Department

**Evaluation and Treatment of Antepartum and Postpartum Preeclampsia and Eclampsia in the Emergency Department**

**Female age 15-50 presents to ED Triage**

- **Is the patient pregnant?**
  - Yes <20 wks
  - Yes >20 wks

- **Delivered in last 6 weeks?**
  - Yes

- **L&D Transfer Protocol?**
  - Yes

**Symptoms?**
- Headache, visual complaints, altered mental status, CVA, seizure
- Abdominal pain, especially RUQ, epigastric pain
- Persistent nausea, vomiting
- SOB, pulmonary edema
- Measure BP

**Immediate OB Consult (<10 Min)**
- Headache, visual complaints, altered mental status, CVA, seizure
- Abdominal pain, especially RUQ, epigastric pain
- Persistent nausea, vomiting
- SOB, pulmonary edema
- Hypertensive emergency: SBP>160 or DBP>105-110
- Major Trauma

**OB Consult <60 min**
- Labs: CBC, AST, ALT, Urine dip for protein, UA, LDH & Uric acid
- Serial BP
- OB Consult
- Notify if changes
- NOTE: If patient’s BP increases to SBP>160 or DBP>105 then initiate anti-hypertensives and magnesium and notify OB if change in condition if not already present

**SBP>160 OR DBP>105 HYPERTENSIVE EMERGENCY**
- Order LABS: CBC, AST, ALT, Urine dip for protein, UA, LDH & Uric acid
- Immediate OB Consult
- Initiate anti-hypertensives and magnesium immediately per treatment guidelines

**SBP 140-159 OR DBP 90-105 HYPERTENSION**
- Order LABS: CBC, AST, ALT, Urine dip for protein, UA, LDH & Uric acid
- Serial BP
- OB Consult
- Notify if changes
- NOTE: If patient’s BP increases to SBP>160 or DBP>105 then initiate anti-hypertensives and magnesium and notify OB if change in condition if not already present

**SBP<140 OR DBP<80 NORMAL BP**
- Order LABS: CBC, AST, ALT, Urine dip for protein, UA, LDH & Uric acid
- Serial BP
- OB Consult
- Notify if changes
- NOTE: If patient’s BP increases to SBP>160 or DBP>105 then initiate anti-hypertensives and magnesium and notify OB if change in condition if not already present

**ED Treatment with OB consultation as needed for vaginal bleeding, hypertension, etc.**

**Transfer to L&D and Communicate:**
1. Suspicion of Preeclampsia
2. Symptoms
3. VS including BP
4. Any pertinent prenatal and past history

**Consult OB for OB Medical Screening Exam in ED; initiate transfer to higher level of care as needed**

Evaluation confirms diagnosis of Preeclampsia

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Part 2 of 2: Treatment: Evaluation and Treatment of Antepartum and Postpartum Preeclampsia and Eclampsia in the Emergency Department

Evaluation and Treatment of Antepartum and Postpartum Preeclampsia and Eclampsia in the Emergency Department

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Magnesium</th>
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<tbody>
<tr>
<td><strong>1st Line Anti-Hypertensive Treatment:</strong> Labetalol &amp; Hydralazine* Target BP: 140-160/80-100 (BP&lt;140/90 = decreased fetal perfusion) See CMQCC Preeclampsia Toolkit for &quot;Antihypertensives in Preeclampsia&quot; for 2nd line therapy</td>
<td><strong>Initial Treatment</strong></td>
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<tr>
<td>1. Administer Labetalol 20 mg IV</td>
<td>1. Loading Dose: 4-6 gm over 15-20 min</td>
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<td>2. Repeat BP in 10 min</td>
<td>2. Maintenance 1-2 gm/hr</td>
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<tr>
<td>• If BP threshold is still exceeded, administer labetalol</td>
<td>3. Close observation for signs of toxicity</td>
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<tr>
<td>• If SBP&lt;160 and DBP&lt;100, continue to monitor closely</td>
<td>• Disappearance of deep tendon reflexes</td>
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<td>3. Repeat BP in 10 min</td>
<td>• Decreased RR, shallow respirations, shortness of breath</td>
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<tr>
<td>• If BP threshold is still exceeded, administer labetalol 80 mg IV</td>
<td>• Heart block, chest pain</td>
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<tr>
<td>• If SBP&lt;160 and DBP&lt;100, continue to monitor BP closely</td>
<td>• Pulmonary edema</td>
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<tr>
<td>4. Repeat BP in 10 min</td>
<td><strong>If Patient Seizes While on Magnesium:</strong></td>
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<tr>
<td>• If BP threshold is still exceeded, administer hydralazine 10 mg IV</td>
<td>1. Secure airway and maintain oxygenation</td>
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<tr>
<td>• If SBP&lt;160 and DBP&lt;100, continue to monitor closely</td>
<td>2. Give 2nd loading dose of 3 gm Magnesium over 5 min</td>
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<tr>
<td>5. 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>3. If patient seizes after 2nd magnesium bolus, consider the following:</td>
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<tr>
<td>6. Once target BP achieved, monitor BP q10 min for 1 hour, q 15 min for 2nd hour</td>
<td>• Midazolam 1-2 mg IV, may repeat in 5-10 min OR</td>
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<tr>
<td><strong>HYDRAZALINE as Primary Anti-Hypertensive</strong></td>
<td>• Lorazepam 2 mg IV-may repeat OR</td>
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<tr>
<td>1. Administer hydralazine 5 or 10 mg IV</td>
<td>• Diazepam 5-10 mg IV, May repeat q15 min to max of 30 mg</td>
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<tr>
<td>2. Repeat BP in 20 min</td>
<td>• Phenytoin 1 g IV over 20 min</td>
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<tr>
<td>• If BP threshold is still exceeded, administer hydralazine 10 mg IV</td>
<td><strong>Seizures Resolve</strong></td>
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<tr>
<td>• If SBP&lt;160 and DBP&lt;100, continue to monitor BP closely</td>
<td>1. Maintain airway and oxygenation</td>
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<tr>
<td>3. Repeat BP in 20 min, if BP threshold is still exceeded, administer labetalol 40 mg IV and obtain emergent consultation from maternal-fetal medicine, internal medicine, anesthesiology, or critical care</td>
<td>2. Monitor VS, cardiac rhythm/ECG for signs of medication toxicity</td>
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<tr>
<td>• If SBP&lt;160 and DBP&lt;100, continue to monitor closely</td>
<td>3. Consider brain imaging for:</td>
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<td>5. Once target BP achieved, monitor BP q10 min for 1 hour, q 15 min for 2nd hour</td>
<td>• Head trauma</td>
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<td>*Labetalol and Hydralazine recommendations based on 2013 ACOG Committee Opinion #33 and Practice Bulletin #33, Reaffirmed 2012</td>
<td>• Fecal seizure</td>
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<td>v 10.21.13</td>
<td>• Focal neurologic findings</td>
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<td></td>
<td>• Other neurologic diagnosis is suspected</td>
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