

---

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

Mark Meyer, MD, Kaiser Permanente, San Diego

### **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<sup>1</sup> 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.<sup>1,2</sup> However, most of these cases occur in the first seven (7) days after delivery.<sup>3</sup>
2. As many as 78% of these patients have no previous diagnosis of hypertensive disease with the antecedent pregnancy.<sup>2,3</sup>
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.<sup>4</sup>
4. While the clinical presentation of delayed postpartum preeclampsia may be atypical, the most common complaint is headache in up to 69% of patients.<sup>3</sup> 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.

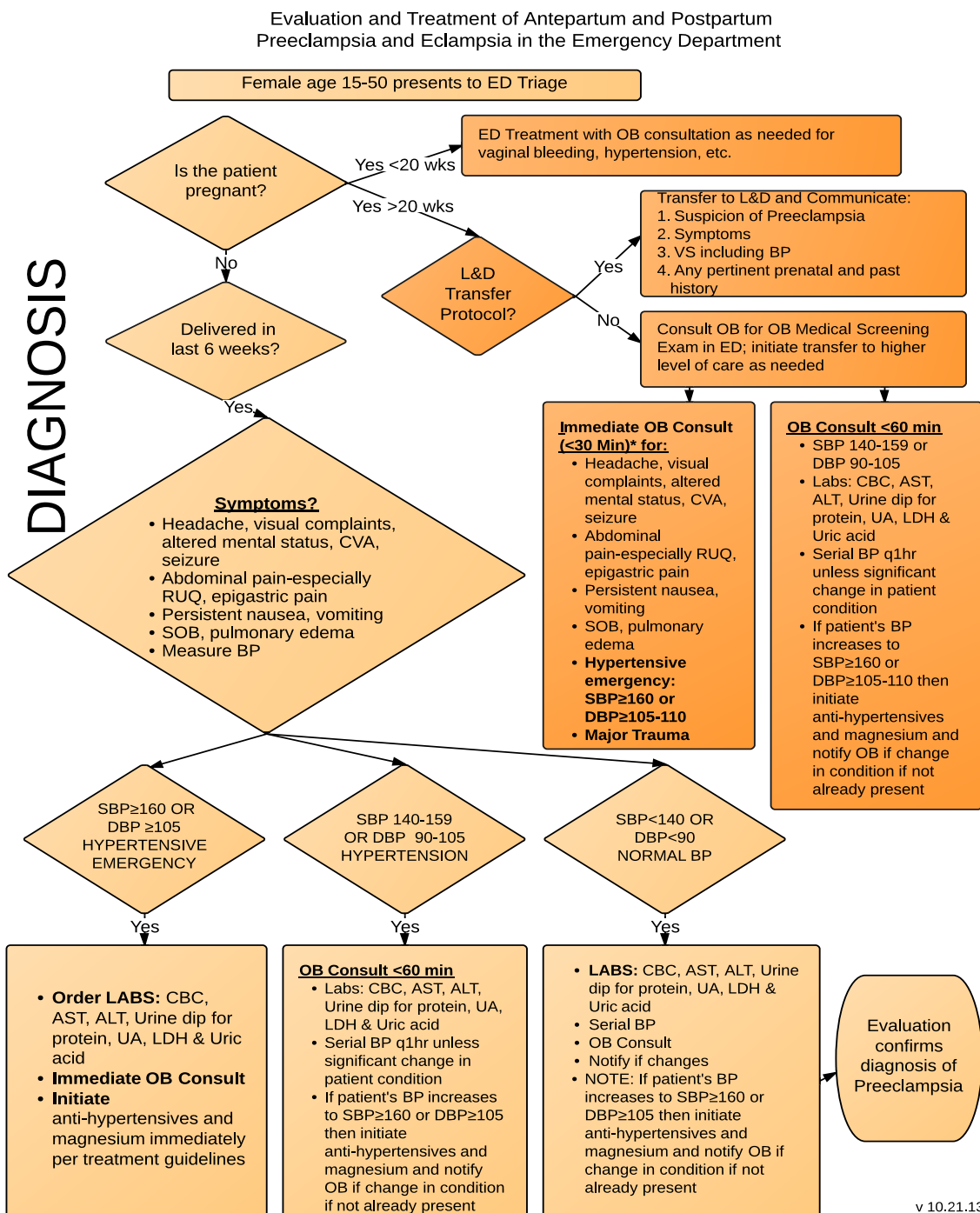
#### EVIDENCE GRADING

Level of Evidence: C

#### REFERENCES

1. Chames M, Livingston J, Ivester T, Barton J, Sibai B. Late postpartum eclampsia: a preventable disease? *Am J Obstet Gynecol.* 2002;186:1174-1177.
2. Matthys L, Coppage K, Lambers D, Barton J, Sibai B. Delayed postpartum preeclampsia: an experience of 151 cases. *Am J Obstet Gynecol.* 2004;190:1464-1466.
3. Al-Safi Z, Imudia A, Filetti L, Hobson D, et al. Delayed postpartum preeclampsia and eclampsia: demographics, clinical course, and complications. *Obstet Gynecol.* 2011;118(5):1102-1107.
4. The Joint Commission. Preventing Maternal Death. Sentinel Event Alert. Issue 44. 2010;  
[http://www.jointcommission.org/sentinal\\_event\\_alert\\_issue\\_44\\_preventing\\_maternal\\_death](http://www.jointcommission.org/sentinal_event_alert_issue_44_preventing_maternal_death). Accessed January 26, 2010.

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



## 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

# TREATMENT

**1st Line Anti-Hypertensive Treatment:** Labetalol & Hydralazine\*  
Target BP: 140-160/90-100 (BP<140/90 = decreased fetal perfusion)  
See CMQCC Preeclampsia Toolkit for "Antihypertensives in Preeclampsia" for 2nd line therapy

#### LABETALOL as Primary Anti-Hypertensive

- Administer Labetalol 20 mg IV
- Repeat BP in 10 min
  - If BP threshold is still exceeded, administer labetalol
  - If SBP<160 and DBP<100, continue to monitor closely
- Repeat BP in 10 min
  - If BP threshold is still exceeded, administer labetalol 80 mg IV
  - If SBP<160 and DBP<100, continue to monitor BP closely
- Repeat BP in 10 min
  - If BP threshold is still exceeded, administer hydralazine 10 mg IV
  - If SBP<160 and DBP<100, continue to monitor closely
- Repeat BP in 20 min; if BP threshold is still exceeded, obtain emergent consultation from maternal-fetal medicine, internal medicine, anesthesiology, or critical care
- Once target BP achieved, monitor BP q10 min for 1 hour, q 15 min for 2nd hour

#### HYDRALAZINE as Primary Anti-Hypertensive

- Administer hydralazine 5 or 10 mg IV
- Repeat BP in 20 min
  - If BP threshold is still exceeded, administer hydralazine 10 mg IV
  - If SBP<160 and DBP<100, continue to monitor closely
- Repeat BP in 20 min
  - If BP threshold is still exceeded, administer labetalol 20 mg IV
  - If SBP<160 and DBP<100, continue to monitor BP closely
- Repeat BP in 10 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
  - If SBP<160 and DBP<100, continue to monitor closely
- Once target BP achieved, monitor BP q10 min for 1 hour, q 15 min for 2nd hour

## Magnesium

#### Initial Treatment

- Loading Dose: 4-6 gm over 15-20 min
- Maintenance 1-2 gm/hr
- Close observation for signs of toxicity
  - Disappearance of deep tendon reflexes
  - Decreased RR, shallow respirations, shortness of breath
  - Heart block, chest pain
  - Pulmonary edema

#### If Patient Seizes While on Magnesium:

- Secure airway and maintain oxygenation
- Give 2nd loading dose of 2 gm Magnesium over 5 min
- If patient seizes after 2nd magnesium bolus, consider the following:
  - Midazolam 1-2 mg IV; may repeat in 5-10 min **OR**
  - Lorazepam 2 mg IV-may repeat **OR**
  - Diazepam 5-10 mg IV. May repeat q15 min to max of 30 mg
  - Phenytoin 1 g IV over 20 min

#### Seizures Resolve

- Maintain airway and oxygenation
- Monitor VS, cardiac rhythm/ECG for signs of medication toxicity
- Consider brain imaging for:
  - Head trauma
  - Focal seizure
  - Focal neurologic findings
  - Other neurologic diagnosis is suspected

\*Labetalol and Hydralazine recommendations based on 2011 ACOG Committee Opinion #514 and Practice Bulletin #33, Reaffirmed 2012