Elevated Blood Pressure in Pregnancy and up to 6 Weeks Postpartum

General

- Elevated blood pressure (BP) in pregnancy can indicate severe disease and can result in both maternal and fetal morbidity and mortality. Elevated BP after *20 weeks of gestation and up to 6 weeks postpartum* requires special attention and treatment.
- Vital signs of concern in a pregnant or postpartum patient:

SBP 140–159 or DBP 90–109 mm Hg: Abnormal, possible preeclampsia

SBP 140–159 or DBP 90–109 mm Hg with ANY of the following: severe headache, blurred vision, or right upper quadrant or epigastric abdominal pain: Abnormal, preeclampsia with severe features

- Requires treatment with **MAGNESIUM SULFATE**

SBP ≥ 160 or DBP ≥ 110 mm Hg: Abnormal, preeclampsia with severe features, even without other symptoms

- Requires treatment with **ANTIHYPERTENSIVES AND MAGNESIUM SULFATE**

- This is a time-critical disease. Develop a plan or local policy to provide treatment within **30–60 minutes**. This may include requesting an intercept from a paramedic-staffed response or transport vehicle and/or developing clinical protocols and agreements with local hospital facilities.
- In clinical situations in which **antihypertensives** and **magnesium sulfate** are indicated, **antihypertensive** medications are the highest priority.
- An elevated BP may be the only abnormal vital sign. Do not ignore asymptomatic high BP!
- Transport the patient to a hospital with obstetric services or the most appropriate local/regional facility if an obstetric facility is not readily available.
- Although nitroglycerin is widely available in the prehospital environment, there is no evidence to support the use of nitroglycerin in lowering BP in pregnant or postpartum patients.

All EMS Clinicians

- Perform an initial assessment.
- Be prepared to manage the patient's airway, provide supplemental **oxygen** for maternal oxygen saturation ≤94%, and assist with ventilation.
- Initiate an IV for medication administration, if able.
- Monitor vital signs. Recheck BP at least every 15 minutes.
- If the patient begins seizing, refer to the Eclampsia model guideline.

Advanced EMS Clinicians

May include advanced EMTs, paramedics, and other advanced-level clinicians with medication administration capabilities

1. ADMINISTER ONE OF THE ANTIHYPERTENSIVE AGENTS AS OUTLINED BELOW IF:

SBP ≥ 160 or DBP ≥ 110 mm Hg is persistent for 15 minutes

- **Labetalol**: Avoid if the patient has a history of asthma OR is bradycardic.
  - Initial dose: 20 mg IV, given over 2 minutes. Allow 10 minutes from the time of administration for the medication to take effect.
  - If BP remains severely elevated (SBP ≥ 160 or DBP ≥ 110 mm Hg), then give 40 mg IV over 2 minutes. Reassess BP in 10 minutes.
  - If repeat BP is still SBP ≥ 160 or DBP ≥ 110 mm Hg, then give 80 mg IV over 2 minutes every 10 minutes up to a maximum cumulative dosage of 300 mg or continuous infusion of 1–2 mg/min IV.

OR

- **Hydralazine:**
  - Initial dose: 5 mg IV, given over 2 minutes, or IM. Allow 20 minutes from the time of administration for the medication to take effect.
  - If BP remains severely elevated (SBP ≥ 160 or DBP ≥ 110 mm Hg), then give 10 mg IV over 2 minutes every 20 minutes to a maximum cumulative dosage of 20 mg or continuous infusion of 0.5–10 mg/h.

OR

- **Nifedipine (immediate release):** If no IV access initially, choose **nifedipine.**
  - Initial dose: 10 mg orally (not sublingual). Allow 20 minutes from the time of administration for the medication to take effect.
  - If BP remains severely elevated (SBP ≥ 160 or DBP ≥ 110 mm Hg), then give 20 mg every 20 minutes to a maximum daily dose of 180 mg.

Target BP: SBP 130–150 AND DBP 80–100 mm Hg

- Once target BP is achieved, monitor BP per protocol until arrival at destination.
- During monitoring, if BP elevates back up to SBP ≥ 160 or DBP ≥ 110 mm Hg, readminister antihypertensives using the same medication and dose that previously achieved the target BP.

2. ADMINISTER MAGNESIUM SULFATE AS OUTLINED BELOW IF:

For SBP ≥ 160 mm Hg or DBP ≥ 110 mm Hg

OR

SBP 140–159 or DBP 90–109 mm Hg with ANY of the following: *severe headache, blurred vision, or right upper quadrant or epigastric abdominal pain*

- **Magnesium sulfate:** 4-g IV loading dose, administered over 20 minutes.
  - If IV access cannot be obtained, a 10-g IM loading dose of **magnesium sulfate** (5 g in each buttock) may be administered. The medication can be mixed with 1 mL of a 2% lidocaine solution, if available, to reduce discomfort. There are no data on IO administration of magnesium sulfate in the setting of preeclampsia with severe features or in eclampsia.
  - **Maintenance dosing**: After administering the loading dose, begin an infusion at a rate of 2 g/h IV. Maintenance infusion of **magnesium sulfate** should be administered via infusion pump, if available.

Reference

Chronic hypertension in pregnancy. ACOG Practice Bulletin No. 203. American College of Obstetricians and Gynecologists. Obstet Gynecol 2019;133:e26–50.