Maternal Hypertension Protocol: Clinical Algorithm for EDs

Rev. 04/27/2020

Female, 15-50 yrs. of age

Is the patient pregnant?

No

Delivered in past year?

Yes

Consider Cardiac issue s/s – see back page

No

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

Measure BP

SBP ≥160 OR DBP ≥110 HYPERTENSIVE EMERGENCY

Yes

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

SBP 140-159 OR DBP 90-109 HYPERTENSION

Yes

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

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

Yes <20 weeks

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

Yes >20 weeks

Plan ED to OB Transfer

Yes

If in-house OB: 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 transfer as needed. Plan for same report as an internal transfer and proceed

Immediate OB Consult (<30 minutes) if SBP ≥160 or DBP ≥110 (Hypertensive Emergency)

- Hypertensive emergency: SBP ≥160 or DBP ≥110 , initiate anti-hypertensive 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

- Serial BP q1hr unless significant change in patient condition
- 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 magnesium and notify OB of change in condition if not already present

References: ACOG. (2019). ACOG Committee Opinion No. 767: Emergent therapy for acute-onset, severe hypertension during pregnancy and the postpartum period. Obstetrics and Gynecology, 133(2), e174-e180; CMQCC. (2017, November). Improving Health Care Response to Cardiovascular Disease in Pregnancy and Postpartum Toolkit.

Adapted from the New York State Department of Health.

Treatment Recommendations

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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)

IV LABETALOL as Primary

- Administer labetalol 20 mg IV over 2 min
- Repeat BP in 10 min
  - If BP threshold is still exceeded, administer labetalol 40 mg IV
  - If SBP <160 and DBP <110, 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 <110, continue to monitor closely
- Repeat BP in 10 min
  - If BP threshold is still exceeded, administer hydralazine 10 mg IV over 2 min
  - If SBP <160 and DBP <110, 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, q15 min for 2nd hour, q30 min for 3rd hour

IV HYDRALAZINE as Primary

- 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 <110, 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 <110, continue to monitor closely
- Repeat BP in10 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 <110, continue to monitor closely
- Once target BP achieved, monitor BP q10 min for 1 hour, q15 min for 2nd hour, q30 min for 3rd hour

PO NIFEDIPINE as Primary

- Administer immediate release nifedipine capsules 10 mg po
- Repeat BP in 20 min
  - If BP threshold is still exceeded, administer immediate release nifedipine capsules 20 mg po
  - If SBP <160 and DBP <110, continue to monitor closely
- Repeat BP in 20 min
  - If BP threshold is still exceeded, administer immediate release nifedipine capsules 20 mg po
  - If SBP <160 and DBP <110, continue to monitor closely
- Repeat BP in 20 min
  - If BP threshold is still exceeded, administer labetalol 20 mg IV and obtain emergent consultation from maternal-fetal medicine, internal medicine, anesthesiology, or critical care
  - If SBP <160 and DBP <110, continue to monitor closely
- Once target BP achieved, monitor BP q10 min for 1 hour, q15 min for 2nd hour, q30 min for 3rd hour

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 seizes

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