Hospital Policy and Procedure Manual Maternal Child Health Manual
Title: *Management of Hypertensive Disorders of Pregnancy*
Author/Reviewer: Maternal Child Health Educator
IMPORTANT NOTICE: The official version of this policy is contained in Ellucid and may have been revised since the document was printed.

I. PURPOSE:

To promote safe and timely identification and management of Hypertensive Disorders during pregnancy and up to 6 weeks postpartum.

II. SCOPE:

Labor & Delivery RN, Maternal Infant Unit RN, Maternal Infant Unit Licensed Practical Nurse, Emergency Department RN, Critical Care RN, Obstetrical Care Providers, Emergency Department Providers

III. DEFINITIONS:

1) **Hypertension:** A systolic blood pressure level of 140mmHg or higher OR a diastolic blood pressure of 90mmHg or higher on 2 occasions at least 4 hours apart.
2) **Severe Hypertension:** A systolic blood pressure level ≥160mmHG OR diastolic blood pressure level ≥110mmHg.
3) **Hypertensive Emergency:** Two severe hypertension values taken 15-60 minutes apart. Do not need to be consecutive. Can occur antepartum, intrapartum or postpartum.
4) **Chronic Hypertension**: Hypertension diagnosed or present before pregnancy or before 20 weeks gestation. Also, may be diagnosed for first time in pregnancy and does not resolve in typical postpartum period.
5) **Gestational Hypertension**: Hypertension diagnosed for the first time after the 20th week of pregnancy without proteinuria, thrombocytopenia, impaired liver function, the new development of renal insufficiency, pulmonary edema, or new-onset cerebral or visual disturbances.
6) **Preeclampsia without severe features:**
    - Hypertension
    - Proteinuria with or without symptoms: Protein ≥300mg per 24-hour urine collection OR Protein/Creatinine ratio ≥0.3.
    - No findings of preeclampsia with severe features
    - Preeclampsia can be superimposed on patients with chronic hypertension
7) **Preeclampsia with severe features:** Hypertension with any of the following:
    - Two severe blood pressure values
    - Progressive renal insufficiency OR persistent oliguria (<30cc/hour or <100cc/4 hours)

- Platelet count less than 100,000
- Impaired liver function (LFTs more than doubled)
- Epigastric or RUQ pain
- Unremitting headache/visual disturbances
- Pulmonary edema
- HELLP syndrome

8) Eclampsia: The occurrence of seizures or coma in the presence of preeclampsia

IV. POLICY

Patients identified as having a hypertensive disorder will be managed according to the procedures below.

V. PROCEDURE:

1) Blood pressure should be assessed after patient has rested (ideally 10 minutes or more) and is seated with legs uncrossed and back supported using an appropriately sized cuff positioned at the level of the heart. If patient must be in a recumbent position, they should be placed in a left lateral decubitus position with cuff located at level of the right atrium.
2) Notify OB Provider for severe range blood pressures.
3) If two elevated blood pressures within 30 minutes, consider preeclampsia labs.
4) If blood pressure values meet criteria for a Hypertensive Emergency, treatment should be initiated within 60 minutes. See Treatment of Hypertensive Emergency algorithm.
5) Assess for signs of preeclampsia: visual disturbances, headaches, nausea or vomiting, epigastric or RUQ pain, hyperreflexia, clonus.
6) Position patient in lateral tilt or hip wedge.
7) If indicated, maintain strict I&O. Notify OB Provider for urine output less than 30cc/hour or 100cc/4 hours.
8) If indicated, decrease external stimuli and dim lights. Consider the need for seizure precautions, including magnesium sulfate and padded bed rails.
9) In the rare circumstance that IV bolus labetalol, hydralazine, or immediate release oral nifedipine fails to relieve acute-onset, severe hypertension and is given in successive appropriate doses, emergent consultation with an anesthesiologist, hospitalists, maternal–fetal medicine subspecialist, or critical care subspecialist to discuss second-line intervention is recommended.
10) Consider transfer to a higher level of care if indicated.
11) Guidance on when to consider emergent delivery.
    a. The mode of delivery in women with gestational hypertension or preeclampsia (with or without severe features) should be determined by routine obstetric considerations. The decision to perform cesarean delivery should be individualized, based on anticipated probability of vaginal delivery and on the nature and progression of preeclampsia disease state (see guidance on eclamptic seizures below).
12) Guidance on caring for a patient experiencing eclamptic seizure.
    a. Initiate supportive measures:
        i. Call for help
        ii. Prevent maternal injury
        iii. Place in lateral decubitus position
        iv. Prevent aspiration
        v. Administer oxygen

vi. Monitor vital signs including oxygen saturation

b. Most ecclamptic seizures are self-limited; only subsequently is attention directed to administration of magnesium sulfate, to prevent recurrent convulsions.

c. Fetal heart rate decelerations are usually seen during ecclamptic seizures; after a seizure the fetal heart rate may show recurrent decelerations, tachycardia and reduced variability due to maternal hypoxia and hypercarbia. ***Only after maternal hemodynamic stabilization should one proceed with delivery.*** Maternal resuscitation is usually followed by normalization of the fetal tracing.

d. Magnesium sulfate administered IM or IV is the drug of choice for prevention of recurrent seizures. An additional dose of magnesium sulfate could be administered if convulsions recur. In cases refractory to magnesium sulfate (still seizing at 20 minutes after bolus or more than two recurrences) alternate therapies may include sodium amobarbital, thiopental, or phenytoin. Endotracheal intubation and assisted ventilation in the ICU as well as head imaging may also be considered. Emergent consultation with an anesthesiologist, hospitalists, maternal–fetal medicine subspecialist, or critical care subspecialist to discuss second-line intervention is recommended.

e. ***Women with eclampsia should be delivered in a timely fashion. However, eclampsia by itself is not an indication for cesarean delivery.*** Once the patient is stabilized the method of delivery should depend in part on factors such as gestation age, fetal presentation, and the findings of the cervical exam. Patients that adequately progress in labor could be allowed to continue to labor even after an eclamptic seizure.

13) Cases that meet the following established criteria will be reviewed by the hospital to evaluate the effectiveness of care, treatment, and services provided to the patient. Severe hypertension/preeclampsia resulting in, but not limited to:

a. Maternal death
b. Identification of HELLP Syndrome
c. Pulmonary Edema
d. Maternal Seizure

VI. REFERENCE(S):

1) Gestational hypertension and preeclampsia. ACOG Practice Bulletin No. 222. American College of Obstetricians and Gynecologists. Obstet Gynecol 2020; 135:e237-260.
2) Chronic hypertension in pregnancy. ACOG Practice Bulletin No. 203. American College of Obstetricians and Gynecologists. Obstet Gynecol 2019; 133:e26-50.
3) Emergent therapy for acute-onset, severe hypertension during pregnancy and the postpartum period. ACOG Committee Opinion No. 767. American College of Obstetricians and Gynecologists. Obstet Gynecol 2019;133:e174–80.
4) Maurice L. Druzin, MD; Laurence E. Shields, MD; Nancy L. Peterson, RNC, PNNP, MSN; Valerie Cape, BSBA. Preeclampsia Toolkit: Improving Health Care Response to Preeclampsia (California Maternal Quality Care Collaborative Toolkit to Transform Maternity Care) Developed under contract #11-10006 with the California Department of Public Health; Maternal, Child and Adolescent Health Division; Published by the California Maternal Quality Care Collaborative, November 2013.
5) CMQCC Preeclampsia Toolkit, Preeclampsia Care Guidelines: Ante, intra, postpartum nursing management and assessment of preeclampsia: maternal/fetal assessment and monitoring recommendations. (January 17, 2014). Stanford, CA: California Maternal Quality Care Collaborative.

https://www.cmqcc.org/resource/ante-intra-postpartum-nursing-management-and-assessment-preeclampsia-maternalfetal-0. (Last accessed 6/29/2021)

VII. ATTACHMENTS:

Attachment A: Treatment of Hypertensive Emergency During Pregnancy and Postpartum Period

VIII. POLICY TRACKING RECORD

10/19, 06/20, 04/21

IX. ENDORSEMENT:

Labor and Delivery Manager, Perinatal Committee, Regulatory Compliance Specialist, Policy Review Committee, Nursing Practice Council, VP PCS CNE

Attachment A:

Treatment of Hypertensive Emergency During Pregnancy and Postpartum Period

Acute-onset, severe systolic (≥160 mm Hg) hypertension; severe diastolic (≥ 110 mm Hg) hypertension;

or both in a pregnant woman or a woman in the postpartum period

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Notify OB Care Provider
Institute continuous fetal monitoring if undelivered
Recheck blood pressure within 10-15 minutes – **DO NOT** reposition patient to either side to lower pressure. This will give you a false reading.

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If severe BP elevations persist for 15 minutes or more, initiate Antihypertensive Therapy ASAP, within 60 minutes.

The goal is not to normalize BP, but to achieve a range of 140-150/90-100 mm Hg.

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Labetalol 20 mg IV over 2 minutes
Repeat BP in **10 minutes**
If either BP threshold is still exceeded, administer **Labetalol 40 mg IV** over 2 minutes. If BP is below threshold, continue to monitor BP closely.
Repeat BP in **10 minutes**
If either BP threshold is still exceeded, administer **Labetalol 80 mg IV** over 2 minutes. If BP is below threshold, continue to monitor BP closely.
Repeat BP in **10 minutes**
If either BP threshold is still exceeded, administer **Hydralazine 10 mg IV** over 2 minutes. If BP is below threshold, continue to monitor BP closely.
Repeat BP in **20 minutes**
If either BP threshold is still exceeded, obtain emergency consultation from MFM, Internal Medicine, Anesthesia or Critical Care

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Hydralazine 5 mg or 10 mg IV over 2 minutes
Repeat BP in **20 minutes**
If either BP threshold is still exceeded, administer **Hydralazine 10 mg IV** over 2 minutes. If BP is below threshold, continue to monitor BP closely.
Repeat BP in **20 minutes**
If either BP threshold is still exceeded, administer **Labetalol 20 mg IV** over 2 minutes. If BP is below threshold, continue to monitor BP closely.
Repeat BP in **10 minutes**
If either BP threshold is still exceeded, administer **Labetalol 40 mg IV** over 2 minutes and obtain emergency consultation from MFM, Internal Medicine, Anesthesia or Critical Care

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Nifedipine 10 mg orally
Repeat BP in **20 minutes**
If either BP threshold is still exceeded, administer **Nifedipine 20 mg orally**. If BP is below threshold, continue to monitor BP closely.
Repeat BP in **20 minutes**
If either BP threshold is still exceeded, administer **Nifedipine 20 mg orally**. If BP is below threshold, continue to monitor BP closely.
Repeat BP in **20 minutes**
If either BP threshold is still exceeded, administer **Labetalol 40 mg IV** over 2 minutes and obtain emergency consultation from MFM, Internal Medicine, Anesthesia or Critical Care

Once the aforementioned BP thresholds are achieved, repeat BP measurement every 10 minutes for 1 hour, then every 15 minutes for 1 hour, then every 30 minutes for 1 hour, then every hour for 4 hours.