UNM HEALTH SCIENCES CENTER

Applies To: ObGyn
Responsible Department: ObGyn
Revised: June 30, 2016

Title: **Antihypertensive Treatment for Severe Hypertension During Pregnancy**	**Policy**

POLICY STATEMENT:
Pregnant or postpartum patients who exhibit a systolic blood pressure (SBP) ≥ 160 mmHG **OR** a diastolic blood pressure (DBP) ≥ 110 mmHG, constitutes a severe range and should receive an antihypertensive medication. During medication administration, the target blood pressure should be a SBP < 160 **AND** a DBP < 110**.** The systolic and diastolic pressures should not be lowered by more than 20-25%, as cerebral auto regulation fails at this level; do NOT aim for a "normal" blood pressure.

SCOPE:
The goal of therapy is to maintain a safe blood pressure (SBP < 160 mmHG **AND** DBP < 110 mmHG) while avoiding a decrease in uteroplacental perfusion, which could lead to fetal distress. Antihypertensive treatment may be initiated at a lower blood pressure if signs of end-organ compromise are present, e.g. heart failure or myocardial ischemia, change in mental status, renal failure, eclampsia, aortic dissection, or microangiopathic hemolytic anemia.
Decelerations of the fetal heart rate indicate that uteroplacental perfusion has been affected, usually meaning that the blood pressure has been lowered too aggressively. This does not mandate an emergent cesarean delivery. Place the patient in a lateral position, administer oxygen, and administer a fluid bolus of 500ml crystalloid.

INDICATIONS:
Preeclamptic or chronic hypertensive pregnant or postpartum patient with severe hypertension, defined as **diastolic BP≥110 OR systolic BP ≥160.** A single value blood pressure meeting these criteria and taken with an appropriate cuff in a hospitalized patient, should prompt administration of an IV antihypertensive agent within fifteen minutes. Repeat measurements demonstrating lower pressures should not prevent administration.

PROCEDURES:
1. IV labetalol should be the first line of therapy during pregnancy and postpartum unless contraindicated.
    a. Avoid the use of labetalol in patients with maternal bradycardia, severe bronchial asthma, or heart block. In these patients, consider hydralazine as the first line of therapy.
2. For treatment with an INTRAVENOUS (IV) REGIMEN:
    a. The patient should be at bed rest.
    b. During pregnancy fetal heart rate (FHR) should be monitored continuously during administration and until the provider determines it is no longer necessary.
    c. Institute intensive monitoring of maternal vital signs which include BP q 10 minutes, continuous maternal EKG, and continuous O2 saturation monitoring.
    d. Once the blood pressure thresholds are achieved with IV medications, repeat blood pressure every 10 minutes for 1 hour, then every 15 minutes for 1 hour, then every 30

minutes for 1 hour, and then every hour for 4 hours. Intrapartum patients may require more frequent blood pressure monitoring.

e. An arterial line should be considered if the first line of therapy has failed or if frequent blood pressures are difficult to obtain with a BP cuff.

f. Institute strict I&O monitoring. The recommendation is to limit total maintenance IV intake to 125ml/hr. Notify provider for urine output less than 30ml/hr.

MEDICATION TREATMENT OPTIONS

I. Labetalol

This regimen should be the first line of therapy unless contraindicated.

a. Initial labetalol dose is 10mg IV push over 2 minutes.

b. If inadequate blood pressure response in 10 minutes, administer labetalol 20mg IV push over 2 minutes.

c. If inadequate blood pressure response after another 10 minutes, administer labetalol 40mg IV push over 2 minutes.

d. If inadequate blood pressure response after another 10 minutes, administer 80mg labetalol IV push over 2 minutes.

e. If inadequate blood pressure response after another 10 minutes, **OR** at any time within the next hour, labetalol is deemed to have failed. A different medication, such as hydralazine, should be instituted.

f. The last effective dose may be repeated after 1 hour if SBP is $\geq$ 160 mmHG or DBP is $\geq$ 110 mmHG. If re-dosing is needed in less than 1 hour consult with the OB provider on call.

g. Do not exceed 300mg of IV labetalol over a 24 hour period. (Okay if PO Labetalol exceeds 300mg).

h. If the treatment with labetalol therapy has failed, a different medication or intervention should be instituted. Labetalol therapy has failed if the desired blood pressure goal was not achieved and maintained for 1 hour after a dose of 80mg **OR** a cumulative dose of 300mg IV has been administered in the previous 24 hours. Consultation with MFM and Anesthesia services should be considered for arterial line placement.

II. Hydralazine

Hydralazine may be associated with more maternal side effects and non-reassuring FHR than IV labetalol or oral nifedipine. The typical compensatory response to this drug is a reflex tachycardia; headache, nausea, and flushing have been reported. The response to an intravenous bolus can take up to 20 minutes to manifest.

a. Consider a fluid load with 500ml isotonic crystalloid.

b. The initial hydralazine dose is 10mg given IV push over 2 minutes.

c. If inadequate blood pressure response after 20 minutes, administer another 10mg hydralazine IV push over 2 minutes.

d. If inadequate response after another 20 minutes, administer 20mg hydralazine IV push over 2 minutes.

e. If inadequate blood pressure response after another 20 minutes, **OR** at any time within the next hour, hydralazine has failed. A different medication or intervention should be utilized.

f. The last effective dose may be repeated after 1 hour if SBP is ≥ 160 or DBP is ≥ 110. If re-dosing is needed in less than 1 hour consult with the OB provider on call.

g. Do not exceed 40mg of IV hydralazine in 24 hours

h. If both labetalol and hydralazine have failed during pregnancy, MFM should be consulted for further treatment options, including delivery.

III. Enalaprilat

This is an ACE inhibitor, and it should ONLY be used POSTPARTUM.

a. The initial dose is 0.625mg enalaprilat IV push over 5 minutes.

b. If the desired response is not achieved the dose may be repeated every 15 minutes to a maximum of 5mg.

c. Once the desired effect has been achieved, an oral medication such as nifedipine or labetalol can be started.

IV. Nifedipine

a. May be used during pregnancy only if IV access is unattainable. Otherwise, only recommended for postpartum use.

b. Unpredictable in effect

c. Duration 3-5 hours

d. Expect reflex tachycardia

e. Initial dose is 10mg PO of short acting nifedipine. May be repeated in 30 minutes once blood pressure is in the target range.

f. Convert to long acting nifedipine for daily dosing with range of 30mg – 90mg XL PO daily.

PRECAUTIONS

1. Watch for hypotension, bradycardia, ventricular dysrhythmias. If hypotension occurs place in Trendelenburg position and give fluid.
2. Beta blockers should be used with caution in patients with asthma.
3. Meticulous I&O's are essential in severe preeclamptics on labetalol as the combination of a negative inotrope and fluid overload may precipitate pulmonary edema in susceptible patients.
4. Beta blockers may blunt the signs of hypoglycemia in diabetics and careful glucose monitoring is mandatory: Check blood glucose q 1 hour (use heplock).

CONSULTATION: Twenty-Four hour consultation is available by calling the Maternal Fetal - Medicine service at the University of New Mexico Hospital, (505) 272-2000.

References:

1. Emergent Therapy for Acute-Onset, Severe Hypertension with Preeclampsia or Eclampsia. The American College of Obstetricians and Gynecologists. Committee opinion 514. December 2011

2. Hypertension in Pregnancy. The American College of Obstetricians and Gynecologists. Taskforce on Hypertension in Pregnancy. 2013

APPROVAL

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Approval: _____ _____
Chair, Department of Obstetrics & Gynecology Date

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