Practice Guidelines

Managing Chronic Hypertension in Pregnant Women: ACOG Releases Updated Practice Bulletin

Key Points for Practice

- Medical treatment of chronic hypertension in pregnancy, that is, hypertension present before 20 weeks' gestation, is recommended at 160 mm Hg systolic or 110 mm Hg diastolic with labetalol or extended-release nifedipine, treating to 120 to 159 mm Hg systolic and 80 to 109 mm Hg diastolic.
- The decision of whether to treat chronic hypertension at lower blood pressure levels should be based on a discussion with the patient as well as the presence of comorbid conditions that might warrant lower blood pressure.
- Low-dose aspirin is recommended in patients with chronic hypertension in pregnancy from between 12 and 28 weeks' gestation to delivery.
- Without other indications, pregnant women with chronic hypertension should not be induced for delivery before 37 weeks' gestation.

From the *AFP* Editors

In pregnancy, chronic hypertension is defined as hypertension diagnosed before 20 weeks' gestation. Up to 1.5% of pregnant women have chronic hypertension, which can result in harm to the mother and infant. The rates of chronic hypertension are increasing and are predicted to continue because of obesity and older maternal age. Superimposed preeclampsia, the development of preeclampsia in a patient with chronic hypertension, occurs in 20% to 50% of pregnancies complicated by chronic hypertension. The American College of Obstetricians and Gynecologists (ACOG) has released an updated practice bulletin to outline diagnosis, effects on pregnancy outcomes, and approaches for management based on new evidence.

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This series is coordinated by Sumi Sexton, MD, editor-in-chief.

A collection of Practice Guidelines published in *AFP* is available at https://www.aafp.org/afp/practguide.

CME **This clinical content** conforms to AAFP criteria for continuing medical education (CME). See CME Quiz on page 738.

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Recommendations

When assessing patients diagnosed with hypertension before pregnancy or when they present for pregnancy care, a complete blood count and measurements of transaminase, creatinine, electrolyte, and blood urea nitrogen levels should be obtained as well as a spot urine protein/creatinine ratio, with a 24-hour urine test for total protein if elevated. Electrocardiography or echocardiography may be helpful in patients with signs of decreased cardiac function. Some tests are affected by the physiologic changes of pregnancy, so are better performed before pregnancy.

Antihypertensive medications safe for the treatment of chronic hypertension during pregnancy include:

- Labetalol, two times daily up to 2,400 mg per day in women without asthma, myocardial disease, decreased cardiac function, heart block, or bradycardia;
- Extended-release nifedipine, up to 120 mg daily in women without tachycardia;
- Methyldopa, two or three times daily up to 3,000 mg per day; or
- Hydrochlorothiazide, 12.5 to 25 mg daily.

Labetalol and nifedipine are the preferred medications and hydrochlorothiazide and methyldopa are considered secondary options. Methyldopa has a long history of use in pregnancy, but has limited effectiveness and significant adverse effects. Use of angiotensin-converting enzyme inhibitors, angiotensin receptor blockers, renin inhibitors, and mineralocorticoid receptor antagonists should be avoided in pregnancy.

STRONG EVIDENCE

Women with chronic hypertension should take 81 mg of aspirin daily from 12 to 28 weeks' gestation until delivery.

LIMITED EVIDENCE

Blood pressure control in pregnancy is challenging because of the uncertain risks of mild hypertension and potential uteroplacental insufficiency with overtreatment. Pregnant women with chronic hypertension should start antihypertensive medication when their blood pressure reaches

160 mm Hg systolic or 110 mm Hg diastolic, although it may be initiated earlier if the patient has concerning comorbidities or impaired renal function.

In the absence of other indications, women with chronic hypertension requiring medication should deliver between 37 and 39 weeks' gestation, and those not requiring medication should deliver between 38 and 39 weeks' gestation.

Acute hypertensive episodes in pregnancy can be dangerous to mother and infant. Pregnant women presenting with blood pressures higher than 160 mm Hg systolic or 110 mm Hg diastolic for 15 minutes should be given an antihypertensive medication as soon as possible, but at least within one hour. Women with severe acute hypertension resistant to medical treatment or superimposed preeclampsia with severe features who are at 34 weeks' gestation or more should proceed to delivery. In superimposed preeclampsia, patients with severe and uncontrolled hypertension, eclampsia, pulmonary edema, intravascular coagulation, renal insufficiency that continues to progress, placental abruption, or abnormal results on fetal testing should proceed to delivery regardless of gestational age. Superimposed preeclampsia is linked to an increased risk of adverse outcomes for mother and infant, including a 50% risk of fetal growth restriction as well as increased preterm delivery and perinatal mortality. In some situations, women who present before 34 weeks' gestation and have superimposed preeclampsia with severe features can be expectantly managed until 34 weeks' gestation if admitted to a facility with appropriate resources to care for mother and infant.

CONSENSUS OR EXPERT OPINION

Women with chronic hypertension should undergo an evaluation before becoming pregnant to evaluate for end-organ damage or comorbidities that will need to be managed before and during the pregnancy. It also may be beneficial to assess for secondary hypertension, which occurs in 11% to 14% of pregnant women with chronic hypertension. Those who become pregnant and are taking medications to treat chronic hypertension should have blood pressure goals set at 120 to 159 mm Hg systolic and 80 to 109 mm Hg diastolic.

Women with chronic hypertension requiring medication or who have comorbidities that could affect fetal outcomes, fetal growth restriction, or superimposed preeclampsia are recommended for antenatal fetal testing, although evidence is lacking on timing of testing. Because there is a higher risk of growth restriction in women with chronic hypertension, ultrasonography to assess fetal growth should be performed in the third trimester.

Women with superimposed preeclampsia without severe features can be expectantly managed until 37 weeks' gestation, if close monitoring can be provided.

Acute blood pressure elevations in pregnant women with chronic hypertension require hospital evaluation for superimposed preeclampsia with hematocrit, platelet, creatinine, and serum uric acid levels; liver function testing; and an evaluation for proteinuria as well as a fetal assessment. If maternal testing identifies hemoconcentration, thrombocytopenia, proteinuria, or increased creatinine or liver transaminase levels, a diagnosis of preeclampsia is likely. Monitoring blood pressure over four to eight hours can be beneficial for distinguishing acute severe from transient elevations.

Guideline source: American College of Obstetricians and Gynecologists

Evidence rating system used? Yes

Systematic literature search described? Yes

Guideline developed by participants without relevant financial ties to industry? Not reported

Recommendations based on patient-oriented outcomes? Yes

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Available at: https://journals.lww.com/greenjournal/fulltext/2019/01000/ACOG_Practice_Bulletin_No__203_Summary__Chronic.43.aspx

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