Should treatment be initiated for mild chronic hypertension in pregnancy to improve outcomes?

Yes, antihypertensive medication should be used to reach a goal blood pressure of <140/90 mm Hg in pregnant patients with mild chronic hypertension. This practice decreases the incidence of adverse pregnancy outcomes and does not increase the risk of small for gestational age birth weight compared to reserving treatment only for severe hypertension.

Tita AT, Szychowski JM, Boggess K, et al. Treatment for mild chronic hypertension during pregnancy. N Engl J Med. 2022;386:1781-1792. doi: 10.1056/NEJMoa2201295.

FAST TRACK

BPs up to 160/110 mm Hg traditionally have been tolerated in pregnant patients with chronic hypertension without initiating treatment

EXPERT COMMENTARY
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In the nonpregnant population, medical management of hypertension >140/90 mm Hg is standard practice. By contrast, much higher blood pressures (BPs; up to 160/110 mm Hg) traditionally have been tolerated in pregnant patients with chronic hypertension without initiating treatment, and existing medications are often discontinued during pregnancy. Concern for impaired fetal growth as well as lack of data on improved outcomes have led to different recommendations for the management of mild chronic hypertension in pregnancy. However, chronic hypertension affects a substantial number of pregnant patients and is known to be a risk factor for severe short-term pregnancy and long-term health complications. With preliminary data suggesting that BPs >140/90 mm Hg prior to 20 weeks' gestation are associated with an increase in adverse outcomes, Tita and colleagues sought to determine the effects of decreasing BP in pregnant patients with mild chronic hypertension.

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Details about the study

This is an investigator-initiated, multicenter, pragmatic, open-label, randomized control trial of 2,408 patients with mild chronic hypertension. The active treatment group was treated with antihypertensive medication (including titration of existing medication), targeting a BP of <140/90 mm Hg. The control group only received medication for severe hypertension (≥160 mm Hg systolic or ≥105 mm Hg diastolic). The primary outcome of the study was a composite of preeclampsia with severe features, medically indicated preterm delivery prior to 35 weeks' gestation (*not* spontaneous labor or rupture of membranes), placental abruption, and fetal or neonatal death. Birthweight that was less than the 10th percentile was used as a safety outcome. The hypothesis was that treatment would decrease the rate of adverse pregnancy and fetal/neonatal outcomes.

The patient population of singleton pregnancies at a gestational age of less than

23 weeks included 56% with known chronic hypertension on medications, 22% with known chronic hypertension without medications, and 22% with newly diagnosed (during pregnancy) chronic hypertension. The treatment group primarily received labetalol (61.7%) or nifedipine (35.6%); the maximum dose of a single agent was used as tolerated prior to adding a second agent. The control group only received an antihypertensive medication for severe hypertension.

Treatment of chronic hypertension demonstrated a decreased risk of the composite adverse outcome with an adjusted risk ratio of 0.82 (95% confidence interval [CI], 0.74 to 0.92; *P*<.001) and a number needed to treat (NNT) of 14.7. When analyzed separately, a similar risk reduction was noted for both preeclampsia with severe features and medically indicated preterm birth <35 weeks' gestation. There was no statistical difference between the groups for birth weight <10th percentile and <5th percentile (adjusted risk ratio, 1.04 [0.82–1.31] vs 0.89 [0.62–1.26], respectively).

Planned subgroup analysis by type of chronic hypertension, race/ethnic group, diabetes status, gestational age at baseline, and body mass index (BMI) demonstrated a similar treatment effect to the overall composite primary outcome, with the exception of patients with newly diagnosed chronic hypertension or BMI ≥40 kg/m^2. Overall maternal and neonatal composite outcomes of severe complications did not differ between treatment and control groups; however, rates of severe preeclampsia, any preeclampsia, preterm birth rate, and birthweight <2,500 g were all lower in the treatment group.

WHAT THIS EVIDENCE MEANS FOR PRACTICE

Pregnant patients with chronic hypertension should continue or initiate antihypertensive medication to target a BP goal of <140/90 mm Hg. This substantial practice change is supported by the significant decrease demonstrated in this study in adverse outcomes such as preeclampsia with severe features and medically indicated preterm birth <35 weeks' gestation without an increase in small-for-gestational-age newborns.

Study strengths and weaknesses

The study strengths cited are a large sample size, multiple study sites, an independent data and safety monitoring board with close oversight, and centralized blinded confirmation of outcomes. Another strength is that the patient population of the study was similar to the overall population of pregnant patients in the United States with chronic hypertension in terms of age, race, and ethnicity.

The weaknesses of the study include the open-label design and the high ratio of screened to enrolled patients. Both of these issues appear related to the study design (ethics and logistics of a blinded treatment and gestational age cutoff) and the physiology of pregnancy (expected decrease in BP in the second trimester rendering patients ineligible due to lower BP). The study was also not powered to assess treatment effect in all of the subgroups, and further evaluation of patients with newly diagnosed chronic hypertension and BMI ≥ 40 kg/m^2 is needed. ●

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