



What BP target is appropriate for pregnant patients with mild chronic hypertension?

Active treatment to a lower blood pressure goal (< 140/90 mm Hg) can improve pregnancy outcomes without increasing maternal or fetal risk.

PRACTICE CHANGER

Treat mild chronic hypertension during pregnancy to a target of < 140/90 mm Hg to reduce the risk for adverse pregnancy outcomes.

STRENGTH OF RECOMMENDATION

B: Based on a single high-quality randomized controlled trial (RCT).¹

Tita AT, Szychowski JM, Boggess K, et al; Chronic Hypertension and Pregnancy (CHAP) Trial Consortium. Treatment for mild chronic hypertension during pregnancy. *N Engl J Med.* 2022;386:1781-1792. doi: 10.1056/NEJMoa2201295

ILLUSTRATIVE CASE

A 32-year-old primigravida at 10 weeks' gestation presents for an initial prenatal visit. Medical history includes hypertension that is currently well controlled on labetalol 200 mg twice daily. The patient's blood pressure (BP) at today's visit is 125/80 mm Hg. Should labetalol be discontinued?

Chronic hypertension in pregnancy is hypertension that predates the pregnancy or with onset prior to 20 weeks' gestation. Diagnostic criteria include systolic BP > 140 mm Hg or diastolic BP > 90 mm Hg, use of antihypertensive medications prior to pregnancy, or pregnancy-related hypertension persisting > 12 weeks postpartum.^{2,3} Chronic hypertension affects 0.9% to 5% of pregnancies and is associated with increased risk for complications, such as superimposed preeclampsia, small-for-gestational-age in-

fant, preterm birth, cesarean delivery, and neonatal intensive care unit admission.⁴ Superimposed preeclampsia occurs in about 17% to 25% of pregnancies affected by chronic hypertension, compared with 3% to 5% of the general population.³

Historically, a higher treatment threshold of 160/110 mm Hg was preferred to avoid theoretical complications of low placental perfusion.² Practically, this often meant discontinuing antihypertensives at the onset of prenatal care if BP was well controlled. A few small trials previously demonstrated that tight BP goals reduced the risk for severe hypertension, but they did not show an improvement in pregnancy outcomes.⁵⁻⁷ This larger RCT evaluated whether treatment of mild chronic hypertension in pregnancy at lower BP thresholds is associated with improved pregnancy outcomes without negative impact on fetal growth.

STUDY SUMMARY

Active BP treatment yielded better pregnancy outcomes

In a US multicenter, open-label RCT, 2419 pregnant patients with chronic hypertension and singleton fetuses at gestational age < 23 weeks were randomized to receive either active pharmacologic treatment with a BP goal of 140/90 mm Hg or standard treatment, in which BP medication was withheld

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The American College of Obstetricians and Gynecologists and the Society for Maternal–Fetal Medicine have issued statements recommending a change in practice based on this trial.

unless BP reached 160/105 mm Hg (severe hypertension). If medication was initiated in the standard-treatment group, the goal was also 140/90 mm Hg. Exclusion criteria included severe hypertension or suspected intrauterine growth restriction at randomization, known secondary hypertension, certain high-risk comorbidities (eg, cardiac or renal disease), or a major fetal anomaly.

First-line medications were labetalol or extended-release nifedipine in the majority of patients in the active-treatment group and in standard-treatment patients who developed severe hypertension. Patients were followed until 6 weeks after delivery. Intention-to-treat analyses were performed. The primary outcome was a composite of fetal or neonatal death before 28 days of life, superimposed preeclampsia with severe features up to 2 weeks postpartum, placental abruption leading to delivery, and medically indicated preterm birth before 35 weeks' gestation. Safety outcomes included birthweight < 10th and < 5th percentile for gestational age.

Primary outcome events occurred in 30.2% of the active-treatment group compared with 37% of the standard-treatment group (adjusted risk ratio [aRR] = 0.82; 95% CI, 0.74–0.92; number needed to treat [NNT] = 15). Preeclampsia with severe features (23.3% vs 29.1%; aRR = 0.80; 95% CI, 0.70–0.92) and medically indicated preterm birth before 35 weeks (12.2% vs 16.7%; aRR = 0.73; 95% CI, 0.6–0.89) occurred less often in the active-treatment group compared with the standard-treatment group. There were no differences in rates of placental abruption, fetal or neonatal death, or small-for-gestational-age infants.

WHAT'S NEW

Target BP of < 140/90 mm Hg reduced risk

This trial provides high-quality evidence that initiating or maintaining treatment at a nonsevere BP threshold (< 140/90 mm Hg) in pregnant patients with mild chronic hypertension reduces maternal and neonatal risk without increasing the risk for small-for-gestational-age infants. The American College of Obstetricians and Gynecologists and

the Society for Maternal–Fetal Medicine have issued statements recommending a change in practice based on this trial.^{8,9}

CAVEATS

Patient characteristics and medication choices were limited

This trial does not identify a BP goal for patients who are at highest risk for complications of hypertension or who already have been given a diagnosis of a growth-restricted fetus, as those patients were excluded.

Most patients in the trial who required medications received labetalol or extended-release nifedipine. It is unclear if other medications would produce similar outcomes.

CHALLENGES TO IMPLEMENTATION

Limited challenges anticipated

There should be limited challenges to implementation. **JFP**

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References

1. Tita AT, Szychowski JM, Boggess K, et al; Chronic Hypertension and Pregnancy (CHAP) Trial Consortium. Treatment for mild chronic hypertension during pregnancy. *N Engl J Med*. 2022;386:1781–1792. doi: 10.1056/NEJMoa2201295
2. American College of Obstetricians and Gynecologists' Committee on Practice Bulletins—Obstetrics. ACOG Practice Bulletin No. 203: chronic hypertension in pregnancy. *Obstet Gynecol*. 2019;133:e26–e50. doi: 10.1097/AOG.0000000000003020
3. Guedes-Martins L. Chronic hypertension and pregnancy. *Adv Exp Med Biol*. 2017;956:395–407. doi: 10.1007/5584_2016_81
4. Bramham K, Parnell B, Nelson-Piercy C, et al. Chronic hypertension and pregnancy outcomes: systematic review and meta-analysis. *BMJ*. 2014;348:g2301. doi: 10.1136/bmj.g2301
5. Sibai BM, Mabie WC, Shamsa F, et al. A comparison of no medication versus methyldopa or labetalol in chronic hypertension during pregnancy. *Am J Obstet Gynecol*. 1990;162:960–967. doi: 10.1016/0002-9378(90)91297-p
6. Gruppo di Studio Ipertensione in Gravidanza. Nifedipine versus expectant management in mild to moderate hypertension in pregnancy. *Br J Obstet Gynaecol*. 1998;105:718–722. doi: 10.1111/j.1471-0528.1998.tb10201.x
7. Magee LA, von Dadelszen P, Rey E, et al. Less-tight versus tight control of hypertension in pregnancy. *N Engl J Med*. 2015;372:407–417. doi: 10.1056/NEJMoa1404595
8. American College of Obstetricians and Gynecologists' Committee on Clinical Practice Guidelines—Obstetrics. Clinical guidance for the integration of the findings of the Chronic Hypertension and Pregnancy (CHAP) study. Practice Advisory. April 2022. Accessed December 4, 2022. www.acog.org/clinical/clinical-guidance/practice-advisory/articles/2022/04/clinical-guidance-for-the-integration-of-the-findings-of-the-chronic-hypertension-and-pregnancy-chap-study
9. Society for Maternal-Fetal Medicine; Publications Committee. Society for Maternal-Fetal Medicine statement: antihypertensive therapy for mild chronic hypertension in pregnancy—the Chronic Hypertension and Pregnancy trial. *Am J Obstet Gynecol*. 2022;227:B24–B27. doi: 10.1016/j.ajog.2022.04.011