

How do new BP guidelines affect identifying risk for hypertensive disorders of pregnancy?

An analysis of blood pressure (BP) data from 8,899 nulliparous women, based on recently redefined lower threshold categories of normal (< 120/80 mm Hg), elevated (120–129 mm Hg systolic and < 80 mm Hg diastolic), and stage 1 hypertension (130–139 mm Hg systolic or 80–89 mm Hg diastolic), found that **increasing BP category was associated with a higher risk of all hypertensive disorders of pregnancy**. In addition, an **upward BP trajectory** (≥ 5 mm Hg), compared with a downward trajectory (≤ -5 mm Hg), **was significantly associated with risk of hypertensive disorders of pregnancy** ($P < .001$).

Hauspurg A, Parry S, Mercer BM, et al. Blood pressure trajectory and category and risk of hypertensive disorders of pregnancy in nulliparous women. *Am J Obstet Gynecol*. 2019. pii: S0002-9378(19)30807-5. doi: 10.1016/j.ajog.2019.06.031.

EXPERT COMMENTARY

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Hauspurg and colleagues set out to determine whether redefined BP category (normal, < 120/80 mm Hg) and trajectory (a difference of ≥ 5 mm Hg systolic, diastolic, or mean arterial pressure between the first and second prenatal visit) helps to identify women at increased risk for devel-

oping hypertensive disorders of pregnancy or preeclampsia.

With respect to the former variable, such an association was demonstrated in the first National Institutes of Health-funded preeclampsia prevention trial published in 1993, which used low-dose aspirin.¹ In that trial, low-dose aspirin was not found to be effective in preventing preeclampsia in young, healthy nulliparous women. Interestingly, the 2 factors most associated with developing preeclampsia were an initial systolic BP of 120 to 134 mm Hg and an initial weight of >60 kg. For most clinicians, these findings would not be helpful in trying to better identify a high-risk group.

Details of the study

The idea of BP “trajectory” is interesting in the Hauspurg and colleagues’ study. The authors analyzed data from the Nulliparous

FAST TRACK

In the 1993 NIH preeclampsia prevention trial, initial systolic BP of 120 to 134 mm Hg and initial weight of >60 kg were the factors most associated with developing preeclampsia

The author reports no financial relationships relevant to this article.

WHAT THIS EVIDENCE MEANS FOR PRACTICE

Until further data are available, my advice to clinicians is to pay close attention to all risk factors for any of the hypertensive disorders of pregnancy. Initial BP and BP trajectory are important but probably something that sound clinical judgment would identify anyway. My recommendation is to continue to use those methods of prophylaxis, fetal surveillance, and indications for delivery that are supported by current data and await the additional investigations that Hauspurg and colleagues suggest need to be done before altering your management of women at increased risk for any of the hypertensive disorders of pregnancy.

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Pregnancy Outcomes Study: Monitoring Mothers-to-Be (nuMoM2b), a prospective cohort study, and included a very large population of almost 9,000 women in the analysis. Participants were classified according to their BP measurement at the first study visit, with BP categories based on updated American College of Cardiology/American Heart Association guidelines. The primary outcome was the risk of hypertensive disorders of pregnancy, including gestational hypertension and preeclampsia.

The data analysis found that elevated BP was associated with an adjusted risk ratio (aRR) of 1.54 (95% confidence interval [CI], 1.18–2.02). Stage 1 hypertension was associated with an aRR of 2.16 (95% CI, 1.31–3.57). Compared with women whose BP had a downward systolic trajectory, women with normal BP and an upward systolic trajectory had a 41% increased risk of any hypertensive disorder of pregnancy (aRR, 1.41; 95% CI, 1.20–1.65).

Study strengths and limitations

While the large study population is a strength of this study, there are a number of limitations, such as the use of BP measurements

during pregnancy only, without having pre-pregnancy measurements available. Further, a single BP measurement during each visit is also a drawback, although the standardized measurement by study staff is a strength.

Anticlimactic conclusions. The conclusions of the study, however, are either not surprising, not clinically meaningful, or of little value to clinicians at present, at least with respect to patient management.

Conclusions that were not surprising included a statistically lower chance of indicated preterm delivery in the normal BP group than in the elevated BP or stage 1 hypertension groups. Conclusions that were not meaningful included a statistically significant lower birthweight in the elevated BP group (3,269 g) and in the stage 1 hypertension group (3,258 g) compared with the normal BP group (3,279 g), but the clinical significance of these differences is arguable.

Lastly is the issue of what these data mean for clinical practice. The idea of identifying high-risk groups is attractive, provided that there are effective intervention strategies available. If one follows the United States Preventive Services Task Force (USPSTF) recommendations for preeclampsia prevention,² then virtually every nulliparous woman is a candidate for low-dose aspirin for preeclampsia prophylaxis. Beyond that, the current data do not support any change in the standard clinical practice of managing these “now identified” high-risk women. Increasing prenatal visits, using biomarkers to further delineate risk, and using uterine artery Doppler studies are all strategies that have been or are being investigated, but as yet they are not supported by conclusive data documenting improved outcomes—a sentiment supported by both the USPSTF³ and the authors of the study. ●

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Elevated BP was associated with an aRR of 1.54 (95% CI, 1.18–2.02) and stage 1 hypertension was associated with an aRR of 2.16 (95% CI, 1.31–3.57) for any hypertensive disorder of pregnancy

References

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