

Putting Prevention into Practice

An Evidence-Based Approach

Screening for Preeclampsia

Iris Mabry-Hernandez, MD, MPH, Medical Officer,

U.S. Preventive Services Task Force Program, Agency for Healthcare Research and Quality

Max J. Romano, MD, MPH, General Preventive Medicine Resident, Johns Hopkins Bloomberg School of Public Health

Case Study

A 28-year-old white woman comes to your clinic for prenatal care reporting a new-onset severe headache. She is currently pregnant with twins at an estimated gestational age of 22 weeks. Her obstetric history is significant for one previous term singleton vaginal delivery at 24 years of age without complications; she has had no other pregnancies. You use a manual sphygmomanometer on her left arm while she is seated and find that her blood pressure is 154/86 mm Hg. She has no history of elevated blood pressure, and her body mass index is 24 kg per m².

Case Study Questions

- Based on the U.S. Preventive Services Task Force (USPSTF) recommendation statement, which one of the following statements about the diagnosis of preeclampsia in this patient is accurate?
 - You should use a validated risk prediction tool, such as the uterine artery pulsatility index, to diagnose preeclampsia.
 - You can diagnose preeclampsia only after repeated elevated blood pressure measurements combined with certain associated signs, symptoms, or laboratory results.
 - You can diagnose preeclampsia only after the detection of elevated urine protein.
 - You cannot diagnose preeclampsia yet because the patient's gestational age is less than 24 weeks.
 - You should confirm the diagnosis of preeclampsia immediately by taking another blood pressure measurement in the upper arm with the patient in the left lateral position.
- Which one of the following characteristics increases this patient's risk of developing preeclampsia?
 - She has one prior delivery.
 - She is younger than 35 years.
 - She has a multifetal gestation.
 - She is white.
 - She has a body mass index of 24 kg per m².
- You take another blood pressure measurement during the same visit using appropriate technique and find that it has decreased to 118/74 mm Hg. She has no protein in her urine. Which of the following are the most appropriate next steps for this patient?
 - Recommend that she take daily low-dose aspirin to decrease the risk of preeclampsia, preterm birth, and intrauterine growth restriction.
 - At subsequent prenatal visits, screen for preeclampsia with urine protein testing, not blood pressure measurement.
 - Continue to monitor her blood pressure at every prenatal visit.
 - Prescribe an antihypertensive medication to decrease her blood pressure.

Answers appear on the following page.

See related U.S. Preventive Services Task Force Recommendation Statement at <http://www.aafp.org/afp/2018/0115/od1.html>.

This PPIP quiz is based on the recommendations of the USPSTF. More information is available in the USPSTF Recommendation Statement and the supporting documents on the USPSTF website (<https://www.uspreventiveservicestaskforce.org>). The practice recommendations in this activity are available at <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/preeclampsia-screening1>.

This series is coordinated by Sumi Sexton, MD, Associate Deputy Editor.

A collection of Putting Prevention into Practice published in *AFP* is available at <http://www.aafp.org/afp/ppip>.

CME This clinical content conforms to AAFP criteria for continuing medical education (CME). See CME Quiz on page 75.

Author disclosure: No relevant financial affiliations.

Answers

1. The correct answer is B. The criteria for the diagnosis of preeclampsia include elevated blood pressure (140/90 mm Hg or greater on two occasions four hours apart, after 20 weeks' gestation) and either proteinuria (300 mg per dL or greater on a 24-hour urine protein test, urine protein-to-creatinine ratio of 0.3 or greater, or urine protein dipstick reading greater than 1 if quantitative analysis is not available) or in the absence of proteinuria, findings of thrombocytopenia, renal insufficiency, impaired liver function, pulmonary edema, or cerebral or visual symptoms.¹ The uterine artery pulsatility index may help identify women at risk of adverse pregnancy outcomes due to preeclampsia; however, evidence suggests that it is not specific enough to screen for or diagnose preeclampsia. If a patient has an elevated blood pressure measurement, it should be confirmed with repeated measurement; however, measurement in the upper arm (right arm) in the left lateral position may falsely decrease a blood pressure reading, because the cuff will be above the level of the right atrium of the heart. Blood pressure should be measured with the patient seated after a period of rest with her back supported, her feet flat on the ground, and her legs uncrossed, with an appropriately sized blood pressure cuff at the level of the right atrium of her heart.

2. The correct answer is C. Known clinical risk factors for preeclampsia include multifetal gestation, nulliparity, advanced maternal age, African American race, and obesity. African American women may be at higher risk of developing preeclampsia because they are disproportionately affected by the risk factors for preeclampsia. African American women who develop preeclampsia

are also three times more likely to die of preeclampsia than white women²; therefore, screening, prompt diagnosis, and effective treatment in this population are especially important.

3. The correct answers are A and C. The USPSTF recommends the use of low-dose aspirin (81 mg per day) as preventive medication between 12 and 28 weeks' gestation for women at high risk of preeclampsia,³ and the patient's multifetal gestation qualifies as a significant risk factor. Blood pressure measurements should be obtained during each prenatal care visit throughout pregnancy in all women. Evidence does not support the use of point-of-care urine testing alone to screen for preeclampsia because women may develop preeclampsia in the absence of proteinuria or may develop proteinuria in the absence of preeclampsia. The patient has no indication for antihypertensive medication because her blood pressure was in the normal range on repeat measurement.

The views expressed in this work are those of the authors, and do not reflect the official policy or position of the Department of Health and Human Services or the Johns Hopkins Bloomberg School of Public Health.

References

1. U.S. Preventive Services Task Force. Screening for preeclampsia: U.S. Preventive Services Task Force recommendation statement. *JAMA*. 2017;317(16):1661-1667.
2. Henderson JT, Thompson JH, Burda BU, Cantor A. Preeclampsia screening: evidence report and systematic review for the US Preventive Services Task Force. *JAMA*. 2017;317(16):1668-1683.
3. U.S. Preventive Services Task Force. Low-dose aspirin use for the prevention of morbidity and mortality from preeclampsia: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med*. 2014;161(11):819-826. ■