Does planned early delivery make sense in women with preterm preeclampsia?

Maybe. The choice of early delivery reduces the risk of adverse outcomes in the mother, with an increased chance of the neonate's admission to the NICU. The decision has to be individualized.

Chappell LC, Brocklehurst P, Green ME, et al; PHOENIX Study Group. Planned early delivery or expectant management for late preterm pre-eclampsia (PHOENIX): a randomised controlled trial. Lancet. 2019;394:1181-1190.

EXPERT COMMENTARY
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FAST TRACK

The proportion of women with the maternal co-primary outcome was significantly lower in the planned delivery group compared with the expectant management group (65% vs 75%)

Preeclampsia is a common hypertensive disorder of pregnancy. Among women who develop the disease at late preterm gestation, the question remains, "What is the optimal timing for delivery?" The American College of Obstetricians and Gynecologists (ACOG) categorizes preeclampsia as "with and without severe features."[1] Delivery is recommended for women with preeclampsia with severe features at or beyond 34 weeks' gestation, and for women with preeclampsia without severe features at or beyond 37 weeks' gestation.[1] For patients with fetal growth restriction and preeclampsia, ACOG also recommends delivery between 34 and 37 weeks' gestation.

Details of the study

Chappell and colleagues conducted a randomized controlled trial among women with singleton or dichorionic diamniotic twin pregnancy between 34 and 36.6 weeks' gestation. Women were assigned to either planned delivery within 48 hours of randomization or expectant management until 37 weeks or earlier with clinical deterioration.

Among the 901 women included in the study, 450 were allocated to planned delivery and 451 to expectant management.

Study outcomes. The co-primary short-term maternal outcome was a composite of maternal morbidity with the addition of recorded systolic blood pressure of at least 160 mm Hg postrandomization (on any occasion). The co-primary short-term perinatal outcome was a composite of neonatal deaths within 7 days of delivery and perinatal deaths or neonatal unit admissions.

Participant details. At baseline, the average gestational age at randomization was 35.6 weeks, with equal distribution through the 3 weeks (34 through 36 weeks). About 37% of the women had severe hypertension (≥ 160 mm Hg) in the previous 48 hours prior to randomization, and approximately 22% had fetal growth restriction. The authors did not categorize the women based on severe features of preeclampsia.

Results. The investigators found that the proportion of women with the maternal co-primary outcome was significantly lower in the planned delivery group compared with the expectant management group (65% vs 75%), and the proportion of infants with the perinatal co-primary outcome was significantly higher in the planned delivery group

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compared with the expectant management group (42% vs 34%). The fact that early delivery led to more neonatal unit admissions for the infant, principally for a listed indication of prematurity and without an excess of respiratory or other morbidity, intensity of care, or length of stay, is very reassuring.

Study strengths and limitations

This is the largest study of women in this group allocated, randomized, and multicenter investigation addressing a very important clinical question. The patient population was mostly white, with only 13% black women, and had an average body mass index of 29 kg/m^2 (which is low compared with many practices in the United States). The average difference between the 2 study groups was the additional prolongation of pregnancy from enrollment to delivery of only 3 days, which may not be clinically relevant. More than half of the women in the expectant management group had medically indicated delivery before 37 weeks' gestation.

A limitation of this study is that all women with preeclampsia were considered the same—that is, no distinction was made between severe and nonsevere preeclampsia, and a significant proportion of women had severe hypertension at enrollment, which would make them ineligible for expectant management anyway.

The maternal composite outcome was driven mostly by severe hypertension and progression to severe preeclampsia (likely driven by severe hypertension). All other maternal outcomes were very rare or did not happen; however, the incidence of delivery indications for various preeclampsia-related complications was higher in the expectant management group.

WHAT THIS EVIDENCE MEANS FOR PRACTICE

In the United States, preeclampsia is categorized as severe or nonsevere, and gestational age at delivery depends on the type of preeclampsia. Clinicians should discuss expectant management after 34 weeks with patients who have preeclampsia without severe features, noting that this may decrease the chances for adverse maternal outcomes (mostly severe hypertension) at the cost of neonatal intensive care unit admission, which may depend on local practices. Attention also should be paid to particular patient populations (such as obese and African American women) who are at higher risk for developing adverse maternal outcomes. This may be particularly relevant in a smaller hospital setting in which patient follow-up may not be universal or access to a maternal-fetal medicine specialist may not be available to discuss management plans.

My personal take: I work in a large tertiary medical center. I worry about added prematurity, especially among women with superimposed preeclampsia where the diagnosis may be unclear. In my practice, we monitor patients with preeclampsia very closely, and with any signs of severe features we deliver them after 34 weeks. We follow ACOG guidelines for managing preeclampsia based on severity of disease and gestational age. I am not planning to immediately change my practice based on this study by Chappell and colleagues, and I will wait for results of long-term effects on neonatal outcomes, studies using biomarkers for risk assessment of women at risk for adverse outcomes, and opinions from ACOG and the Society for Maternal-Fetal Medicine about this management plan.

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The takeaway

In the absence of biomarkers for risk stratification and treatment of preeclampsia, delivering women who have a diagnosis of preeclampsia at or beyond 34 weeks' gestation may be a viable option for preventing maternal complications.

Reference

1. American College of Obstetricians and Gynecologists Committee on Practice Bulletins—Obstetrics. Gestational hypertension and preeclampsia. *Obstet Gynecol.* 2019;133:e1-e25.