

## MASTER CLASS

## Preeclampsia

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Preeclampsia is one of the most challenging and high-risk conditions that obstetric specialists will confront in their clinical practices.

This condition continues to be a vexing problem because the etiology remains evasive, not only in its onset, but often in its manifestations and complications as well.

Patients who develop preeclampsia fall into three categories. One subset of patients develops preeclampsia that remains mild and does not cause any major complica-

tions. Another subset develops a more advanced preeclampsia with some complications that are usually manageable, often without grave risk to the pregnancy.

The third subset of patients develops a severe form of preeclampsia based on precise, defined criteria. This form of preeclampsia may present in premature pregnancies, where the condition creates the greatest challenge and raises a clinical conundrum: Is it best to deliver the patient, or to embrace expectant management?

Because the severe form of preeclampsia is such a difficult problem and the outcome of the pregnancy hinges on the clinician's choice of the right approach, we thought it was important to dedicate a Master Class to the management of these high-risk patients.

I have invited Dr. Baha M. Sibai, an international expert on preeclampsia and eclampsia and a world leader in both clinical care and research in this field, to provide a thorough discussion of this difficult topic.

Dr. Sibai is professor of obstetrics and gynecology at the University of Cincinnati and has contributed to more than 350 studies in peer-reviewed journals on the subject of preeclampsia and eclampsia.

DR. REECE, who specializes in maternal-fetal medicine, is Vice President for Medical Affairs, University of Maryland, as well as the John Z. and Akiko K. Bowers Distinguished Professor and dean of the University of Maryland school of medicine. He is the medical editor of this column.

BY BAHA M.  
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## Expedited Delivery or Expectant Management?

Although gestational hypertension-preeclampsia most often develops in a mild form at or near term, it develops as severe preeclampsia in 0.9% of pregnancies, and sometimes before 34 weeks' gestation. These women are the patients who face the greatest dangers and present us with the greatest management and counseling challenges.

It is now about 2 decades since expedited delivery (the traditional approach to severe preeclampsia) was questioned and research was initiated to determine whether some form of expectant management could successfully prolong gestation and improve perinatal outcome without endangering the mother.

Although immediate delivery is always good for the mother, it may not be the best course for the fetus who is remote from term, it was reasoned, inasmuch as such babies often die or have high neonatal morbidity and prolonged stays in neonatal intensive care units (NICUs). Prolonging pregnancy, on the other hand, can result in maternal morbidity and fetal death or asphyxial damage in utero.

The issues were vexing, and the research question—how to achieve an optimal outcome for both the mother and baby—was clearly recognized back in the mid-1980s.

The results of two randomized trials published in the early 1990s, as well as several subsequent observational studies, suggested that expectant management in carefully selected women with severe preeclampsia at 24-33 weeks' gestation can be safe and can improve neonatal outcome.

Since then, our group at the University of Cincinnati (and other experts throughout the country) have utilized both clinical experience and the findings from these studies to formulate recommendations regarding the selection of appropriate candidates for expectant management and the criteria for maternal-fetal monitoring, as well as indications for delivery during the expectant-management period.

More research is undoubtedly needed, some dangers with expectant management still persist, and the issues remain vexing. We are, however, a significant step closer to achieving optimal outcomes for both mother and baby in a sizable number of women who develop severe preeclampsia before 34 weeks' gestation.

The keys include admitting every woman with severe preeclampsia to the labor-and-delivery ward; properly selecting and counseling patients for expectant management; thoroughly assessing and monitoring these patients; and knowing and properly detecting the indications for delivery, from severe fetal growth restriction (FGR) to evidence of the HELLP (hemolysis, elevated liver enzymes, and low platelet count) syndrome.

## When It's Too Early

Preeclampsia is considered severe when the patient has severe gestational hypertension in association with abnormal proteinuria, or hypertension in association with severe proteinuria (at least 5 g in a 24-hour period). Gestational hypertension is considered severe when systolic blood pressure is elevated to at least 160 mm Hg, and when diastolic blood pressure is elevated to at least 110 mm Hg for at least 6 hours.

There is general agreement that when severe preeclampsia is detected at 34 weeks' gestation or more, the baby should be delivered. Outcomes for the baby at this stage are generally favorable and are superior to the potential risks of expectant management. In addition, delivery at this stage avoids potential maternal morbidity.

On the other hand, when the problem presents in the second trimester (before 24 weeks' gestation), it is inadvisable to continue the pregnancy.

Our role as obstetricians is to counsel and provide information, and a patient's wishes must be honored. However, although data are limited regarding maternal and perinatal outcomes during the expectant management of patients whose severe preeclampsia develops before 24 weeks' gestation, we can say with certainty in our counseling that the likelihood of the baby's surviving expectant management is extremely low or nil, and the risk to the mother is significant. Expectant management in this case may expose her to severe morbidity and even death.

## What the Trials Tell Us

The trials that have evaluated the risks and benefits of expectant management before 34 weeks' gestation included more than 1,670 women at 24-34 weeks and 115 women at less than 25 weeks.

A review of the literature shows that at less than 24 weeks' gestation, expectant management was associated with high maternal morbidity and little perinatal benefit, but that at more than 24 weeks, expectant management led to favorable outcomes.

The authors of a trial published in 1990, in which 20 patients at 28-34 weeks' gestation were randomized to expedited delivery (glucocorticoid therapy followed by delivery in 48 hours) and 18 patients to expectant management, reported no increase in maternal complications (Obstet. Gynecol. 1990;76:1070-5).

What did significantly change with expectant management were length of pregnancy (mean, 7.1 days longer), number of neonates who required ventilation (11% vs. 35% of those with expedited delivery), and total neonatal complications (33% vs. 75%).

In 1994, my colleagues and I published the results of a randomized trial we conducted of 95 patients at 28-32 weeks' gestation. In all, 46 women received aggressive treatment (again, glucocorticoid therapy followed by delivery in 48 hours) and 49 women underwent expectant management (Am. J. Obstet. Gynecol. 1994;171:818-22).

Similarly, we saw no increase in maternal complications with expectant management, but observed a significant extension of pregnancy (mean, 15.4 days), less time in the NICU (20.2 vs. 36.3 days

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