



Elective induction of labor at 39 weeks in low-risk nulliparous patients does not increase the risk of adverse perinatal outcomes, according to ARRIVE trial investigators.

ILLUSTRATION: KIMBERLY MARTENS FOR OBG MANAGEMENT



Jaimey M. Pauli, MD

Dr. Pauli is Associate Professor and Attending Perinatologist, Division of Maternal-Fetal Medicine, Department of Obstetrics and Gynecology, Penn State Health, Milton S. Hershey Medical Center, Hershey, Pennsylvania.

The author reports no financial relationships relevant to this article.

What are the clinical implications of trial results on these 2 delivery-related issues: timing of elective induction of labor and timing of pushing in the second stage? Plus, ACOG's new recommendations for optimizing postpartum care.

The past year was an exciting one in obstetrics. The landmark ARRIVE trial presented at the Society for Maternal-Fetal Medicine's (SMFM) annual meeting and subsequently published in the *New England Journal of Medicine* contradicted a long-held belief about the safety of elective labor induction. In a large randomized trial, Cahill and colleagues took a controversial but practical clinical question about second-stage labor management and answered it for the practicing obstetrician in the trenches.

Finally, the American College of Obstetricians and Gynecologists (ACOG) placed new emphasis on the oft overlooked but increasingly more complicated postpartum period, offering guidance to support improving care for women in this transitional period.

Ultimately, this was the year of the *patient*, as research, clinical guidelines, and education focused on how to achieve the best in safety and quality of care for delivery planning, the delivery itself, and the so-called fourth trimester.

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ARRIVE: Labor induction at 39 weeks reduces CD rate with no difference in perinatal death or serious outcomes

Grobman WA, Rice MM, Reddy UM, et al; for the Eunice Kennedy Shriver National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network. Labor induction versus expectant management in low-risk nulliparous women. *N Engl J Med*. 2018;379:513-523.

The term “elective induction of labor” has long had a negative connotation because of its association with increased CD rates and adverse perinatal outcomes. This view was based on results from older observational studies that compared

outcomes for labor induction with those of spontaneous labor. In more recent observational studies that more appropriately compared labor induction with expectant management, however, elective induction of labor appears to be associated with similar CD rates and perinatal outcomes.

To test the hypothesis that elective induction would have a lower risk for perinatal death or severe neonatal complications than expectant management in low-risk nulliparous women, Grobman and colleagues conducted A Randomized Trial of Induction Versus Expectant Management (ARRIVE).¹

Study population, timing of delivery, and trial outcomes

This randomized controlled trial included 6,106 women at 41 US centers in the Maternal-Fetal Medicine Units Network of the Eunice Kennedy Shriver National Institute of Child Health and Human Development. Study participants were low-risk nulliparous women with a singleton vertex fetus who were randomly assigned to induction of labor at 39 to 39 4/7 weeks ($n = 3,062$) or expectant management ($n = 3,044$) until 40 5/7 to 42 2/7 weeks.

“Low risk” was defined as having no maternal or fetal indication for delivery prior to 40 5/7 weeks. Reliable gestational dating was required.

While no specific protocol for induction of labor management was required, there were 2 requests: 1) Cervical ripening was

requested for an unfavorable cervix (63% of participants had a modified Bishop score <5), and 2) a duration of at least 12 hours after cervical ripening, rupture of membranes, and use of uterine stimulant was requested before performing a CD for “failed induction” (if medically appropriate).

The primary outcome was a composite of perinatal death or serious neonatal complications. The main secondary outcome was CD.

Potentially game-changing findings

The investigators found that there was no statistically significant difference between the elective induction and expectant management groups for the primary composite perinatal outcome (4.3% vs 5.4%; $P = .049$, with $P < .046$ prespecified for significance). In addition, the rate of CD was significantly lower in the labor induction group than in the expectant management group (18.6% vs 22.2%; $P < .001$).

Other significant findings in secondary outcomes included the following:

- Hypertensive disorders of pregnancy were significantly lower in the labor induction group compared with the expectant management group (9.1% vs 14.1%; $P < .001$).
- The labor induction group had a longer length of stay in the labor and delivery unit but a shorter postpartum hospital stay.
- The labor induction group reported less pain and more control during labor.

WHAT THIS EVIDENCE MEANS FOR PRACTICE

After publication of the ARRIVE trial findings, both ACOG and SMFM released statements supporting elective labor induction at or beyond 39 weeks' gestation in low-risk nulliparous women with good gestational dating.^{2,3} They cited the following as important issues: adherence to the trial inclusion criteria except for research purposes, shared decision-making with the patient, consideration of the logistics and impact on the health care facility, and the yet unknown impact on cost. Finally, it should be a priority to avoid the primary CD for a failed induction by allowing a longer latent phase of labor, as long as maternal and fetal conditions allow.

In my practice, I actively offer induction of labor to most of my patients at 39 weeks after a discussion of the risks and benefits.

Results refute negative notion of elective labor induction

The authors concluded that in a low-risk nulliparous patient population, elective induction of labor at 39 weeks does not increase the risk for adverse perinatal outcomes and decreases the rate of CD and hypertensive disorders of pregnancy. Additionally, they noted that induction at 39 weeks should not be avoided with the goal of preventing CD, as even women with an unfavorable cervix had a lower rate of CD in the induction group compared with the expectant management group.

Immediate pushing in second stage offers benefits and is preferable to delayed pushing

Cahill AG, Srinivas SK, Tita AT, et al. Effect of immediate vs delayed pushing on rates of spontaneous vaginal delivery among nulliparous women receiving neuraxial analgesia: a randomized clinical trial. *JAMA*. 2018;320:1444-1454.

In a randomized trial of 2,414 women, Cahill and colleagues sought to answer a seemingly simple question: What is the best timing for pushing during the second stage of labor—immediate or delayed?

Practical management of the second stage of labor (defined as complete cervical dilation to the delivery of the infant) varies by provider and setting, and previous data on pushing efforts are conflicting. Delayed pushing, or “laboring down,” has been suggested to allow passive fetal rotation and to conserve maternal energy for pushing. Older studies have shown that delayed pushing decreases the rate of operative delivery. More recent study data have not demonstrated a difference between immediate and delayed pushing techniques on vaginal delivery rates and have noted that increased maternal and neonatal morbidities are associated with a longer second stage of labor.

The recent trial by Cahill and colleagues was designed to determine the effect of these 2 techniques on spontaneous vaginal delivery rates and on maternal and neonatal morbidities.⁴

Large study population

This randomized pragmatic trial was conducted at 6 centers in the United States. Study participants (2,404 women completed the study) were nulliparous women at 37 or more weeks’ gestation with neuraxial anesthesia who were randomly assigned at complete cervical dilation either to immediate pushing (n = 1,200) or to delayed pushing,

that is, instructed to wait 60 minutes before starting to push (n = 1,204). The obstetric provider determined the rest of the labor management.

The primary outcome was the rate of spontaneous vaginal delivery. Secondary outcomes included duration of the second stage of labor, duration of active pushing, operative vaginal delivery, CD, and several maternal assessments (postpartum hemorrhage, chorioamnionitis, endometritis, and perineal lacerations).

Both groups had similar vaginal delivery rates, differences in some measures

There was no difference in the primary outcome between the 2 groups: The spontaneous vaginal delivery rate was 85.9% (n = 1,031) in the immediate pushing group and 86.5% (n = 1,041) in the delayed pushing group (P = .67).

Analysis of secondary outcomes revealed several significant differences:

- decreased total time for the second stage of labor in the immediate pushing group compared with the delayed pushing group (102.4 vs 134.2 minutes) but longer active pushing time (83.7 vs 74.5 minutes)
- a lower rate of postpartum hemorrhage, chorioamnionitis in the second stage, neonatal acidemia, and suspected neonatal sepsis in the immediate pushing group
- a higher rate of third-degree perineal lacerations in the immediate pushing group.

No difference was found between groups in rates of operative vaginal deliveries, CDs, endometritis, overall perineal lacerations, or spontaneous vaginal delivery by fetal station or occiput position.

Authors’ takeaway

The authors concluded that since delayed

FAST TRACK

In nulliparous women with neuraxial anesthesia assigned to either immediate pushing or delayed pushing, there was no difference in the spontaneous vaginal delivery rate—85.9% vs 86.5%, respectively

WHAT THIS EVIDENCE MEANS FOR PRACTICE

After reviewing the available literature in light of this study's findings, ACOG released a practice advisory in October 2018 stating that "it is reasonable to choose immediate over delayed pushing in nulliparous patients with neuraxial anesthesia."⁵ Nulliparous patients with neuraxial anesthesia should be counseled that delayed pushing does not increase the rate of spontaneous vaginal birth and may increase both maternal and neonatal complications. As this may be a practice change for many obstetrics units, the obstetric nursing department should be included in this education and counseling.

In my practice, I would recommend immediate pushing, but it is important to include both the patient and her nurse in the discussion.

pushing does not increase spontaneous vaginal delivery rates and increases the duration of the second stage of labor and both maternal and neonatal morbidity, immediate pushing may be preferred in this patient population.

ACOG aims to optimize postpartum care

FAST TRACK

Postpartum care plans should be started before birth, during regular prenatal care, and adjusted in the hospital as needed

American College of Obstetricians and Gynecologists. ACOG Committee Opinion No. 736. Optimizing postpartum care. Obstet Gynecol. 2018;131:e140-e150.

In May 2018, ACOG released "Optimizing postpartum care," a committee opinion that proposes a new model of comprehensive postpartum care focused on improving both short- and long-term health outcomes for women and infants. (This replaces the June 2016 committee opinion No. 666.) Described as "the fourth trimester," the postpartum period is a critical transitional period in which both pregnancy-related and pre-existing conditions may affect maternal, neonatal, and family status; half of pregnancy-related maternal deaths occur during the postpartum period.⁶

The postpartum visit: Often a lost opportunity

ACOG cites that up to 40% of women in the United States do not attend their postpartum visit.⁶ Many aspects of the postpartum visit, including follow-up for chronic diseases, mental health screening, and contraceptive

counseling, provide opportunities for acute intervention as well as establishment of healthy behaviors. Some studies have shown that postpartum depression, breastfeeding, and patient satisfaction outcomes improve as a result of postpartum engagement.

ACOG's recommendations

Ongoing process. ACOG's first proposed change concerns the structure of the postpartum visit itself, which traditionally has been a single visit with a provider at approximately 6 weeks postpartum. Postpartum care plans actually should be started before birth, during regular prenatal care, and adjusted in the hospital as needed so that the provider can educate patients about the issues they may face and resources they may need during this time. This prenatal preparation hopefully will encourage more patients to attend their postpartum visits.

Increased provider contact. Another proposed change is that after delivery, the patient should have contact with a provider within the first 3 weeks postpartum. For high-risk patients, this may involve

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WHAT THIS EVIDENCE MEANS FOR PRACTICE

Postpartum care should be seen as an ongoing process to address both short- and long-term health outcomes for the patient, her newborn, and their family. This process should begin with planning in the antenatal period, continue with close individualized follow-up within the first 3 weeks of birth, and conclude with a comprehensive postpartum evaluation and transition to well-woman care. Shifting the paradigm of postpartum care will take considerable commitment and resources on the part of obstetric providers and their practices.

In my practice, we routinely see hypertensive patients within the first week postpartum and patients at risk for postpartum depression within the first 2 weeks in our clinics. We have a standard 6-week postpartum visit for all patients as well. Going forward, we need to further determine how and when we can implement ACOG's extensive new recommendations for optimizing postpartum care.

- infant care and feeding
- sexuality, contraception, and birth spacing
- sleep and fatigue
- physical recovery from birth
- chronic disease management and transition to primary care provider
- health maintenance
- review of labor and delivery course if needed
- review of risks and recommendations for future pregnancies.

After these components are addressed, it is expected that the patient will be transitioned to a primary care provider (who may continue to be the ObGyn, as appropriate) to coordinate her future care in the primary medical home.

an in-person clinic visit as soon as 3 to 10 days postpartum (for hypertensive disorders of pregnancy) or at 1 to 2 weeks (for postpartum depression screening, incision checks, and lactation issues). For lower-risk patients, a phone call may be appropriate and/or preferred. Ongoing follow-up for all patients before the final postpartum visit should be individualized.

Postpartum visit and care transition. ACOG recommends a comprehensive postpartum visit at 4 to 12 weeks to fully evaluate the woman's physical, social, and psychologic well-being and to serve as a transition from pregnancy care to well-woman care. This is a large order and includes evaluation of the following:

- mood and emotional well-being

Useful resource for adopting new paradigm

ACOG's recommendations are somewhat daunting, and these changes will require education and resources, a significant increase in obstetric provider time and effort, and consideration of policy change regarding such issues as parental leave and postpartum care reimbursement. As a start, ACOG has developed an online aid for health care providers called "Postpartum toolkit" (<https://www.acog.org/About-ACOG/ACOG-Departments/Toolkits-for-Health-Care-Providers/Postpartum-Toolkit>), which provides education and resources for all steps in the process and can be individualized for each practice and patient.⁷ ●

FAST TRACK

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References

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