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ABSTRACT & COMMENTARY

The Utility of Nuchal Translucency Screening in the Era of Cell-Free Fetal DNA Testing

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Dr. Eke has no relevant financial relationships with ineligible companies to disclose.

SYNOPSIS: In this retrospective cohort study of 1,901 pregnant women between 11 weeks and 13 weeks six days of gestation who had a nuchal translucency (NT) screening for fetal aneuploidies and demonstrated NT measurements > 95th percentile, 47% of fetuses (894/1,901) had an NT between the 95th and 99th percentile and 53% (1,007/1,901) had an NT ≥ the 99th percentile. In addition, of the 43% of fetuses (814/1,901) with at least one abnormality (structural or genetic), 34% (279/814) would have been missed in the first trimester if only cell-free deoxyribonucleic acid was used for prenatal genetic screening. First trimester NT screening still has a role in current day aneuploidy and early fetal anatomy screening.

SOURCE: Bardi F, Bosschieter P, Verheij J, et al. Is there still a role for nuchal translucency measurement in the changing paradigm of first trimester screening? *Prenat Diagn* 2020;40:197-205.

Fetal chromosomal and structural defects are a major cause of neonatal morbidity and mortality.[1,2] The incidence of fetal aneuploidy has been demonstrated to increase with maternal age, with Down syndrome being the most common fetal aneuploidy.[2] Although there are several fetal screening procedure technologies available, first trimester combined screening and cell-free fetal deoxyribonucleic acid (DNA) assays are the two most commonly used methods to screen for fetal aneuploidies and structural defects.[2]

A first-trimester combined screening, offered between 11 and 14 weeks of gestation, uses an ultrasound assessment of fetal nuchal translucency (NT) combined with maternal serum concentrations of beta human chorionic gonadotropin (β-hCG) and pregnancy-associated plasma protein-A (PAPP-A) measurements to determine the risk of fetal aneuploidies.[2] Unlike cell-free fetal DNA assessment for fetal aneuploidies, fetal nuchal translucency, when combined with maternal age, is a universally acceptable first-trimester screening test for

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aneuploidies in both singleton and multiple pregnancies.[2] Although there is not a strict cut-off for normal or abnormal nuchal translucency, the 95th and 99th percentiles for gestational age measurements commonly are used, with an NT in the 99th percentile having a greater risk of fetal aneuploidy compared to the 95th percentile.[3] With the introduction and increasing use of cell-free fetal DNA testing, the utility of first-trimester combined screening has been increasingly questioned.[4]

In this retrospective cohort study from the Netherlands, Bardi and colleagues reported their findings in pregnant women between 11 weeks and 13 weeks six days of gestation who had an NT screening for fetal aneuploidies within the six-year period between January 2010 and January 2016.[5] Women were eligible for inclusion if their NT measurement was greater than or equal to the 95th percentile at seven tertiary centers in the Netherlands: Erasmus Medical Center Rotterdam, Leiden University Medical Center, Maastricht University Medical Center, Radboud University Medical Center Nijmegen, University Medical Center Groningen, VU University Medical Center Amsterdam, and Academic Medical Center (AMC), University of Amsterdam. Chromosomal microarray (CMA) was offered to women with an NT ≥ 99th percentile (≥ 3.5 mm) and/or fetal structural abnormalities. All seven centers used a cut-off of 5 megabytes for CMA, except for one center using a cut-off of 0.15 megabytes. Pregnant women were excluded if they had NT measurements < 95th percentile. Descriptive analyses were performed to describe the study sample, specifically describing NT, maternal serum screening, and CMA characteristics. Categorical variables were reported as proportions, and continuous measures were reported as means. Differences between groups were assessed with Fisher's exact tests and Chi-square test for categorical variables (where applicable), and Student's t-tests for continuous variables.

In the six-year period, 23,494 NT measurements were evaluated. After excluding cases that did not meet inclusion criteria, 1,901 pregnancies with NT measurements ≥ 95th percentile were included for analysis. The median NT measurement was 3.6 mm (interquartile range [IQR]: 2.8-5.1 mm), while the mean maternal age at the time of NT measurement was 34 years (range, 18-48 years). Of all fetuses with an NT ≥ 95th percentile, 894 (47%) had an NT between the 95th and 99th percentile and 1,007 (53%) had an NT ≥ the 99th percentile. A total of 814 (43%) pregnancies had at least one abnormality (structural or genetic), with 23.3% of these fetuses (n = 190) having an NT between the 95th and 99th percentile, and 76.7% of the fetuses (n = 624) having an NT ≥ 99th percentile. Of 636 fetuses (33.3%) with genetic abnormalities, 560 (29.4%) were chromosomal in nature, with trisomy 21, 18, and 13 observed in 272/560 (45.5%), 134/560 (22.4%), and 50/560 (8.4%) cases, respectively. Of the 178 (9.3%) fetuses with structural anomalies but normal chromosomal analyses, cardiac, urogenital, and central nervous system defects were the most common anomalies, and were detected in 74 (3.9%), 20 (1%), and 11 (0.6%) fetuses, respectively. Multiple congenital abnormalities were diagnosed in 29 fetuses (1.6%). Of the 814 congenital structural abnormalities, 34% would have remained undiagnosed in the first trimester if cell-free DNA testing had been offered as the only screening test. These include sex chromosome abnormalities (n = 81), triploidy (n = 7), single gene disorders (n = 38), submicroscopic aberrations < 5 Mb (n = 38), and structural abnormalities diagnosed in the first trimester (n = 115).

■ COMMENTARY

In many developed countries, prenatal genetic screening has become a standard of care in all pregnancies. The introduction and increasing use of genome-wide-based testing, such as cell-free fetal DNA screening, into obstetric practice has revolutionized the strategies used for prenatal testing, and has raised important questions about the continued use and utility of first-trimester NT assessment in aneuploidy screening.[4] Although cell-free fetal DNA testing has better positive and negative predictive values in detecting common fetal trisomies such as 21, 18, and 13, as well as some sex chromosome aneuploidies, cell-free fetal DNA screening does not provide as much information on fetal structural anomalies that can be readily diagnosed in the first trimester using combined first-trimester ultrasound and serum screening, making first-trimester NT screening a relevant and essential component of prenatal genetic screening.[4]

This study by Bardi et al demonstrated that, although genome-wide-based cell-free fetal DNA tests aimed at accurate prenatal identification of fetal aneuploidies are superior to first-trimester NT screening, first-trimester

NT screening has an advantage over cell-free DNA testing methods in the identification of common structural anomalies, especially cardiac, urogenital, and central nervous system structural anomalies in fetuses with normal chromosomal analyses.[5] In addition, there is an association between an increased NT measurement and the risk of aneuploidies, with an NT detection rate of 75% with a 5% false-positive rate and a combined first-trimester screening (NT plus hCG and PAPP-A) detection rate of 95% and a 5% false-positive rate for Down syndrome, but a lower detection rate for either trisomy 18 or 13. More importantly, in addition to nuchal enlargement, the first-trimester ultrasound assessment can detect other anomalies, including central nervous system anomalies (anencephaly and ventriculomegaly), cardiac anomalies (common atrioventricular canal defect and hypoplastic left heart), and many other structural anomalies not detectable with cell-free fetal DNA testing.

In conclusion, despite the increasing use of cell-free DNA for prenatal genetic screening because of its high positive and negative predictive values in detecting common chromosomal aneuploidies, the combined first-trimester NT and maternal serum screening can detect very lethal structural anomalies not detectable by cell-free DNA. Therefore, it still is recommended in current day obstetric practice. ■

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ABSTRACT & COMMENTARY

Are We Prescribing Enough Emergency Contraception?

By Rebecca H. Allen, MD, MPH, Editor

SYNOPSIS: In this national sample of obstetrician-gynecologists, the majority (84%) reported offering at least one form of emergency contraception, with 80% offering the levonorgestrel pill, 18% offering ulipristal acetate, and 29% offering the copper intrauterine device.

SOURCE: Castleberry NM, Stark L, Schulkin J, Grossman D. Oral and IUD emergency contraception provision among a national sample of obstetrician-gynecologists. *Contraception* 2020;102:406-408.

The authors of this study sought to describe national prescribing patterns for emergency contraception among obstetrician-gynecologists (OB/GYNs). The survey was offered to 2,500 American College of Obstetricians and Gynecologists (ACOG) members via email between August 2016 and March 2017. Potential participants received five weekly email reminders, one postcard reminder, and one paper mailing. The goal of the study was to achieve at least a 50% response rate, which is typical for physician surveys.

A total of 47 participants were retired and no longer in practice, leaving 2,453 active members of whom 1,280 responded, for a response rate of 52.2%. Of these, 371 were excluded for incomplete responses and, thus, data analysis then was conducted on 909 participants. In the previous 12 months, 84.3% of respondents reported offering at least one form of emergency contraception (EC). The majority, 80.4%, offered levonorgestrel 1.5 mg, 30.5% offered combined hormonal contraceptive pills, 29% offered the copper intrauterine device (IUD), and 17.9% offered ulipristal acetate (UA), 30 mg.

Approximately 5.4% of participants reported not offering any form of EC and 11.3% referred patients elsewhere or reported not having patients who requested EC. Of the 264 participants who offered the copper IUD for EC in the prior 12 months, 30.3% had placed one device, 22.7% had placed the device once or twice, and 7.6% reported placing the device three times or more. Those who offered the copper IUD were more likely to be younger, live in the West, and work for a university-affiliated faculty practice. The main reasons why clinicians reported not recommending a copper IUD for EC included: patients rarely came to the office seeking EC (52.4%), lack of patient interest (33.7%), and the copper IUD was not stocked on site (27.8%).

■ COMMENTARY

EC refers to contraceptive methods that can be used to prevent pregnancy in the first five days following unprotected intercourse, contraceptive failure, or sexual assault. Three types are commonly used: the copper T380A IUD, which is the most effective; 30 mg of oral UA, which is the next most effective; and, finally, 1.5 mg

of oral levonorgestrel. The levonorgestrel pill is available without a prescription to women of any age. However, UA requires a prescription. UA is more effective than levonorgestrel in preventing pregnancy at any point in time within 120 hours after unprotected intercourse and among women with a body mass index of 25 and above.[1] Certain combinations of combined oral contraceptive pills also can be used for emergency contraception but, typically, have more side effects and there is not dedicated packaging for these regimens.

The authors of this study found that, although UA and the copper IUD are the most effective forms of EC, they are the least offered by OB/GYNs. Furthermore, about one-third of OB/GYNs reported offering combined oral contraceptives as a method of EC even though this regimen is no longer recommended as first-line. These findings are not surprising. First, 1.5 mg of levonorgestrel ("Plan B") is the most widely known type of EC, with both physicians and patients being familiar with it. Second, a recent study found that only 10% of pharmacies in 10 large U.S. cities stocked UA.[2] I, too, have had difficulties prescribing UA because pharmacies in my area do not have the medication. Therefore, physicians likely are not prescribing UA because it is not available. In terms of the copper IUD, it is probable that patients are unaware of this method and are, therefore, not requesting it. Additionally, physicians may not have the device stocked in their offices or offer same-day access to the IUD. Evidence-based guidelines now recommend same-day provision of long-acting reversible contraceptives if possible.[3] However, economics sometimes prohibit physicians from stocking expensive devices in the office. Even if both the patient and the physician are aware of the copper IUD and it is offered, it may not be acceptable for the patient to use long term because of its expected effect on menses. Nevertheless, we need to do a better job educating patients about emergency contraception and how to access it when needed.

Barriers to the use of emergency contraception among both providers and patients include misconceptions about its mechanism of action (it is not an abortifacient) and the cost for the over-the-counter medications or lack of insurance coverage. Providing advance prescriptions for 1.5 mg of levonorgestrel and 30 mg of UA will help patients obtain the medication at a lower cost using health insurance (compared to over-the-counter prices) and will ensure they can obtain the medication any day or night, as needed.[3] This survey addresses provider-level barriers, but there also are barriers in the pharmacy that patients may encounter as well — in terms of accessing an available provider in the healthcare system. Although this study has certain limitations — as does any national survey — in terms of representative sampling of the target audience (OB/GYNs), it likely is an accurate picture of emergency contraception prescribing patterns in the United States. Although levonorgestrel methods were made over-the-counter in 2013, we still have a long way to go. ACOG recommends that providers consider the following to increase access to emergency contraception:[1]

- Counsel patients that a copper IUD is the most effective form of emergency contraception and integrate same-day copper IUD emergency contraception provision into their practices.
- Prescribe UA when possible because it is more effective than levonorgestrel at all times up to five days after unprotected intercourse and in women of all weights.
- Write advance prescriptions for emergency contraception, particularly for UA, to increase awareness and reduce barriers to immediate access.
- Provide a referral for a woman who desires emergency contraception if her healthcare provider, pharmacy, or institution has an objection to providing it. ■

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ABSTRACT & COMMENTARY

Reducing Opioid Prescriptions Following Gynecologic Surgery

By Katherine Rivlin, MD, MSc

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Dr. Rivlin has no relevant financial relationships with ineligible companies to disclose.

SYNOPSIS: With sufficient institutional buy-in, appropriate patient education, and staff adherence to standardized postoperative prescribing practices, patients undergoing abdominal gynecologic surgery can leave the hospital safely and recover with low doses of opioid medications, or no opioid prescription at all.

SOURCE: Margolis B, Andriani L, Baumann K, et al. Safety and feasibility of discharge without an opioid prescription for patients undergoing gynecologic surgery. *Obstet Gynecol* 2020;136:1126-1134.

Patients with unused prescribed opioids and their household contacts are at a greater risk of opioid misuse than those without such opioids.[1] A reduction in opioid prescriptions among postoperative patients could, therefore, go a long way in combating the opioid epidemic in the United States. This retrospective cohort study assesses the effect of a quality improvement (QI) intervention to reduce unnecessary opioid prescriptions in patients undergoing gynecologic surgery.

The QI intervention was introduced in June 2019 at NYU Langone Health, and aimed at all gynecologic oncology patients undergoing both laparotomy and minimally invasive abdominal and pelvic surgery. Six months into the intervention, the authors conducted a retrospective chart review comparing postintervention patients to a historical control cohort of patients from the six months leading up to the intervention. They excluded patients who underwent vulvar, vaginal, or hysteroscopic procedures, as well as patients whose surgery was performed in conjunction with another surgical service.

The intervention consisted of three primary pillars. The first pillar, preoperative patient counseling, included setting expectations for limited or no routine opioid prescriptions and describing strategies for minimizing pain without opioids. The second pillar incorporated standardized perioperative analgesia. In conjunction with an enhanced recovery pathway, all patients received perioperative acetaminophen and gabapentin; early feeding and ambulation; and postoperative opioid-sparing analgesia, including scheduled acetaminophen, ibuprofen, and gabapentin. The third pillar was a postoperative opioid prescription algorithm. Patients received discharge opioid prescriptions according to their opioid requirement during admission. Patients discharged on the same day as surgery received no opioid prescription.

The research team encouraged patients to call in after discharge to report poorly controlled pain and assured them that opioids would be prescribed as needed. The research team ensured compliance with the intervention's protocol among nurses, house staff, and attending physicians by providing continued educational reinforcement. They performed a chart extraction from both cohorts to assess demographic information, procedure details, perioperative details and complications, preoperative and postoperative opioid prescriptions, and postoperative complications. Their primary outcome measurement was the percentage of patients discharged with an opioid prescription.

They analyzed 276 patients pre-intervention and 256 patients postintervention. The two cohorts were similar demographically, except that the pre-intervention group had more Caucasian patients ($P = 0.046$). The majority of surgeries in both cohorts were minimally invasive.

The percent of patients discharged with an opioid prescription decreased from 82.7% to 23.1% ($P < 0.001$) following the intervention. Of written opioid prescriptions, the mean number of tablets decreased from 7.2 tablets (standard deviation [SD] = 5.7) to 1.8 tablets (SD = 4.3) ($P < 0.001$). There was no difference in postoperative complications, phone calls for pain, opioid refills, or new opioid prescriptions after discharge between the two cohorts.

■ COMMENTARY

As much as 92% of patients have unused opioids following surgical recovery.[2] Unused opioids have the potential to be stored and disposed of improperly and can lead to opioid abuse, and even overdose, among patients and patients' household contacts. Hysterectomies are one of the most commonly performed surgical procedures for women in the United States, and reducing opioid prescriptions following this common procedure could greatly reduce the number of unused opioids in households across the United States.

This study documents tremendous efforts from the authors and their institution to implement a QI intervention aimed at reducing postoperative opioid prescription. Based on the results reported in this retrospective chart review, this effort was quite successful.

However, the article also makes clear the challenges of implementing such an intervention. This QI intervention required education and reeducation of the care team and support staff. The authors noted some "initial hesitation" among the staff to discharge patients without opioids, especially following laparotomy, since this was the most "novel" change from previous practice. Such change was only possible through a "shared mission" among all healthcare providers to reduce opioid prescriptions.

NYU already had implemented an enhanced recovery pathway, an intervention that has been shown to reduce opioid use following surgery.[3,4] Since the hospital and staff had already been exposed to institution-wide perioperative changes, the intervention likely was integrated more easily into routine clinical practice.

Clinically, someone considering implementing such an intervention at their institution should learn the following from the authors' experiences:

- Recognize the importance of buy-in at all levels of care, from the patient, to nursing, to house staff, to the institution at large.
- Educate, reeducate, and educate again. Continuously check with your team to assess protocol compliance and provide feedback and support where needed.
- Move in a stepwise fashion, rather than implementing drastic changes all at once. This will increase compliance at every level.

Several important limitations to this study warrant discussion. The authors used pain phone calls and phone calls that resulted in new or refilled opioid prescriptions as a proxy for inadequate pain control. They concluded that

because the number of phone calls was the same pre- and postintervention, that pain control did not change with reduced opioid prescriptions.

Clinically, we know that some patients feel more empowered to call their care team than others, and an education intervention detailing the plan to reduce opioid prescriptions might have further dissuaded such patients. Therefore, phone calls are a poor proxy for adequate pain control. The study team surveyed some (but not all) patients on their perceptions of postoperative pain, and most patients felt "satisfied." These pain surveys occurred at the two-week postoperative visit and, therefore, were subject to recall bias, a poor measure of pain. A more nuanced measure of pain control could have included daily pain diaries collected prospectively.

The authors also noted that, although the preintervention group had more Caucasian patients than the postintervention group, this difference was "not likely to affect outcome measures." We know that among postpartum patients, Hispanic and non-Hispanic Black patients are less likely to be prescribed opioids at the time of discharge compared to non-Hispanic white patients.[5] Although this question is unstudied in the gynecological oncology patient population, similar disparities in opioid prescribing practices have been well documented across multiple medical settings.[6,7] The differences in demographics between the two cohorts, therefore, do warrant additional attention, since race could have played an important role in provider prescribing practices. Standardizing postoperative pain medication in an algorithm intended to reduce opioid prescriptions may have the unintended consequence of reducing racial disparities in prescribing practices as well and could pave the way to more equitable analgesia. ■

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ABSTRACT & COMMENTARY

What Is the Optimal Mode of Delivery of the Second Twin?

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SYNOPSIS: In this randomized clinical trial by Tong and colleagues, 343 pregnant women with twin gestations were randomized to planned cesarean delivery and planned vaginal delivery groups (208 patients vs. 135 patients, respectively) between October 2013 and March 2015. There were no statistically significant differences in the composite primary neonatal outcome (which occurred in 1.9% of neonates in the planned cesarean delivery arm vs. 2.2% in the planned vaginal delivery arm) and secondary outcomes in women randomized to planned cesarean delivery compared to those randomized to planned vaginal delivery. The cesarean delivery rate in the planned vaginal delivery arm was 49% compared to the cesarean rate of 99% in the planned cesarean delivery arm. If all criteria for vaginal delivery are met, it would be reasonable and appropriate to offer women with diamniotic twin gestations planned vaginal delivery between 34 0/7 to 37 6/7 weeks of gestation.

SOURCE: Tong Y, Sun Q, Shao X, Han F. A randomized trial in comparison between planned cesarean and vaginal delivery on twin pregnancy. *Ginekol Pol* 2020;91:600-606.

The incidence of twin pregnancies has doubled in the last three decades, primarily as a result of increasing access to assisted reproductive technologies.[1] This rise in twin pregnancy rates has been associated with significant uncertainties about the optimal timing and mode of delivering twins, especially as training in breech extractions and assisted vaginal deliveries among obstetrics and gynecology trainees has declined, while cesarean deliveries for twin pregnancies have increased in the last decade.[2-4]

The mode of delivery in twin pregnancies usually is determined by several factors, including the presentation of the leading twin, the estimated fetal weight of both fetuses, gestational age, estimated weight differences (weight discordance) between both fetuses, concomitant maternal medical conditions that contraindicate vaginal delivery, and maternal preference.[5] When the leading twin is cephalic presenting, and the estimated fetal weight discordance between both fetuses is < 20% (with the first being the larger twin), vaginal delivery and planned cesarean delivery both are options. In a 2013 publication, Barrett et al demonstrated that planned cesarean delivery did not reduce neonatal morbidity or mortality, with no short-term neonatal or maternal benefits when compared to planned vaginal delivery for delivery of twins between 32 and 39 weeks of gestation.[2]

In this randomized controlled trial, Tong et al reported their findings in women offered a trial of vaginal delivery compared to planned cesarean delivery for dichorionic twins.[6] Women were included in this study if they met the following criteria: gestational age of between 32 and 39 weeks, leading twin in cephalic presentation, live fetuses, and estimated fetal weight of between 1,500 g and 4,000 g by ultrasound within one week of delivery. Women were excluded if they had monoamniotic twin gestation, presence of fetal anomaly not compatible with life, any contraindications to labor or vaginal delivery, prior participation in the Twin Birth Study, and a history of fetal reduction of one of the twins at > 13 weeks of gestation of the index pregnancy.

Using a centrally controlled computer randomization system, the participants were randomized to planned vaginal delivery or planned cesarean delivery. All fetuses were monitored continuously until the time of delivery. The primary outcome was a composite of neonatal morbidity and mortality and neonatal life-threatening conditions. Life-threatening conditions in the neonates included birth trauma within 72 hours after birth or at the time of discharge; subdural, intraventricular, or intracerebral hemorrhage; Apgar score < 4 at five minutes; coma; seizures on at least two occasions within 72 hours of birth; need for prolonged assisted ventilation using an endotracheal tube within 72 hours of birth; sepsis within 72 hours of delivery; necrotizing enterocolitis; pneumatosis intestinalis; bronchopulmonary dysplasia; or cystic periventricular leukomalacia. The secondary outcome was a composite of maternal death or serious maternal morbidity before 28 days postpartum, defined as one or more of the following: postpartum hemorrhage ≥ 1,500 mL; need for blood transfusion; need for dilatation and curettage after delivery; laparotomy; genital tract injury; third- or fourth-degree perineal lacerations; thromboembolism requiring anticoagulation; wound infection requiring prolonged hospitalization or readmission; wound dehiscence; or maternal death.

From October 2013 to March 2015, a total of 343 pregnant women met inclusion criteria. Two hundred eight women were randomized to the planned cesarean delivery group, and 135 women were randomized to the planned vaginal delivery group in a 2:1 ratio. The baseline characteristics were similar between both groups. The composite primary outcome occurred in 1.9% of the neonates in the planned cesarean delivery arm and in 2.2% of the neonates in the planned vaginal delivery arm but was not statistically significant. There were no statistically significant differences in the composite secondary outcomes in women randomized to planned cesarean delivery compared to those randomized to planned vaginal delivery. The cesarean delivery rate in the planned vaginal delivery arm was 49% compared to the cesarean rate of 99% in the planned cesarean delivery arm.

■ COMMENTARY

Based on available evidence from the Twin Birth Study, a landmark multicenter, randomized controlled trial published in the *New England Journal of Medicine* in 2013 by Barrett et al, there are no short- and medium-term neonatal or maternal benefits for planned cesarean delivery when compared to planned vaginal delivery.[2] In fact, a two-year neurodevelopmental follow-up study of 4,603 children from the initial cohort of the Twin Birth Study showed that a policy of planned cesarean delivery between 32 to 39 weeks of gestation did not offer any benefit when compared to planned vaginal delivery.[7] In addition, a survey of the women who participated in both arms (planned vaginal and planned cesarean) in the Twin Birth Study demonstrated a preference for vaginal delivery, even in women who delivered by cesarean.[8] Although the study by Tong et al demonstrated similar findings to the Twin Birth Study in the immediate postpartum period, follow-up studies of women and children in the randomized trial by Tong et al would be critical to demonstrate if medium- to long-term outcomes differ in women (and their children) randomized to planned cesarean compared to planned vaginal delivery.[6]

It is important to compare and contrast this study by Tong et al with the multicenter, randomized controlled trial by Barrett et al. Both randomized clinical trials are similar in several ways: Both recruited women with diamniotic twin pregnancies between 32 to 39 completed weeks of gestation, both had a central coordinating center (to reduce selection bias), and both had very similar primary and secondary outcomes. In addition, the cesarean delivery rate in the planned vaginal delivery arm in both trials (44% in the Twin Birth Study vs. 49% in the trial by Tong et al) and the cesarean delivery rate in the planned cesarean arm (91% in the Twin Birth Study vs. 99% in the trial by Tong et al) were very similar. However, the two clinical trials differ significantly in a number of ways. First, the sample size for the Tong et al trial was 343 women, while the sample size for the Twin Birth Study was 2,804 women (eight times the sample size of the Tong et al trial). Second, although both studies were multicenter trials, Barrett et al involved 106 participating centers in 25 countries while the trial by Tong et al did not report participating countries and centers. Third, in the Twin Birth Study, most women

delivered between 32 and 37 weeks of gestation (83% of the women in both arms), while < 50% of women delivered between 32 and 37 weeks of gestation in the trial by Tong et al. Although both studies reported similar outcomes in the immediate postpartum period, the findings from the Twin Birth Study are more robust (based on greater sample size) and generalizable (a multicountry, multicenter randomized trial).

Based on these data, since planned cesarean delivery did not reduce the risk of fetal complications or serious neonatal morbidity at birth in both randomized clinical trials, it would be reasonable, and may be preferable and appropriate, to deliver women with diamniotic twin gestations between 32 and 39 weeks of gestation vaginally if the first twin is cephalic presenting and the estimated fetal weight discordance between both fetuses is < 20%. This is assuming there are no other contraindications to labor, and an obstetrician experienced in twin vaginal breech delivery is available. ■

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CME/CE QUESTIONS

1. **Which of the following can be picked up with the first-trimester combined screening, but not with cell-free fetal DNA testing?**
   a. Isolated tricuspid regurgitation
   b. Trisomy 21 (Down syndrome)
   c. Trisomy 18 (Edwards syndrome)
   d. Trisomy 13 (Patau syndrome)
2. **In the study by Margolis et al, a quality improvement intervention successfully reduced the percentage of patients discharged with an opioid prescription among which of the following patients?**
   a. Patients undergoing minimally invasive surgeries only
   b. Patients undergoing laparotomy only
   c. Patients undergoing hysteroscopic surgeries only
   d. Patients undergoing both laparotomy and minimally invasive surgeries
3. **In the study by Castleberry et al, physicians were more likely to recommend the copper intrauterine device for emergency contraception if they were:**
   a. older.
   b. in private practice.
   c. living in the West.
   d. Hispanic.
4. **Which of the following is a contraindication to vaginal delivery of twins?**
   a. Gestational age of 37 weeks
   b. Estimated fetal weight of 6,000 g in the second twin
   c. Estimated fetal weight discordance of 8%
   d. The presence of an obstetrician with expertise in vaginal delivery of twins

[IN FUTURE ISSUES]

Pregnancy After Treatment for Pelvic Floor Disorders: Risks and Considerations