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CLINICAL OPINION

Translating data to dialogue: How to discuss mode of delivery with your patient with twins

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KEY WORDS
Twins
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Number needed to treat

Objective: Patients are given options with regard to the mode of delivery with increasing frequency. The manner in which obstetricians frame the risk/benefit information can have dramatic impact on the ultimate decision made by the patient.

Study design: Recently published epidemiologic data reported increased morbidity and mortality to the second twin on the basis of mode of delivery. In this analysis, the findings of the epidemiologic studies were translated from odds ratio into the number of cesarean deliveries that would be required to prevent an adverse outcome for the second twin.

Results: For gestations of $\geq$36 weeks, 97 cesarean deliveries would need to be performed to prevent a single serious morbidity or mortality in a second twin. This number is within the range needed to prevent uterine rupture associated with trial of labor following cesarean delivery (556) or morbidity related to vaginal breech delivery (167).

Conclusion: Number needed to treat may be more useful than odds risk assessment in patient counseling.

The optimal mode of delivery for twin gestation remains unclear. Until the completion of a randomized clinical trial, population-based data provide the best estimates of risk related to mode of delivery. This journal recently published 3 epidemiologic studies of the outcome of the second twin from the retrospective population-based cohort of all U.S. twin deliveries maintained by the Centers for Disease Control and Prevention.[1,2,3] Each paper provided detailed prevalence and adjusted risk assessment of adverse outcomes of the second twin on the basis of mode of delivery. Each paper found that vaginal birth of the first twin was associated with statistically significant increased odds of morbidity and/or mortality for the second twin, which was further increased when cesarean delivery for the second twin was required. The prevalence of the severe adverse outcomes, however, was low. This distinction between relative and absolute risk is difficult for clinicians to convey to patients in a meaningful, intuitive manner.

We understand little about how patients perceive risk information and the optimal method of communication for medical decision making. The use of relative risk (where the value of treatment is highlighted) has been associated with increased acceptance of treatment, whereas discussions of absolute prevalence (in which the frequency of abnormal outcome is highlighted) can decrease the acceptance of a specific therapy.[4] Recently the number needed to treat (NNT) has been suggested as the means to convey information with regard to risk and benefit.

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Table I The number of cesarean deliveries for both twins needed to prevent adverse outcome in preterm twins (less than 36 weeks), compared with a trial of labor in which the first twin is delivered vaginally and the presentation of the second twin not specified

Preterm	Number	Prevalence, %	No. of events	ARR per 10,000	NNT: 1/(ARR/10,000)	Odds ratio* (95% CI)
Low Apgar less than 7						
C-C	10,000	0.548	54.8	128.2	78	Reference
V-V	8890	0.573	50.9			1.43 (1.31, 1.56)
V-C	1110	11.9	132.1			1.86 (1.61, 2.16)
Ventilation						
C-C	10,000	15.1	1510	−172.3	−58	Reference
V-V	8890	12.5	1111.3			1.02 (0.96, 1.08)
V-C	1110	20.4	226.4			1.27 (1.13, 1.42)
Seizure						
C-C	10,000	0.08	8	2.3	4290	Reference
V-V	8890	0.08	7.1			1.05 (0.53, 2.08)
V-C	1110	0.29	3.2			2.41 (0.98, 5.94)
Composite serious morbidity: ventilation, seizure						
C-C			1518	−170.0	−59	
V-V			1118.4			
V-C			229.7			
Noncongenital anomaly death						
C-C	10,000	1.69	169	36.8	272	Reference
V-V	8890	2.05	182.2			1.84 (1.58, 2.13)
V-C	1110	2.12	23.5			1.00 (0.74, 1.36)
Asphyxia-related death						
C-C	10,000	0.07	7	8.2	1217	Reference
V-V	8890	0.13	11.6			2.79 (1.48, 5.25)
V-C	1110	0.33	3.7			4.04 (1.72, 9.51)
Composite serious morbidity or mortality: ventilation, seizure, death						
C-C			1687	−133.2	−75	
V-V			1300.6			
V-C			253.2			

Theoretical cohort of 10,000 twins undergoing cesarean delivery for both twins, compared with a theoretical cohort of 10,000 twins in which the first twin delivers vaginally and the second twin presenting part is unspecified. *CI,* Confidence interval.

* Prevalence and odds ratio data from Wen et al.[1] The cesarean delivery rate for the second twin was 11.1%.

This analytic approach provides the number of individuals necessary to treat a patient to prevent an adverse outcome.

The goal of this paper was to translate the epidemiologic data with regard to the outcome of the second twin by mode of delivery into the number needed to treat to prevent one adverse outcome and to compare these numbers with other indications for primary cesarean delivery.

Material and methods

Three publications based on the matched multiple birth file created by the Centers for Disease Control and Prevention were used in this analysis.[1-3] This file is a population-based retrospective cohort of all twin births from 1995 to 1997. Although maternal sociodemographic data, lifestyle factors, obstetric history, complications of pregnancy, and other complications were included in the analysis of these data to generate odds ratios for risk to the second twin described in the original studies, only the observed prevalence data were used in the current analysis.

The data set consisted of 128,219 liveborn second twins who were born greater than 24 weeks' gestation with a birth weight more than 499 g. It is of note that the reference group consisted of those pregnancies in which cesarean delivery occurred for both twins, with no specification of the indication (ie, combined elective, medically indicated, and intrapartum cesarean deliveries).

Wen et al[1,2] segregated twin gestations into term (36 weeks' gestation or longer) and preterm groups (less than 36 weeks' gestation). In this set the rate of cesarean delivery for both twins was 54.3% in the preterm group and 50.1% in the term group; 38.4% of all gestations