Length of the Second Stage of Labor and Risk of Preterm Delivery in a Subsequent Pregnancy

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Preterm birth refers to a delivery that occurs before 37 weeks gestation, with 70 to 80 percent of preterm births occurring spontaneously. The overall preterm delivery rate in the United States is 12%. The greatest risk factor for preterm birth is a prior preterm birth (PTB) and a prior term birth seems to lose its significance with a longer second stage. The duration of the second stage of labor from the first term pregnancy (index pregnancy) is 55 minutes (interquartile range 29-97). Among the 6,342 women (94.4%) who delivered preterm in the subsequent pregnancy, the median length of the second stage in the first delivery was 53 minutes (interquartile range 29-97). Among the 573 women (9.8%) who delivered preterm in the subsequent pregnancy, the median length of the second stage in the first delivery was 42 minutes (interquartile range 24-93; p < 0.0004).

Conclusions: Second stage labor length in the index pregnancy was shorter for women who delivered preterm in a subsequent pregnancy. These data do not support the concept that cervical injury from a longer second labor stage is associated with preterm delivery after a prior term delivery.

Methods

Cohort study of women having their first and second birth at the same institution using prospectively collected obstetric data from January 2005 to January 2015. The duration of the second stage of labor from the first term pregnancy (index case) was obtained from information recorded at delivery. Demographic and other clinical data were obtained. Logistic regression was used to evaluate the adjusted risk ratio for preterm delivery by duration of the second stage of labor adjusted for potential confounders.

Conclusion

In our cohort, the length of the second stage of labor in the first delivery was shorter for women who experienced PTB in a subsequent pregnancy. Our data do not support the concept that the injury from a prolonged second stage is a significant contributor to preterm birth risk after a prior term delivery. Strengths of our study include the use of large sample size from a single institution to evaluate a population where information is available for two subsequent deliveries. Limitations of our study include lack of detailed individual information regarding obstetric lacerations or cervical injury in women who experience a prolonged second stage or an operative vaginal delivery in their first term birth. Although no difference in the risk of PTB was noted by the length of second stage of labor in our study population, other aspects of the second stage such as lacerations or surgical trauma may indeed increase the risk of PTB for some women at an individual level. Future prospective studies could aid in further clarifying this important clinical question.

REFERENCES:

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