Gestational Age Tied to Subsequent Preterm Births

Preterm birth risk in second pregnancy inversely related to gestational age at birth in first preterm pregnancy.

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Contributing Writer

Quebec City — Women who’ve had a preterm birth are at increased risk for a subsequent preterm birth and associated neonatal morbidity and mortality, and this risk is inversely related to the gestational age at which their first spontaneous preterm birth occurred.

That finding emerged from a population-based cohort study of more than 25,000 women that was presented at the annual meeting of the Society of Obstetricians and Gynecologists of Canada.

Women with a previous preterm birth, especially if it’s earlier than 34 weeks, are at high risk and should be monitored carefully, said Erica Frecker, M.D., a resident in obstetrics and gynecology at Dalhousie University’s IWK Health Centre in Halifax, N.S., working under B. Anthony Armson, M.D.

The study offers useful information for obstetricians who give preconception counseling to women with previous preterm births, who are often worried about the outcome of their next pregnancy, said Dr. Frecker, the study’s lead author.

Using the Nova Scotia Atlie Perinatal Database, researchers identified 25,525 women who had their first and second deliveries in 1988-2000. All of the women had spontaneous births; stillbirths and major fetal anomalies in the first pregnancy were excluded.

The women were categorized into four groups based on their babies’ gestational ages at first delivery. The risks of preterm birth and serious neonatal morbidity or mortality in the subsequent pregnancy were calculated using multivariate analysis.

The incidence of preterm birth earlier than 28 weeks was 4.66%, earlier than 34 weeks was 1.25%, and 0.3%, respectively, in the first pregnancy, followed by an incidence of 3.66%, 0.94%, and 0.24%, respectively, in the second pregnancy. The relative risk of having a preterm birth in the second pregnancy was inversely related to the gestational age at birth in the first pregnancy, except in the youngest gestational age category. (See chart.)

The numbers were adjusted for multiple gestation and uterine anomaly by multivariate regression. The proportions of neonatal morbidity/mortality in the second pregnancy increased as the gestational age category decreased. The proportions increased from 1.27% for gestational ages greater than 37 weeks to 8.18% for gestational ages of less than 28 weeks. Serious neonatal morbidity cases included necrotizing enterocolitis, severe respiratory distress syndrome, bronchopulmonary dysplasia, sepsis, pneumonia, and meningitis.

Commenting on the study, David Young, M.D., past president of the Society of Obstetricians and Gynecologists of Canada, noted that the results from the provincial perinatal database may be applicable to the general population, as they represent every birth in Nova Scotia for 1988-2000. “Researchers or clinicians in the field, particularly of preterm birth, would not be surprised by these results, but it adds substantially to the information that already is available and what might have been our best guess,” said Dr. Young, now head of the department of obstetrics and gynecology at Dalhousie University’s IWK Health Centre in Halifax.

“Although ‘we don’t have a proven, effective method of intervention,’ Dr. Young said, the study may shed light on the controversy surrounding intramuscular progesterone, which was the subject of several studies, including a randomized, controlled trial (N. Engl. J. Med. 2003;348:2379-85). Since then, a more recent review has been published on the prevention of preterm delivery using the same medication (Obstet. Gynecol. 2005;105:1128-35). “It [progesterone] may be the closest thing that might be effective,” Dr. Young said.

The study results also provide evidence that women who have a prior preterm birth—particularly those who delivered earlier than 34 weeks—should be monitored more closely, noted Dr. Young. These patients may be considered for investigations such as cervical length surveillance through transvaginal ultrasound, for the treatment of prophylactic steroids for lung maturity, and for modification of activity.