Gestational Age Tied to Subsequent Preterm Births

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

BY KAREN RICHARDSON
Contributing Writer

QUEBEC CITY — Women who’ve had a prior 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 Gynaecologists 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 in Halifax, N.S., working under B. Anthony Armon, 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 Atlee 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 37 weeks, earlier than 34 weeks, and earlier than 28 weeks was 4.66%, 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 1.21% 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 Gynaecologists 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).

“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 to stop preterm labor and for modification of activity.

How Likely Is a Second Preterm Birth?

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<thead>
<tr>
<th>Gestational Age at First Birth</th>
<th>Relative Risk of Second Preterm Birth</th>
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<tbody>
<tr>
<td>≥37 weeks</td>
<td>1.00</td>
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<tr>
<td>34-36 weeks</td>
<td>4.47</td>
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Source: Dr. Frecker

Large Study Questions Possible Steroid/Orofacial Cleft Link

BY SHARON WORCESTER
Tallahassee Bureau

ST. PETE BEACH, FLA. — The use of oral steroids for asthma during pregnancy has long been discussed as a possible cause of orofacial clefts in newborns, but findings from a large cohort study suggest this is not the case.

In nearly 82,000 mother/infant pairs, not a single infant with an orofacial cleft was born to any of the more than 400 women who received at least one oral steroid prescription in the 90 days before pregnancy or during early pregnancy, Janet R. Hardy, Ph.D., reported at the annual meeting of the Teratology Society.

The findings could put an end to long-held beliefs—based on findings in laboratory animal models—in which exposure to high CO exposure (odds ratio 2.45).

Young mothers without low BMI but with high CO exposure were more likely than controls to have a baby with gastroschisis.

ST. PETE BEACH, FLA. — Young pregnant women who smoke cigarettes or marijuana who are malnourished have a significantly increased risk of having an infant with gastroschisis, a case-control study suggests.

Those who have both risk factors have an even greater risk of having an infant with this severe birth defect, Phung Kim Lam, Ph.D., reported at the annual meeting of the Teratology Society.

Dr. Lam studied 55 infants with gastroschisis and 94 age-matched controls. Maternal information was based on interviews and food-frequency questionnaires.

Malnourished women were more likely than controls to have a baby with gastroschisis (odds ratio 26.49), she said.

Young mothers with BMI over 25, low CO exposure and low vitamin A levels, were more likely than controls to have a baby with gastroschisis (odds ratio 16.81), as were those with low BMI and no CO exposure (OR 19.69).

The finding was much more marked in those with low BMI and high CO exposure, compared with controls (OR 26.49), she said.

The findings support those of an animal model in which exposure to high levels of carbon monoxide and low protein and zinc intake in pregnant mice led to this birth defect.

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