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Pregnant women with placental infection have doubled risk of recurrence

DALLAS – Nov. 30, 2006 – Pregnant women who develop an infection of the placenta or nearby membranes in their first pregnancy have twice the risk of getting it in their second pregnancy, researchers at UT Southwestern Medical Center have found.

The infection, called chorioamnionitis, occurs in 0.5 percent to 10 percent of births. It can cause bleeding and widespread infection in the mother and infect the fetus as well, possibly resulting in cerebral palsy. If the infection develops during gestation, the baby must be delivered immediately, sometimes prematurely, to protect its health. Mother and child can then be treated with antibiotics.

The longer the time between the amniotic sac (waters) breaking and birth, the higher the risk for the infection at the time of birth. The infection can also take root before the waters break.

The study, which involved reviewing the records of 28,410 women who gave birth at Parkland Memorial Hospital, indicates that there may be one or more intrinsic risk factors that predispose women to the infection, the researchers report. Those might be the genetic makeup of their immune response or stronger bacteria in their genital tracts, they said.

"We do believe that there probably is a genetic component that predisposes women to intrauterine infection," said Dr. Vanessa Laibl, assistant professor of obstetrics and gynecology at UT Southwestern and lead author of the study. "We also believe that certain women could be colonized with bacteria that are more virulent and more likely to cause infection."

The report, appearing in the December issue of *Obstetrics and Gynecology*, is the largest clinical study to address the topic, Dr. Laibl said.

The researchers focused on women who had vaginal deliveries of a single baby in their first pregnancy. Of those, 10 percent developed chorioamnionitis.

The women who developed the infection in their first pregnancies tended to have longer labors, premature water breaking, labor induction, use of internal monitors and longer second

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stages of labor, among other factors, compared with noninfected women. All of these differences were statistically significant, the researchers said. These factors are known to increase the risk of chorioamnionitis at the time of birth because they allow more opportunity for bacteria to migrate from the genital tract to the uterus, Dr. Laibl said.

In the second pregnancies, which were included whether they were vaginal or by Caesarean section, 2,891 deliveries were analyzed. Five percent of women who had had chorioamnionitis in their first pregnancy developed it again, while 2 percent of women who did not have it in their first pregnancy developed it in their second. The difference was statistically significant, even after accounting for those known risk factors for chorioamnionitis, such as length of labor, Dr. Laibl said.

"Circumstances do play an important role," Dr. Laibl said. "But once you factor that out, the women who got the infection the first time were still more prone to getting it in their second pregnancy.

"The patient's doctor should be vigilant about infection regardless of her previous pregnancy outcome. That being said, there is no additional treatment to be done for the patient just because she had chorioamnionitis before."

Research on a cytokine called tumor necrosis factor-alpha, or TNF-alpha, points to a genetic link. Women with one variant of a gene for this cytokine have a threefold risk for chorioamnionitis. Scientists have also found links between other immune-related genes and chorioamnionitis.

UT Southwestern researchers involved in the study were Dr. Jeanne Sheffield, assistant professor of obstetrics and gynecology; Drs. Scott Roberts and Donald McIntire, both associate professors of obstetrics and gynecology; and Dr. George Wendel Jr., professor of obstetrics and gynecology.

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pioneering biomedical research with exceptional clinical care and education. Its more than 1,400 full-time faculty members – including four active Nobel Prize winners, more than any other medical school in the world – are responsible for groundbreaking medical advances and are committed to translating science-driven research quickly to new clinical treatments. UT Southwestern physicians provide medical care in 40 specialties to nearly 89,000 hospitalized patients and oversee 2.1 million outpatient visits a year.

Physicians care for patients in the Dallas-based UT Southwestern Medical Center; in Parkland Health & Hospital System, which is staffed primarily by UT Southwestern physicians; and in its affiliated hospitals, Children's Medical Center Dallas and the VA North Texas Health Care System. UT Southwestern programs are offered in Waco, Wichita Falls, Richardson, Plano/Frisco and Fort Worth. Three degree-granting institutions – UT Southwestern Medical School, UT Southwestern Graduate School of Biomedical Sciences and UT Southwestern Allied Health Sciences School – train 4,000 students, residents and fellows each year. UT Southwestern researchers undertake more than 2,500 research projects annually, totaling more than \$340 million.

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