Rapid GBS Assay Is Equal to Standard Cultures

The polymerase chain reaction–based diagnostic costs more, but cuts turnaround time from days to hours.

BY ALICIA AULT
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NEW ORLEANS — A rapid polymerase chain reaction–based diagnostic to detect group B streptococcus infection during pregnancy is as specific and sensitive as are standard cultures and delivers results in a matter of a few hours, according to a small comparative study.

Dr. Lori Goranson, a resident at Dartmouth-Hitchcock Medical Center in Lebanon, N.H., presented data from 99 women who came to the center's outpatient clinic.

The Centers for Disease Control and Prevention has issued a call for a rapid assay for group B strep that is available 24 hours a day, 7 days a week, and that can be easily performed without a sophisticated lab or highly trained personnel, Dr. Goranson said at the annual meeting of the American College of Obstetricians and Gynecologists.

The agency recommends that all women be tested for GBS by 35-37 weeks' gestational age, she said. Laboring women who present with unknown GBS status, however, are empirically given antibiotics as a precaution. As a result, thousands of women are likely being treated unnecessarily, Dr. Goranson said.

There are a little more than 4 million live births a year in the United States, she said.

Given that 10%-30% of women are colonized with GBS, that 13% of women present preterm, and that 8% are without prenatal care, as many as 600,000 may inappropriately receive antibiotics, according to Dr. Goranson.

She and her colleagues at Dartmouth aimed to determine whether the Xpert GBS test could fulfill the CDC's parameters. The Xpert was approved by the Food and Drug Administration in 2006. Two vaginal/rectal swabs were taken from 99 women; one swab was tested using standard culture and the other with the Xpert device.

The swab is placed into a cartridge with reagents. It takes 2 minutes from sampling to the start of analysis, said Dr. Goranson. Results generally are available within 75 minutes, although the average in the Dartmouth study was 83 minutes. That compares with an average of 2.3 days to receive a culture result, she said.

The average maternal age was 29.7 years and the average gestational age at collection was 36 weeks.

Twenty-five of 99 specimens cultured positive, for a prevalence rate of 25%, which was consistent with the literature, noted Dr. Goranson.

Seventy-four of 99 (75%) cultured negative. With the PCR-based Xpert system, 27 of 99 specimens were positive, and 72 of 99 were negative. The overall agreement rate between the two tests was 96%. There were discordant results. Three of the four PCR-positive results cultured negative. One PCR-negative swab cultured positive.

The Xpert test had 96% sensitivity and 96% specificity, with a negative predictive value of 99%, and a positive predictive value of 88%.

The test is highly sensitive and specific, easy to use, and produces rapid results, concluded Dr. Goranson. Though they are not yet using the Xpert system clinically at Dartmouth, it could eventually be used to support standard culture or as a substitute for women presenting preterm with an unknown GBS status, she said.

It is more expensive than standard culture—probably about 1.5 times as much, said Dr. Goranson. The device costs about $65,000 and cartridges cost about $45 each, she said. But the Xpert system can also be used to conduct rapid enterovirus, methicillin-resistant *Streptococcus aureus*, and other diagnostics, she said.

Dr. Goranson stated that she had no financial conflicts of interest to report. ■

CDC Reports on Postpartum Depression Prevalence, Risks

BY MARY ANN MOON
Contributing Writer

Postpartum depression affected 12%-20% of mothers surveyed in the most recent report from the Centers for Disease Control and Prevention's Pregnancy Risk Assessment Monitoring System (PRAMS).

These proportions are somewhat higher than the 10%-15% of mothers generally thought to be affected by postpartum depression within 1 year of giving birth, Kate Brett, Ph.D., and associates in the Office of Analysis and Epidemiology, National Center for Health Statistics.

Depression's associations with low-birth-weight infants, tobacco use during pregnancy, and traumatic or financial stress have not been identified before.

PRAMS is an ongoing population-based surveillance project that collects data on mothers' attitudes and experiences before, during, and after delivery of a live infant. It targets subjects who are representative of women who have recently delivered in 17 participating states.

In an analysis of the data collected in 2004-2005—the most recent period for which data were available—Dr. Brett and her colleagues found that four characteristics were significantly associated with postpartum depression in all 17 states: young maternal age, low levels of maternal education, single marital status, and Medicaid coverage for delivery.

Five potential risk factors also were associated with postpartum depression: maternal tobacco use during the last trimester, physical abuse before or during the pregnancy, partner-related stress during the pregnancy, traumatic stress during the pregnancy, and financial stress during the pregnancy.

In addition, delivering a low-birthweight infant was significantly associated with postpartum depression in 14 states.

In the current survey, 11.8% of new mothers in Maine and 11.8% in Vermont reported postpartum depression, compared with about 20.4% of mothers in New Mexico. Oregon and Minneapolis were also clustered in the lower ranges, with 12.2%, and 12.7%, respectively, of new mothers reporting symptoms, whereas in South Carolina and North Carolina, 19.5% and 19.0%, respectively, reported symptoms.

The associations with young maternal age and partner-related stress or physical abuse have been reported in previous research. In contrast, the associations with low-birth-weight infants, tobacco use during pregnancy, and traumatic or financial stress have not been identified before, the investigators said (MMWR 2008;57:361-6).

These findings can be used to tailor screening and interventions so that they target mothers at highest risk for postpartum depression. For example, "adolescent mothers or women who received Medicaid for their delivery are examples of subsets of the population" who can be easily identified at delivery and referred for treatment, the CDC said. ■

No Ill Effects From Low-Carb Sports Drinks During Labor

BY SUSAN BIRK
Contributing Writer

CHICAGO — Laboring women can rely on sports drinks for hydration and sustenance without increasing their risk for cesarean section or instrumental vaginal delivery and without affecting the metabolic profiles of their newborns, according to a study of 198 women.

Sports drink consumption alleviated maternal ketosis without affecting neonatal Apgar score, glycemia, or umbilical cord gas, Dr. Marie-Eve Perron reported in a poster presentation at the annual meeting of the Society for Obstetric Anesthesia and Perinatology.

The findings contradict previous research (BJOG 2002;109:178-81), which indicated a threefold increase in C-sections among women who drank isotonic fluids during labor.

"The dissimilar results may be explained by the difference in the population studied and by the use of a lower carbohydrate concentration sports drink [in this study]," Dr. Perron said.

The isotonic drink in the earlier study contained a 12.6% carbohydrate concentration, more than twice that in the present study. Most of the patients in the previous research had high-risk pregnancies, and some had also received opioids during the course of labor.

Dr. Perron and her associates at Laval University, Quebec City, reported on 198 consecutive women who requested epidural analgesia at cervical dilation of 5 cm or less and in whom labor had begun spontaneously.

All patients had a single fetus in cephalic presentation. Women with known obstetric or medical conditions such as diabetes or previous C-section were not included.

There were no significant differences in the incidence of C-sections or instrumental vaginal deliveries among the intervention patients, who were encouraged to drink 200 mL/hr of a clear isotonic liquid containing a 6% carbohydrate concentration, and the control patients, who were limited to 30 mL/hr of water (standard practice at the hospital). The two groups were similar demographically.

Patients' maternal ketone bodies and glycemia were measured immediately after randomization into the intervention or control group and at the end of the first stage of labor using the Precision Xtra system. Apgar scores, neonatal glycemias, and umbilical cord gases were measured as well.

C-section rates for the intervention and control groups were 12.2% and 15%, respectively. Instrumental vaginal delivery rates for the intervention and control groups were 14.3% and 13%, respectively.

Maternal ketone bodies (beta-oxybutyrate) were 0.23 and 0.22 in the intervention and control groups at baseline, but nearly four times greater in the control group (0.19) than in the intervention group (0.5) at the end of the first stage of labor.

Apgar scores were 8.9 and 8.7 in the intervention and control groups at 1 minute, and 9.9 and 9.8 at 5 minutes. Neonatal arterial pH, venous pH, and glucose in the two groups were almost identical.

"The possible risk of pulmonary aspiration led many hospitals to restrict oral intake during labor," said Dr. Perron. "However, the metabolic demand of labor is high. As clear fluids are rapidly evacuated from the stomach, they could represent a suitable source of energy." ■