Jury Still Out on West Nile as Possible Teratogen

BY DOUG BRUNK
San Diego Bureau

TUCSON, ARIZ. — Recent published data suggest a risk of birth defects among live-born infants of mothers infected with West Nile virus, but much more work is needed to confirm the association, Dr. Dawn M. Wesson said at the annual meeting of the Teratology Society.

"There appears to be a slightly higher frequency of major birth defects in the West Nile–infected group as compared to the general population, but … even though this is suggestive it's certainly not proof," cautioned Dr. Wesson, of the department of tropical medicine at Tulane University School of Public Health and Tropical Medicine in New Orleans.

She based her remarks on a clinical study of 77 women infected with West Nile virus (WNV) during pregnancy in 2003 and 2004 who were followed in 16 states. Of the 77 women, 71 delivered 72 live infants. Four women had miscarriages and two had abortions (Pediatrics 2006;117:e537-45).

Of the 72 live infants, 67 were born at term, 4 were born preterm, and the gestational age of 1 infant was unknown.

The researchers, led by Daniel R. O'Leary, D.V.M., of the division of vector-borne infectious diseases at the Centers for Disease Control and Prevention, found that nearly 11% of infants born to mothers infected with West Nile virus during pregnancy had major birth defects, compared with almost 6% of infants born to uninfected mothers in the general population.

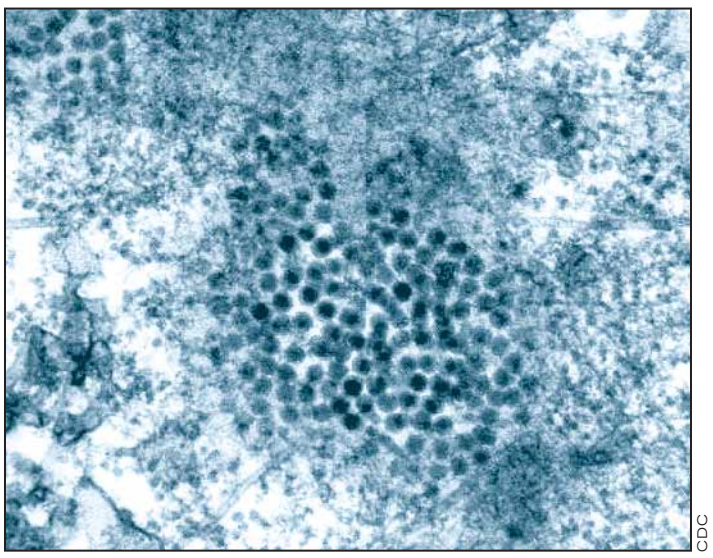
The researchers cautioned that of the 72 infants followed to date, nearly all appeared to be normal, and none had conclusive laboratory evidence of congenital WNV infection.

Seven infants had major malformations, but "only three had defects that could have been caused by maternal WNV infection based on the timing of the infections and the sensitive developmental period for the specific malformations, and none had any conclusive evidence of WNV etiology," Dr. O'Leary and his associates wrote.

At the meeting, Dr. Wesson said one of the key reasons researchers are unable to determine with certainty whether WNV is a teratogen is that the sensitivity and specificity of IgM testing of cord blood to detect WNV is really unknown.

"Also, congenital WNV infection among newborns with IgM-negative serology cannot be ruled out," she said. "We need more studies."

In a partnership between the Centers for Disease Control and Prevention and Tulane University, researchers are studying the effect of WNV on pregnancy outcomes in two groups of women: retrospectively in those infected while pregnant during 2003 and 2004, and prospectively in those infected while pregnant between 2005 and 2008.



CDC

The capacity of IgM testing of cord blood to detect West Nile virus (shown in electron micrograph) is still unknown.

In addition to performing all recommended tests during and after pregnancy, the researchers plan to follow case and control infants with ophthalmologic and developmental exams as well as a CT scan if indicated, and a dysmorphology exam in infected infants.

The final part of the effort is to perform morphologic, endocrine, and molecular assessments of the villous placenta, trophoblast, conceptus membranes, and maternal decidua.

"We don't know the answer to the question [about WNV's possible role as a teratogen], but I think the pieces that we have in place and the collaborators we have in line should help us to answer those questions in the future," Dr. Wesson concluded. ■

Recombinant Factor VIIa Rapidly Stops Postpartum Hemorrhages

BY MITCHEL L. ZOLER
Philadelphia Bureau

LISBON — Recombinant factor VIIa is potentially lifesaving for women undergoing massive hemorrhage after delivery, Dr. Claire McLintock said at the annual meeting of the International Society of Obstetric Medicine.

Although little information is available on the benefits and risks of treatment with recombinant factor VIIa in postpartum women, it's an option when all other treatments have failed to stop bleeding, said Dr. McLintock, an obstetric physician and hematologist at National Women's Health at Auckland City Hospital, New Zealand.

"I'm not sure that a randomized trial will ever be done" to test the drug's safety and efficacy, so for the time being, registry reviews provide the only data, she said.

A registry of factor VIIa recipients in Australia and New Zealand with a total of 289 patients includes eight cases of obstetric use. Each of the eight women received a single dose. In two women, the bleeding stopped immediately after treatment, and in the other six, bleeding slowed. Treatment also led to reduced transfusions with red cells, platelets, cryoprecipitate, and fresh frozen plasma.

The registry is sponsored by Novo Nordisk, which markets recombinant factor VIIa (NovoSeven). Novo Nordisk also provided travel funds for Dr. McLintock.

Another registry for obstetric patients receiving recombinant factor VIIa is kept by 475 hospitals in several northern European countries. This registry recently included 77 women who received the drug for bleeding, and bleeding improved in 82%. Three of the women (4%) had a thromboembolism after treatment.

"There is no doubt that treatment with factor VIIa has a thromboembolism risk that may be as high as 2%-4%, but this risk may be outweighed by benefits," said Dr. McLintock. "In addition, the risks from massive blood transfusion cannot be underestimated."

If the patient doesn't respond to the first dose within 20 minutes, consider giving a second dose.

DR. McLINTOCK

Cost is an issue. In the United States, the average wholesale cost for the drug is $1.48/mcg, according to the 2005 Red Book. The effective dose in hemorrhage has not been established, but 100 mcg/kg is recommended when factor VIIa is used for hemophilia patients. Dr. McLintock recommended a dose of 100 mcg/kg that is rounded off to the nearest vial size. For a 60-kg woman, the dose would be 6,000 mcg, which would cost almost $9,000. Factor VIIa works quickly; if the patient doesn't respond to the first dose within 20 minutes, consider giving a second dose, she said.

Once a patient has received a massive transfusion with red cells, platelets, cryoprecipitate, and fresh frozen plasma, dilution of clotting factors worsens the coagulopathy and makes it harder to stop bleeding. Such cases are "hard to rescue without a dramatic treatment" such as factor VIIa, Dr. McLintock said. ■

Neonatal Respiratory Morbidity Linked to Near-Term Cesareans

BY JEFF EVANS
Senior Writer

PRAGUE — Elective cesarean sections that are carried out near the end of term may be more likely to result in neonatal respiratory morbidity than planned vaginal births, Dr. Anne Kirkeby Hansen reported at the 20th European Congress of Perinatal Medicine.

Using data from the prospective Århus Birth Cohort, Dr. Hansen and her colleagues identified 2,438 singleton neonates born in 1998-2005 by elective cesarean section at a gestational age of greater than 36 weeks.

Overall, 403 (17%) of these infants had respiratory morbidity classified as respiratory distress syndrome, transient tachypnea of the newborn, or persistent pulmonary hypertension of the newborn, said Dr. Hansen of the Perinatal Epidemiology Research Unit at Århus (Denmark) University Hospital.

Respiratory morbidity occurred significantly more often among infants who were delivered by elective C-section at 37 weeks (4.5%) or 38 weeks (3.4%) than among those who were born via an intended vaginal delivery (1.4% and 1%, respectively). The relative risk of respiratory morbidity was 3.2 and 3.6 times higher if an elective C-section was performed at those gestational ages instead of an intended vaginal delivery, which included deliveries by vacuum, forceps, and emergency C-section.

Elective C-section at 37 weeks was associated with a significant, nearly sixfold higher relative risk of respiratory morbidity than among infants born by intended vaginal delivery at a gestational age of 40 weeks, 0.8% of whom had respiratory morbidity. The relative risk of respiratory morbidity for those born by C-section at 38 weeks was 4.4 times higher than that of neonates who were intended to be born vaginally.

Infants born by elective C-section at 37 weeks were 3.6 times more likely and those born at 38 weeks were 2.7 times more likely to have respiratory morbidity than infants born by elective C-section at 39 weeks.

The incidence of respiratory morbidity did not differ significantly between neonates in either category at a gestational age of 39 or 40 weeks.

"Both way of delivery and timing of elective cesarean section influence the risk of respiratory morbidity," Dr. Hansen said.

"These results indicate that elective cesarean section is associated with an increased risk of respiratory morbidity regardless of gestational age. Timing of elective C-section is crucial as the risk of respiratory morbidity increases with decreasing gestational age," she said. ■