Home Visits Help Pediatric Outcomes for Hispanics

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San Antonio — An intensive home visiting program targeting pregnant women and parents of newborns reduced premature births and significantly improved health care and pediatric health in Hispanic families, according to preliminary results of a study presented by Kimberly Dumont, Ph.D., at the annual meeting of the Society for Prevention Research.

The Healthy Families New York (HFNY) program, which is modeled after the national Healthy Families America initiative, is primarily aimed at preventing child neglect and abuse, said Dr. Dumont, senior research associate with the New York State Office of Children & Family Services in Rochester.

Home visits are conducted by trained paraprofessionals until children reach age 1, with a focus on enhancing parent-child interactions and improving child health and development and parental self-sufficiency.

The study, a collaboration between the Bureau of Evaluation and Research at the Office of Children & Family Services and the Center of Human Services Research of the State University of New York at Albany, included 1,173 Hispanic, African American, and white women. A total of 42% of the sample were included because screening identified them as being at risk for depression, and 9% were included because they had a history of substantiated child abuse or neglect. The remaining 49% were randomly assigned before 31 weeks’ gestation.

The subjects were randomized to the HFNY intervention or to a control group that was given information and referrals to other services in the community. Baseline interviews were conducted shortly after randomization, with follow-up interviews at birth and annually up to 3 years post partum in this preliminary report. During these interviews, participants were asked about health insurance, primary care providers, birth outcomes, and child behavior.

Preliminary results up to 2 years post partum show significantly fewer premature births, fewer pediatric health care, and less pediatric somatic complaints and behavior problems in Hispanic families receiving the HFNY intervention compared with Hispanic controls who were offered information and referral only.

The intervention did not improve these outcomes in white and African American families. Dr. Dumont speculated that this may demonstrate that the Hispanic population was most in need of this type of intervention because it may reduce the health care disparities between them and non-Hispanic families.

“Hispanic women in the control group were initially well connected to a primary care provider, but this connection weakened over the course of the study,” she said in an interview. By the end of the second year of the study, Hispanic controls were less likely than non-Hispanic women to have a primary care provider (relative risk 0.92). In contrast, connection to health care was relatively strong for the non-Hispanic controls throughout the study, resulting in a disparity between the Hispanic and non-Hispanic controls. The HFNY intervention prevented this disparity from emerging, with Hispanic women retaining their connections to a primary care provider (RR 1.06). “HFNY demonstrates particular success in keeping Latina women connected to health care, which may promote positive child outcomes,” she said.

There was a reduction in premature births in treated Hispanic women, compared with Hispanic controls in the subgroup of 116 Hispanic women who were randomized before 31 weeks’ gestation. Those receiving the HFNY intervention had a 7% rate of premature births, compared with 14% in controls. “Although marginally significant, probably due to the limited sample size, this difference was clinically meaningful,” said Dr. Dumont in an interview.

In addition, using the Child Behavior Checklist, the study found a reduced rate of pediatric somatic and behavior problems in the Hispanic intervention group, compared with Hispanic controls.

For depression problems, the average number of symptoms for Hispanic target children was 2.1, compared with 3.3 in controls. For pervasive developmental problems, the average number of symptoms for target children was 2.3, compared with 3.1 in controls. For attention deficit symptoms, the average number of symptoms for Hispanic target children was 4.4 vs. 5.1 in controls. And for somatic complaints, the average number of symptoms for target children was 8.8 vs. 1.3 in controls.

The HFNY intervention also resulted in improved pediatric health care in the entire study population.

Drugs, Pregnancy, and Lactation

First-Generation Anticonvulsants

Although it has been known for years that some first-generation antiepileptic drugs (AEDs) cause birth defects, there is little information about the safety of these drugs in pregnancy or lactation. However, new data from the North American AED Pregnancy Registry and five other pregnancy registries have shown a significant risk of birth defects associated with oral AEDs after first-trimester exposure to lamotrigine (Lamictal) monotherapy (Birth Defects Res. A Clin. Mol. Teratol. 2006;76:313-328). The prevalence of oral AEDs in the North American registry was 8.9/1,000, even though all of the mothers had been supplemented with folic acid before conception. This was significantly higher than the prevalence of 0.37/1,000 in a comparison group.

The human pregnancy experience is too limited to assess the embryo/fetal risk for the second-generation agents: felbamate (Felbatol), gabapentin (Neurontin), pregabalin (Lyrica), levetiracetam (Keppra), tiagabine (Gabitril), and topiramate (Topamax). Although the data also are limited for zonisamide (Zonegran), the drug is teratogenic in three animal species and embryo lethal in a four and therefore is best avoided in the first trimester. Oxcarbazepine (Trileptal), a drug that is used in treatment-resistant epilepsy, has been associated with minor facial defects, but the data are too limited to assess the risk in humans.

To summarize, women with epilepsy should not be denied treatment with the most effective agents because of pregnancy or nursing. They should be treated with the lowest dose and the fewest drugs possible to control their seizures. Periodic serum levels are needed throughout pregnancy to ensure that therapeutic levels are maintained. They should take folic acid (4-5 mg/day), and vitamin K should be given to the newborn.

It is also important to counsel that seizures are a risk to both the mother and the embryo/fetus. As is the drug therapy. AEDs that appear to have the lowest risk for major birth defects are the benzodiazepines, the succinimides, and the second-generation agents. However, the human pregnancy data are very limited for many of these agents.

Carbamazepine, phenytoin, primidone, and phenobarbital affect folate metabolism or absorption, and this may increase the risk of birth defects, including NTDs. Women taking these agents should take folic acid 4-5 mg/day, preferably starting before conception. Moreover, anticonvulsants, particularly the hydantoins and barbiturates, are related to neural-tube defects. The human pregnancy experience is too limited to assess the embryo/fetal risk for the second-generation agents: felbamate (Felbatol), gabapentin (Neurontin), pregabalin (Lyrica), levetiracetam (Keppra), tiagabine (Gabitril), and topiramate (Topamax). Although the data also are limited for zonisamide (Zonegran), the drug is teratogenic in three animal species and embryo lethal in a four and therefore is best avoided in the first trimester. Oxcarbazepine (Trileptal), a drug that is used in treatment-resistant epilepsy, has been associated with minor facial defects, but the data are too limited to assess the risk in humans.

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Carbamazepine, phenytoin, primidone, and phenobarbital are considered compatible with breast-feeding, and gabapentin, levetiracetam, oxcarbazepine, and tiagabine are probably compatible. Two AEDs (primidone and phenobarbital) are known to cause toxicity in the nursing infant and should not be given during breast-feeding. There are no data for the remaining AEDs, but they have the potential to cause toxicity and, if used during breast-feeding, the infants should be closely monitored.

Mr. Bisso is a pharmacist clinical specialist, Women’s Pavilion, Mission Hospital, Long Beach, Calif.; clinical professor of pharmacy, University of California, San Francisco; and adjunct professor of pharmacy, University of Southern California. He is also coauthor of the reference book “Drugs in Pregnancy and Lactation.”