

# Vertical Hepatitis C Transmission Increased by HIV

BY ROBERT FINN  
San Francisco Bureau

Two recently published studies demonstrate that the risk of transmission of hepatitis C from mother to infant is increased by concomitant HIV infection, but unlike HIV, the risk of vertical transmission of hepatitis C is not reduced by elective cesarean section.

Additionally, the larger of the two studies turned up the surprising result that girl babies are at twice the risk of vertical transmission as are boys (J. Infect. Dis. 2005;192:1872-9).

That study, by the European Paediatric Hepatitis C Virus Network, involved 1,479 pregnant women with confirmed hepatitis C infections from 33 sites across Europe. They and their babies were followed prospectively over at least 24 months.

Infants were counted as being infected only if they tested positive (by an RNA polymerase chain reaction test and/or by the presence of anti-hepatitis C antibodies) after the age of 18 months. This is the age by which passively acquired maternal antibodies have almost always disappeared.

The overall hepatitis C vertical transmission rate was 6.2%. Among mothers

who were coinfecting with HIV, the transmission rate was 8.7%, significantly higher than the 5.5% rate seen among mothers who were infected only with hepatitis C.

After adjusting for maternal HIV infection status, mode of delivery, prematurity, and infant feeding type, the study showed that female infants had 2.07 times the risk of vertical transmission as males, a statistically significant increase.

In this study, a number of factors showed no significant association with vertical transmission.

Among them were whether the mothers had a history of intravenous drug use, whether they were using such drugs during pregnancy, the mode of delivery (vaginal vs. elective cesarean section vs. emergency cesarean section), and whether the infant was taking formula or was breast-fed.

The second study by Eric E. Mast, M.D., of the Centers for Disease Control and Prevention, Atlanta, and his colleagues analyzed 242 women who were confirmed as positive for hepatitis C during pregnancy and their 244 live-born infants (J. Infect. Dis. 2005;192:1880-9).

The overall vertical transmission rate in this study was 3.7%. Women who were

coinfecting with HIV were 6.5 times more likely to transmit hepatitis C than those who were not coinfecting.

Among the HIV-negative women, vertical hepatitis C transmission was significantly associated with several factors, including membrane rupture more than 6 hours before delivery and the use of internal fetal monitoring devices.

The investigators concluded that avoiding internal fetal monitoring and/or performing a cesarean section before or soon after membrane rupture could decrease the risk of vertical hepatitis C transmission.

Some infants who turned out ultimately to be uninfected with hepatitis C nevertheless tested positive for anti-hepatitis C antibodies as late as 15 months following birth, a result of passively acquired maternal antibodies.

The investigators recommended that infants be tested after the age of 18 months to avoid false-positive results.

In this study, vertical transmission occurred in six girls, compared with three boys, but the small sample size prevented this difference from reaching statistical significance. ■

## Periodontal Disease, Preterm Birth Link Strongest in Black Women

CHARLESTON, S.C. — The association between maternal periodontal disease and increased risk for preterm birth is strongest among black women with moderate or severe periodontal disease, Kim A. Boggess, M.D., reported at the annual meeting of the Infectious Disease Society for Obstetrics and Gynecology.

In a longitudinal observational study of 958 women, 30% had no periodontal disease at enrollment, 60% had mild periodontal disease, and 14% had moderate/severe periodontal disease. Of those with moderate/severe disease, 79% were black, suggesting that the rate of periodontal disease in the pregnant population mirrors that of the nonpregnant population, said Dr. Boggess of the University of North Carolina at Chapel Hill.

The literature shows that, compared with white women, black women have a higher rate of periodontal disease, she noted.

Black women also have a higher rate of preterm birth, and this was true in the current study, as well. Preterm birth occurred in 23% of the 471 black women in the study, compared with 6% of the 487 white women.

Furthermore, the study supports previous research that suggests periodontal disease is associated with preterm delivery. Delivery before 37 weeks' gestation oc-

curred in 29% of those with moderate/severe disease, compared with 19% of those with mild disease, and 11% of those with periodontal health, Dr. Boggess said.

A multivariable logistic regression model that adjusted for maternal age, parity, marital status, insurance use, smoking, and prior preterm birth showed that, taken together, the risk ratios for preterm birth before 37 weeks' and 35 weeks' gestation were highest for those who were black and had moderate or severe periodontal disease. (See box.)

The rate of preterm birth in this population was much higher than would have been expected if race and disease were acting independently. "It looks like race and periodontal disease are acting together in a multiplicative way," she said.

Possible mechanisms for the differences between black and white women in this study include access to care issues and differences between black and white women in oral microbiology, maternal host response to oral microbes, and stress levels (which have been identified as a risk factor for periodontal disease), Dr. Boggess said, noting that further study is warranted.

Teasing out the mechanisms for the findings in this study could help in the development—and appropriate targeting—of intervention strategies, she said.

—Sharon Worcester

## Ob.Gyn. News®

### presents a continuing medical education supplement

#### Women with Epilepsy: Hormones, Contraception, and Treatment Options

##### Faculty Chair:

##### Cynthia L. Harden, MD

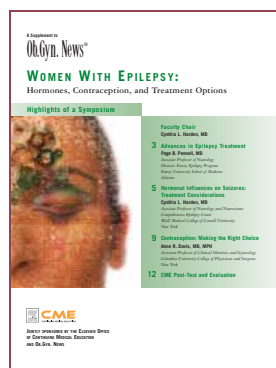
Associate Professor of Neurology and Neuroscience Comprehensive Epilepsy Center Weill Medical College of Cornell University New York

##### Anne Davis, MD, MPH

Associate Professor of Clinical Obstetrics and Gynecology Columbia University College of Physicians & Surgeons New York

##### Page B. Pennell, MD

Associate Professor of Neurology Director, Emory Epilepsy Program Emory University School of Medicine Atlanta



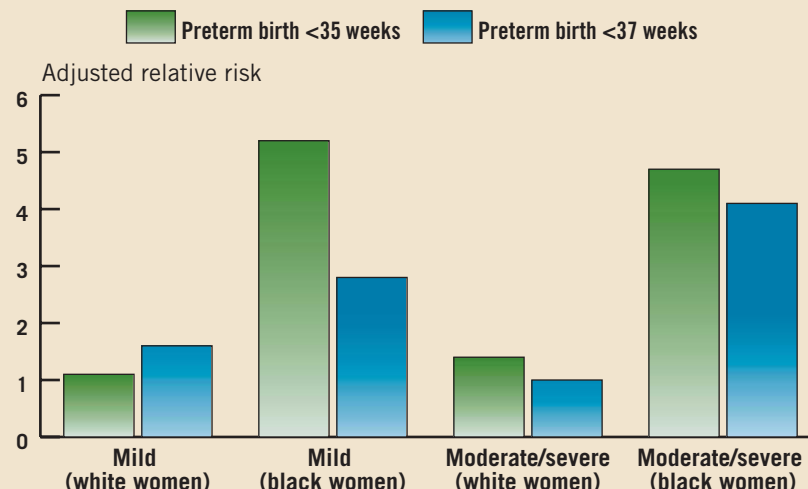
This supplement is available on [www.obgynnews.com](http://www.obgynnews.com).



Jointly sponsored by the Elsevier Office of Continuing Medical Education and OB.GYN. NEWS and supported by an unrestricted educational grant from



### Relative Risk of Preterm Birth in Mothers With Periodontal Disease



Note: Based on a longitudinal observational study of 471 black women and 487 white women. Source: Dr. Boggess