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Press Briefing: Sunday, May 23, 1:00, p.m., ET

The Need for Prevention: Pregnancy and the Risk of Acquiring and Transmitting HIV

Pregnancy doubles HIV risk in men, study finds

While a number of studies have shown that during pregnancy women are at increased risk of acquiring HIV from an infected partner, a new study has found pregnancy is a time when men also are at greater risk— double the risk, in fact.. The study, which involved 3,321 couples in which one partner was HIV-infected and the other not, is the first to show that a man in a relationship with an HIV-positive woman has a greater chance of becoming infected while she is pregnant than when she is not. Even after accounting for behavioral and other factors that usually contribute to HIV risk, the increased risk associated with pregnancy remained. Biological changes that occur during pregnancy may make women more infectious than they would be otherwise, explains Nelly Mugo, M.D., M.P.H., of the University of Nairobi & Kenyatta National Hospital in Nairobi and the University of Washington in Seattle, who presented results of the study on behalf of the Partners in Prevention HSV/HIV Transmission Study team. The study was conducted in Botswana, Kenya, Rwanda, South Africa, Tanzania, Uganda and Zambia.

The researchers followed for up to two years 1,085 couples in which the male was infected and 2,236 couples in which the female was infected to understand the different circumstances and determinants that may contribute to HIV risk. During this time, 823 pregnancies took place, which allowed the researchers to look more closely at the particular risk factors for HIV that occur during pregnancy than when not. Of the 823 pregnancies, 320 were among couples in which the male had HIV and 503 pregnancies among couples in which the female had HIV. In total, 61 women and 58 men became infected with HIV. Of the 61 women, 17 (27.9 percent) acquired HIV during pregnancy, and 12 (20.7 percent) of the 57 men became infected when their partner was pregnant. In their analysis, they found that pregnancy was associated with increased risk of both female-to-male and male-to-female HIV transmission. For women with an HIV- infected partner, the study found that factors other than pregnancy also likely contributed to this increased risk, such as sexual behavior. In men, however, the link between pregnancy and HIV risk was much clearer, even after taking into considering whether or not they had engaged in unprotected sex or were circumcised. Measures of viral load and CD4 counts of the infected partner also had no bearing. Increased female-to-male transmission of HIV during pregnancy may be due to physiological and immunological changes that occur with pregnancy, the authors conclude, but more research will be needed to confirm this hypothesis.

Presentation: Sunday, May 23, 10:45 a.m., Ballroom

Session 2 – Oral Abstracts: Pregnancy and HIV Risk in Microbicide Trials (9:30a.m.-11:15a.m.)

(Abstract #8)

Pregnancy is Associated with an Increased Risk for HIV Transmission among African HIV-1 Serodiscordant Couples

(see following page for full abstract)

Abstract # 8

Pregnancy is Associated with an Increased Risk for HIV Transmission among African HIV-1 Serodiscordant Couples

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Background: Physiologic, immunologic and behavioral changes of pregnancy may alter HIV-1 susceptibility and infectiousness. Some epidemiologic studies have found pregnancy increased women's HIV-1 acquisition risk, and HIV-1 shedding in genital secretions is increased in HIV-1 infected pregnant women, suggesting increased risk to male partners.

Methods: Analysis of a prospective study of African HIV-1 serodiscordant couples was done to evaluate the effect of pregnancy on risk of male-to-female and female-to-male HIV-1 transmission, after adjusting for sexual behavior and other potentially confounding factors. Participants were followed up to 24 months.

Results: 3321 HIV-1 serodiscordant couples from 7 African countries were enrolled, 1085 (32.7%) with HIV-1 susceptible female partners and 2236 (67.3%) with HIV-1 susceptible male partners. There were 823 pregnancies (320 in HIV-1 susceptible women, 503 in HIV-1 infected women). 64 women acquired HIV-1 (incidence 3.8 per 100 person-years), of which 17 (26.6%) occurred during pregnancy, and 57 men acquired HIV-1 from their female partners (incidence 1.7 per 100 person-years), of which 12 (21.1%) occurred during their partners' pregnancy. Pregnancy was associated with increased male-to-female HIV-1 transmission risk (hazard ratio [HR] 2.1, 95% confidence interval [CI] 1.2-3.7, p=0.009). The risk was attenuated and no longer statistically significant (adjusted HR 1.53, 95% CI 0.84-2.77, p=0.2) after adjusting for female partner age, unprotected sex, and hormonal contraceptive use. Pregnancy in female HIV-1 infected partners was associated with increased female-to-male HIV-1 transmission risk (HR 2.21, 95% CI 1.17-4.19, p=0.02) and this effect was not attenuated in adjusted analysis (adjusted HR 2.28, 95% CI 1.16-4.46, p=0.02). Further adjustment for other factors, including plasma HIV-1 levels, CD4 count, and male circumcision, did not substantially change the findings.

Conclusions: Among heterosexual HIV-1 serodiscordant couples, pregnancy was associated with increased risk of male-to-female and female-to-male HIV-1 transmission. In adjusted analysis, the risk of male-to-female transmission appeared to be largely explained by behavioral and other factors. This is the first study to show pregnancy increased the risk of female-to-male HIV-1 transmission, which was not fully attributable to confounding factors and may reflect biological changes of pregnancy that may increase HIV-1 infectiousness.