recognized for making major contributions to science and medicine.

Acknowledgments

Potential conflicts of interest. G.B.P: no conflicts.

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Mother-to-Child Transmission Risk Is Increased among HIV-Infected Pregnant Women in Ukraine with Serological Test Results Positive for Syphilis

To the Editor—Although syphilis coinfection is a known risk factor for heterosexual transmission of human immunodeficiency virus (HIV) [1, 2], its role in mother-to-child transmission (MTCT) is unclear [3–5]. We investigated the impact of maternal serological test results positive for syphilis on MTCT in the Ukrainian sites of the European Collaborative Study, a cohort study of HIV-infected pregnant women and their children; full methods are described elsewhere [6]. The mother-child pairs in this analysis came from a nested substudy of sexually transmitted infection [7]: for mother-child pairs enrolled from January 2003 through October 2005, sexually transmitted infection test results were extracted from antenatal records and were linked to the prospective European Collaborative Study database; subsequently, 1 center started prospective collection of all antenatal sexually transmitted infection test results, and mother-child pairs enrolled at this center from October 2005 were also included. Antenatal serological screening was performed with nontreponemal tests at pregnancy registration and was repeated in the third trimester, with confirmatory testing using treponemal tests, according to national policy. Infected women and their infants were treated with penicillin.

Logistic regression was used to investigate MTCT risk factors. Infants with persistence of HIV antibody beyond 18 months of age and/or a positive HIV PCR test result were considered to be HIV infected; infants who were HIV antibody negative and/or who had 2 negative PCR results were classified as uninfected [6]. Variables considered in the multivariable model were maternal syphilis serological test results, antiretroviral prophylaxis, elective cesarean delivery, and premature delivery (i.e., delivery at <37 completed gestational weeks), and variables were retained on the basis of Akaike’s Information Criterion [6]. There were 521 mother-child pairs with known infant HIV infection status. All women were born in Ukraine, the median maternal age was 25.0 years (range, 16.1–43.4 years), and 346 (66%) were nulliparous. Injection drug use history was reported by 105 (20%) of 516 women with this information available; 210 (40%) of 521 women reported having had a sexual partner who was an injection drug user. Overall, 3.5% of pregnant women (95% CI, 2.1%–5.4%) had serological test results that were positive for syphilis, increasing to 6 (5.7%) of 105 (95% CI, 2.1%–12.0%) women with a history of injection drug use (a difference that was not statistically significant). Antenatal CD4 cell counts were available for only 163 women (31%) because of limited laboratory capacity. Median CD4 cell count was 514 cells/mm³ (interquartile range, 350–700 cell/mm³) overall, with no difference by syphilis status. The overall HIV MTCT rate was 5.8% (95% CI, 3.9%–8.1%) (30 of 521 mother-child pairs) and was statistically significantly higher among women who were seropositive for syphilis (χ², 6.4; P = .011) (table 1). Having antenatal serological test results that were positive for syphilis was associated with a 5-fold increased MTCT risk univariably and a nearly 4.5-fold increased risk in the adjusted model (table 1).

Our study provides the first evidence of an association between maternal syphilis and MTCT risk in Eastern Europe. A limitation of our study is the lack of maternal HIV RNA quantification in our population, which prevented us from adjusting for this important risk factor for MTCT [6]. However, in a study from Malawi [3], maternal syphilis coinfection was associated with a 2.6-fold increased risk of in utero HIV transmission univariably and a 2.7-fold increased risk independent of maternal viral load. Elimination of congenital syphilis and the virtual elimination of HIV transmission to infants are key public health goals [8–9], and our findings underscore the need for integration of antenatal syphilis screening and treatment programs with MTCT prevention programs.

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Table 1. Unadjusted rates of mother-to-child transmission (MTCT) of HIV infection and logistic regression analyses of risk of MTCT of HIV infection (n = 521).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unadjusted MTCT rate, proportion of mother-child pairs (%)</th>
<th>OR (95% CI)</th>
<th>P</th>
<th>Adjusted OR (95% CI)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal syphilis serological test result</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>26/503 (5.2)</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>4/18 (22.2)</td>
<td>5.24 (16.1–17.0)</td>
<td>.006</td>
<td>4.43 (1.31–15.0)</td>
<td>.02</td>
</tr>
<tr>
<td>Receipt of antenatal/intrapartum antiretroviral prophylaxis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>3/13 (23.1)</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single-dose nevirapine only</td>
<td>8/72 (11.1)</td>
<td>0.42 (0.09–1.84)</td>
<td>.25</td>
<td>0.41 (0.09–1.88)</td>
<td>.25</td>
</tr>
<tr>
<td>Antenatal antiretroviral prophylaxis</td>
<td>19/436 (4.4)</td>
<td>0.15 (0.04–0.60)</td>
<td>.007</td>
<td>0.19 (0.05–0.80)</td>
<td>.02</td>
</tr>
<tr>
<td>Premature delivery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>25/489 (5.1)</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>5/32 (15.6)</td>
<td>3.44 (1.22–9.68)</td>
<td>.02</td>
<td>2.21 (0.72–6.83)</td>
<td>.17</td>
</tr>
<tr>
<td>Elective cesarean delivery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>19/226 (8.4)</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>11/295 (3.7)</td>
<td>0.42 (0.20–0.91)</td>
<td>.03</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Antibiotic Timing for Pneumonia

To the Editor—The recent article by Baum and Kaltsas [1] highlighted concerns about the unintended consequences of the antibiotic first-dose timing measure that is part of the Centers for Medicare and Medicaid Services’ National Pneumonia Project. However, there were several factual errors in the article.

First, the performance measure regarding antibiotic timing was changed to the proportion of patients with pneumonia who receive antibiotics within 6 h after hospital arrival, effective beginning with patients discharged on 1 April 2007 [2]. The National Quality Forum de-endorsed the 4-h measure in March 2007, and the Centers for Medicare and Medicaid Services can now only report hospital performance with use of the National Quality Forum–endorsed 6-h measure, beginning with patients discharged in April 2007.

Second, on 21 November 2007, the Centers for Medicare and Medicaid Services released their proposed plan to implement hospital value-based purchasing (pay for performance) to the US congress.

References


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