

Association between Antiretroviral Therapy during Pregnancy and Prematurity/Low Birth Weight

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Background: There is conflicting evidence on the association between prematurity and the use of combination antiretroviral therapy (ART) during pregnancy. This study examines that association in a long-standing pregnancy exposure registry.

Methods: This study used data from the Antiretroviral Pregnancy Registry, an ongoing registry begun in January 1989. The registry uses a prospective exposure-registration cohort design in which health care providers prospectively register pregnant women with prenatal exposures to ART and provide birth outcome data. For this study, women receiving monotherapy were compared with those receiving combination ART. Additionally, among those receiving combination ART, combinations that included protease inhibitors (PI) were compared with combinations that did not. Those receiving ART only at delivery were excluded from the analysis. Outcome variables included prematurity (<37 weeks gestation), low birth weight (LBW, <2500 grams), and very low birth weight (VLBW, <1500 grams). Those with factors known to be associated with prematurity/LBW were excluded, including multiple gestations, pregnancy losses, and birth defects.

Results: There were no differences between the 397 women receiving monotherapy and the 1863 receiving combination ART in prematurity (13% and 12%, respectively) and LBW (14% and 15%, respectively). There were also no significant differences between the 1008 women receiving combination ART with PI and the 855 receiving combination ART without PI in prematurity (14% and 11%, respectively) and LBW (17% and 13%, respectively). However, women receiving combination ART with PI were significantly more likely to have a VLBW birth than those receiving combination ART without PI (3% and 1%, respectively; unadjusted OR=2.3, 95% CI=1.02, 5.39). Overall, those with earliest exposure to ART in the first or second trimester were more likely to deliver prematurely and/or to have LBW births than those with earliest exposure in the third trimester.

Conclusions: This study found no significant differences in prematurity and LBW between the various treatment groups. However, women receiving combination ART with PI were more likely to have a VLBW infant. Further evaluation of risk factors which might explain this association is underway. These findings warrant careful consideration as combination ART with PI offers substantial benefits in improving maternal health and reducing vertical transmission of HIV infection to infants.