

Antiretroviral therapy in pregnancy: exposure patterns over time and the prevalence of birth defects

P M Garcia¹, D Covington², D H Watts³, K Beckerman⁴, H E Fox⁵, A Parker⁶, A White⁷

¹Northwestern University, Chicago, United States; ²PharmaResearch, Wilmington, United States; ³PAMAB, NICHD, Bethesda, United States; ⁴University of California, San Francisco, United States; ⁵Johns Hopkins University, Baltimore, United States; ⁶Bristol-Myers Squibb Co., Princeton, United States; ⁷GlaxoSmithKline, Research Triangle Park, United States

Objective: To describe the changing patterns of antiretroviral (ARV) therapy in pregnancy along with the prevalence of birth defects.

Methods: The Antiretroviral Pregnancy Registry (APR) is an international registry of pregnancy exposures to ARV agents voluntarily reported by health care providers. Since 1989, prospective reports are collected on specific drugs by trimester of first exposure and neonatal outcomes (gestational age, birth weight and birth defects). The prevalence of birth defects is reported only for drug categories with at least 200 exposures.

Results: Prospective reports now total 1,970 live births. The most dramatic change in ARV therapy in pregnancy is the transition from AZT monotherapy to combination therapy (AZT monotherapy as a percentage of all regimens, 96%-1989-95, 6%-2001). The first reports of protease inhibitor exposures were noted in 1996 (13% of all reports), increased to 52% in 1998, and then steadily declined to 41% in 2001. Before 1999, nnRTI reports accounted for less than 10% of exposures and then steadily increased to 43% in 2001. The proportion of ARV exposures reported in the first trimester has varied little over time (33% in 1989-95, to a high of 47% in 1997-1998). The prevalence of birth defects for 1st trimester exposure to any ARV drug (cases closed through July, 2001) is 20 defects per 819 live births (2.4, 95%CI=1.5-3.8). The prevalence is similar for any 1st trimester PI exposure (9/402, 2.2, 95%CI=1.0-4.2) and any 1st trimester NRTI exposure (20/798, 2.5, 95%CI=1.5-3.9).

Conclusions: Antiretroviral drug therapy in pregnancies reported to the APR changed dramatically over time and are now characterized by combination regimens that often include PI's and/or nnRTI's. The prevalence of overall birth defects for 1st trimester exposure to any ARV drug is not increased over population-based figures. However, the power to detect an increase in specific birth defects is limited.