Risk of Birth Defects Associated with Antiretroviral Exposure During Pregnancy

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Objective: To examine the teratogenic risk of antiretroviral drugs.

Methods: The Antiretroviral Pregnancy Registry (APR) monitors prenatal exposures to antiretroviral (ARV) drugs to detect a potential increase in the risk of birth defects through a prospective exposure-registration cohort. Clinicians register pregnant women with prenatal exposures to any ARV, report data on exposure throughout pregnancy, and provide birth outcome data. Birth defect prevalence is compared to the CDC's population-based surveillance system. Statistical inference is based on exact methods for binomial proportions. For all defects combined, a cohort of 200 is required to detect a doubling of risk compared to CDC's expected prevalence, with 80% power and a Type I error rate of 5%. For specific defects, the power varies with the population's frequency of the defect and the size of the exposed group.

Results: From 1989 through January 2003, the APR has monitored 3160 live births exposed to ARV. Among 1242 first trimester exposures, there were 35 birth defects, prevalence of 2.8% (95% CI = 2.0, 3.9). This rate is not significantly different from the CDC's system with a prevalence of 3.1 per 100 live births (95% CI = 3.1, 3.2). For lamivudine, nelfinavir, nevirapine, stavudine, and zidovudine sufficient numbers of first trimester exposures have been monitored to allow detection of at least a two-fold increase in risk of overall birth defects and birth defects in the more common classes, cardiovascular and genitourinary systems. No such increases have been detected.

Conclusion: APR data demonstrate no increase in the prevalence of birth defects overall or among women exposed to lamivudine, nelfinavir, nevirapine, stavudine, and zidovudine. First trimester exposures to other antiretroviral therapies are of insufficient size to support a separate analysis. Prospective reports of antiretroviral exposures are critically important to determine their teratogenic potential and can be made by calling (800) 258-4263.

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