Birth Defects Following Exposure to Efavirenz-Based Antiretroviral Therapy at Conception/First Trimester of Pregnancy: A Multi-Cohort Analysis

European Pregnancy And Paediatric HIV Cohort Collaboration Study Group

BACKGROUND
To investigate the association between efavirenz (EFV) use during conception or first trimester (T1) of pregnancy and the occurrence of birth defects.

SETTING
Seven observational studies of pregnant HIV-positive women across 13 European countries and Thailand.

METHODS
Individual-level data were pooled on singleton pregnancies included in participating cohorts in 2002-2015. Birth defects were coded according to ICD-10 and the EUROCAT classification. We performed mixed-effects logistic regression models to assess the association between EFV-exposure in utero and likelihood of birth defects.

RESULTS
We included 24,963 live births from 21,093 women. At conception, 30.2% (7537) women were on a non-EFV-based regimen, 4.8% (1200) on EFV and 65% (16,226) were unexposed to antiretroviral therapy (ART). There were 412 infants with ≥1 birth defect, a prevalence of 1.65% (95% CI: 1.50-1.82). Limb/musculoskeletal and congenital heart defects were the most common defects reported. Birth defects were present in 2.4%, 1.6% and 1.3% of infants exposed to respectively non-EFV, EFV and unexposed to ART during conception/T1 (p=0.135). The association between exposure to ART during conception/T1 and birth defects remained non-significant in adjusted analyses, as did exposure to EFV vs non-EFV (adjusted odds ratio 0.61; 95% CI: 0.36-1.03, p=0.067). Among the 21 birth defects in 19 infants on EFV, no neural tube defects were reported.

CONCLUSIONS
Prevalence of birth defects following exposure to EFV-based compared to non-EFV-based ART in conception/T1 was not statistically different in this multi-cohort study, and even lower. EFV is at least as safe as other ART drugs currently recommended for antenatal use.
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