honorarium. MSD: Consultant and Speaker’s Bureau, Consulting fee and Speaker honorarium. ViV: Consultant and Speaker’s Bureau, Consulting fee and Speaker honorarium. BM: Conference attendance, Conference attendance support, Conference fee; Roche: Investigator, Research support, Consultant, Research support, Roche: Investigator, Research support. 

Session: 48. Late Breaker Oral Abstracts: HIV and Antibiotic Trials Thursday, October 4, 2018: 10:30 AM

Background. Antiretroviral therapy for pregnant women with HIV has dramatically decreased perinatal transmission of HIV, but concerns remain regarding adverse neurologic outcomes from possible mitochondrial dysfunction or other mechanisms in children exposed in utero to antiretroviral (ARV) medications.

Methods. We evaluated HIV-exposed uninfected (HEU) children enrolled in the Surveillance Monitoring for ART Toxicities (SMARTT) study, a longitudinal observational cohort study conducted by the Pediatric HIV/AIDS Cohort Study (PHACS) network. The primary outcome of interest was a “neurologic case” (microcephaly, febrile convulsions, intellectual disability, or any other neurologic event) determined by clinical review blinded to ARV exposure. Log-binomial regression analysis was used to obtain adjusted relative risks (aRRs) for associations between in utero ARV exposure and neurologic case status, accounting for potential confounders including Hispanic ethnicity, tobacco use during pregnancy, and birth cohort (2011–2014 and 2015–2017 vs. <2011). To account for variable person-time follow-up within the cohort, Poisson regression models for adjusted incidence rate ratios (aIRR) were also fitted.

Result. Among 3,747 eligible HEU children enrolled in SMARTT (52% male, 68% Black and 31% Hispanic), 377 were diagnosed with neurologic conditions; yielding 24.2 cases per 1000 child-years at risk (95% CI: 22.5, 25.9). The rate of neurologic cases was higher in the first year of life compared with later years (aIRR: 2.76, 95% CI: 1.83, 4.16; Table 1). The association was stronger for children exposed in utero to both non-nucleoside reverse transcriptase inhibitors (NNRTI) and protease inhibitors (PI) (aIRR: 3.32, 95% CI: 1.95, 5.60) compared with exposure to monotherapy NNRTI (aIRR: 1.82, 95% CI: 1.18, 2.84). The association was statistically significant in sensitivity analyses restricted to children enrolled prior to or shortly after birth (aRR: 1.80, 95% CI: 1.06, 2.90).

Conclusion. Exposure to maternal ARV during pregnancy was associated with a higher risk of neurologic abnormalities in infancy and childhood.

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