

ABSTRACT

BACKGROUND: Studies in HIV-1-infected infants and HIV-1-exposed, uninfected infants link early cytomegalovirus (CMV) acquisition with growth delay and cognitive impairment. We investigated maternal valacyclovir to delay infant acquisition of CMV. **METHODS:** Pregnant women with HIV-1, HSV-2 and CD4 count >250 cells/ μ l were randomized at 34 weeks gestation to 500 mg twice-daily valacyclovir or placebo for 12 months. Maternal CMV DNA was measured in plasma at 34 weeks gestation, in cervical secretions at 34 and 38 weeks gestation, and in breast milk at 7 postpartum timepoints; infant CMV DNA was measured in dried blood spots at 8 timepoints including birth. **RESULTS:** Among 148 women, 141 infants were compared in intent-to-treat analyses. Maternal and infant characteristics were similar between study arms. Infant CMV acquisition did not differ between study arms, with 46/70 infants (66%) in placebo arm and 47/71 infants (66%) in the valacyclovir arm acquiring CMV; median time to CMV detection did not differ. CMV DNA was detected in 92% of 542 breast milk specimens with no difference in CMV level between study arms. Change in cervical shedding of CMV DNA between baseline and 38 weeks was 0.40-log greater in the placebo arm than the valacyclovir arm ($p = 0.05$). **CONCLUSIONS:** In this cohort of HIV-1-seropositive mothers, two-thirds of infants acquired CMV by one year. Maternal valacyclovir had no effect on timing of infant CMV acquisition or breast milk CMV viral loads, although it modestly reduced cervical CMV shedding. Maternal prophylaxis to reduce infant CMV acquisition warrants further evaluation in trials with antiviral agents