Abstract

Background. We previously reported that infants in Kenya were infected with Epstein-Barr virus (EBV) at <6 months of age, suggesting that mothers were the likely source of transmissible virus to the infant. In this study, we investigated whether breast milk contained infectious EBV and the role of malaria in EBV shedding in breast milk.

Methods. Breast milk samples were obtained from Kenyan mothers at postpartum weeks 6, 10, 14, and 18 and analyzed for presence of infectious EBV.

Results. We found that the prevalence of EBV DNA and the mean EBV load were significantly higher at 6 weeks and decreased through postpartum week 18 ($P < .0001$). High EBV load in breast milk correlated with mothers who had *Plasmodium falciparum* malaria at delivery. To determine whether viral DNA was encapsidated, breast milk samples were treated with DNAse before DNA extraction. Sixty percent of samples were DNAse resistant, suggesting that the viral DNA in breast milk was encapsidated. Next, we exposed peripheral blood mononuclear cells to breast milk supernatant, which resulted in the generation of EBV-positive lymphoblastoid cell lines, indicating that the virus in breast milk was infectious.

Conclusions. Our data suggest that breast milk contains infectious EBV and is a potential source of viral transmission to infants living in malaria-endemic regions.