New Information on the Relationship Between Exclusive Breastfeeding and Lower Mother-to-Child HIV Transmission

To the Editor—I read with interest the recent paper by Neveu and colleagues, “Cumulative Exposure to Cell-Free HIV in Breast Milk, Rather than Feeding Pattern per se, Identifies Postnatally Infected Infants” [1]. The paper not only provides new information showing that infants become infected with human immunodeficiency virus (HIV) because of higher cumulative exposure to cell-free HIV through breastfeeding but also provides information as to why exclusive breastfeeding (EBF, defined as breast milk and nothing else) has been associated with lower mother-to-child transmission. I have previously been concerned about the lack of mechanistic information that could explain how EBF could lead to fewer infants becoming HIV-infected [2].

The authors compared the timing of infant HIV infection, measured by RNA polymerase chain reaction on monthly blood spot samples, with daily infant feeding data collected at weekly home visits in a large cohort of breastfeeding HIV-infected South African women. Nevirapine at delivery was the only antiretroviral drug treatment available at the time. There was no difference in duration of EBF before infant HIV acquisition in matched case-control pairs censored when the case became infected: 65 days for HIV-infected infants and 70 days for uninfected infants, \( P = .6 \). However, there was a difference in total duration of EBF between these groups: 157 days for HIV-infected infants and 183 days for uninfected infants, \( P = .003 \). This suggests that the causal link between longer EBF and lower transmission rate may be backward from what has been previously assumed, that is, infant HIV infection may lead to cessation of EBF rather than EBF being protective against infant HIV infection. It is possible that women, even when intensively supported to exclusively breastfeed as in this cohort, may feed other foods to an infant who, during the acute stage of HIV infection, seems unwell, fussy, or growing poorly. In support of the idea that it is poor infant health that may lead to stopping EBF, we have previously shown in a well-supported Zambian cohort that lower infant length-for-age at 6 weeks of age was associated with stopping EBF shortly thereafter [3].

In addition to new information suggesting infant HIV infection may lead to stopping EBF, Neveu et al [1] provide additional support for the suggestion [2] that the association between shorter EBF and increased postnatal HIV transmission is because both result from poor maternal health. Women whose infants became HIV-infected had lower CD4 counts, as well as shorter overall duration of EBF. In our study [3], shorter duration of EBF was associated with maternal systemic inflammation at 6 weeks. It may be that women who are ill feel unable to exclusively breastfeed for long.

Fortunately, the World Health Organization now recommends provision of antiretroviral drugs to the HIV-infected mother or her infant for the first year of breastfeeding [4]. In addition to preventing infant HIV infections, this may, by promoting maternal or infant health, permit longer duration of EBF. EBF in itself is beneficial for infant health, but it is good that we are no longer expecting EBF promotion alone to prevent infants from becoming HIV-infected.

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