

CORRESPONDENCE



Antiretroviral Prophylaxis to Reduce Breast-Milk HIV-1 Transmission

TO THE EDITOR: As professionals working in a resource-limited country to prevent the transmission of the human immunodeficiency virus (HIV) from mother to child and to promote child survival and the use of highly active antiretroviral therapy (HAART), we read with interest the articles about abrupt weaning and prophylaxis regimens in infants by Kuhn et al. and Kumwenda et al. (July 10 issue).^{1,2} Harm-reduction alternatives for HIV-infected mothers who breast-feed are essential. However, in the study by Kuhn et al., the risk of mother-to-child transmission or death among breast-fed infants, whether they were abruptly weaned or not, was more than 30%.¹ Extended antiretroviral prophylaxis was superior to single-dose nevirapine, but 8.0% of infants were infected at birth; postnatal mother-to-child transmission related to breast-feeding added a 5.2% or 6.4% risk of infection.² Alternatives should be considered, including HAART (which is now available to HIV-infected persons in Zambia,³ Malawi,⁴ and the Dominican Republic⁵), formula, and improved access to potable water. From 1999 to 2005, the rate of mother-to-child transmission of HIV among our patients, most of whom have low levels of both income and education, was 3.3% with the use of multidose antiretroviral treatment and exclusive formula-feeding; 2.8% of uninfected infants died. Pregnant women in developing countries can use HAART, prophylaxis regimens for infants, formula, and home-purified water. The cost is significant, but the savings (in lives, orphan care, and treating infected children) are also significant.

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abrupt weaning on HIV-free survival of children in Zambia. *N Engl J Med* 2008;359:130-41.

2. Kumwenda NI, Hoover DR, Mofenson LM, et al. Extended antiretroviral prophylaxis to reduce breast-milk HIV-1 transmission. *N Engl J Med* 2008;359:119-29.

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TO THE EDITOR: The article by Kumwenda et al. provides invaluable insight into the reduction of postnatal transmission of HIV in resource-poor settings. However, the authors did not discuss one important facet of their study: the ascertainment of the infants' HIV status at birth.

For obvious reasons, only infants who were not HIV-infected were included in the study. Unfortunately, in resource-poor countries, the HIV status of a child — unless the child is symptomatic — often remains unknown until 18 months of age. Unlike adults, children require specialized diagnostic tests for HIV; these tests are not routinely

THIS WEEK'S LETTERS

1845 Antiretroviral Prophylaxis to Reduce Breast-Milk HIV-1 Transmission

1848 Electronic Health Records in Ambulatory Care

1850 Malignant Gliomas in Adults

1850 Abdominal Pain and Weakness after Gastric Bypass Surgery

1853 Antiemetic Properties of the Antiepileptic Drug Levetiracetam

available in many developing countries because of exorbitant costs.¹ A 2007 study in 77 developing countries (71% of all developing countries) showed that only 8% of infants had been tested for HIV within the first 2 months after birth.¹

Therefore, a policy of antiretroviral prophylaxis in infants, although theoretically plausible, is likely to be impeded by programmatic and infrastructural barriers. This sad reality is the reason why research into challenges in developing countries should try to mirror the reality on the ground as much as possible.

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1. Towards universal access: scaling up priority HIV/AIDS interventions in the health sector. Progress report 2008. Geneva: World Health Organization, 2008. (Accessed October 3, 2008, at http://www.who.int/hiv/pub/towards_universal_access_report_2008.pdf.)

TO THE EDITOR: In the study by Kumwenda et al., the rate of HIV infection among the infants who received postpartum prophylaxis for 14 weeks was lower than the rate among the control population. However, incident cases of infection still occurred throughout the period of prophylaxis. Logically, these infants probably have been infected with a virus that was resistant to nevirapine, nevirapine-zidovudine, or both. Were studies done to answer this question?

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TO THE EDITOR: The editorial by Gray and Saloojee¹ on the transmission of HIV through breast-feeding undervalues the importance of the peer-reviewed data that establish that breast-feeding by HIV-infected women can be made safer and that the overall outcomes of extended breast-feeding are similar to those of replacement feeding after 4 months of age. These interventions,² including those reported in the editorial, enable the majority of HIV-infected women — who live in developing countries and for whom replacement feeding is not a viable alternative — to exercise wider affordable and culturally appropriate choices to improve child survival.

Breast-feeding is a sustainable choice and is crucial during a period of multiple global crises of poverty and shortages of water, energy, and food.³

Disastrous consequences have been reported in some programs for the prevention of mother-to-child transmission of HIV that endeavor to support replacement feeding.⁴

The authors' implied criticism of the new guidelines of the World Health Organization (WHO) on infant feeding for HIV-positive women⁵ is misplaced. The articles they discuss in fact emphasize the congruence of science (i.e., rational interventions) and social need (i.e., an informed, appropriate choice of infant feeding).

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5. HIV and infant feeding: new evidence and programmatic experience: report of a technical consultation. Geneva: World Health Organization, 2007. (Accessed October 3, 2008, at http://www.who.int/child_adolescent_health/documents/9789241595971/en/index.html.)

DR. TAHA AND COLLEAGUES REPLY: Román-Pouériet and colleagues provide an example of how combined efforts to provide a safe water supply, formula, and maternal HAART can lead to substantial gains in child survival. The authors do not provide details on who is receiving HAART — women with low CD4 cell counts or healthy women who will not qualify for HAART? We would like to see these successful findings published in order to benefit the scientific community and guide policy in the resource-constrained settings in sub-Saharan Africa.

Waweru raises an important point regarding the challenges of early identification of HIV-infected infants, arguing that because early diagnosis in infants by means of DNA polymerase chain reaction (PCR), which was used in our study, is not widely available, extended prophylaxis in infants may not be a feasible approach. We acknowledge

the cost and laboratory limitations associated with implementation of this approach. However, in countries such as Malawi, where 40 to 50% of women present late in delivery, such options for postnatal prevention of HIV transmission are necessary. Other methods of collecting whole blood, such as dried blood spots on filter-paper cards, have also been successfully used for HIV testing.^{1,2}

Early diagnosis in infants remains an essential part of programs to prevent mother-to-child transmission of HIV. Preliminary data from the Children with HIV Early Antiretroviral Therapy (CHER) Study in South Africa suggest that early identification of HIV infection and the initiation of antiretroviral treatment in the first 12 weeks of life can reduce mortality among HIV-infected infants by 75% in resource-poor settings.³ Although early diagnosis in infants remains a challenge for many countries, we are encouraged by the improved access-to-care services in several African countries through the support of the President's Emergency Plan for AIDS Relief (PEPFAR) and the Global Fund to Fight AIDS. For example, in Malawi, a program involves the early diagnosis of HIV in infants based on DNA PCR samples collected on filter-paper cards. In the first 8 months of operation, 1780 samples obtained from infants younger than 18 months of age have been tested, with an average turnaround time of 10 days.⁴ Technological limitations should not impede our efforts to search for new and more effective measures to prevent HIV infection in children.

Mills comments on incident infections in infants during the prophylaxis period and suggests that these infections could be due to viruses that are resistant to nevirapine or nevirapine-zidovudine. We agree that the study of resistance is critically important. We are currently performing these resistance assays, and we will report the results when the testing has been completed.

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DR. KUHN AND COLLEAGUES REPLY: We completely agree with the recommendation that HAART be given to pregnant women who meet certain criteria. Antiretroviral therapy can save mothers' lives and effectively reduce transmission. The latter benefit diminishes further the justification for avoiding or shortening the period of lactation — another benefit. Concerns regarding the use of formula in low-resource settings are not only about cost but also, to a greater extent, about safety.¹ In our trial, there was no benefit of weaning at 4 months as compared with continuing breast-feeding into the second year. Likewise, in a randomized trial in Botswana, HIV-free survival was not improved with the use of formula from birth.² The provision of clean water does not eliminate the necessity of breast-feeding. Even in wealthy communities, breast-feeding provides protection against severe infant morbidity.³ Prematurely truncating the normal duration of breast-feeding, like eliminating any breast-feeding, is neither safe nor effective; it is harmful in some subgroups, including HIV-infected children, and it was not widely acceptable in our study population. Harm-reduction policies that affect such large numbers of vulnerable infants should be evidence-based and include only interventions that are shown to be effective.

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THE EDITORIALISTS REPLY: The suggestion that our editorial undervalues the importance of the two corresponding articles is without basis. We readily acknowledged the contributions of the findings of these studies, including their ability to extend options for breast-feeding mothers. The study by Kumwenda et al. is most pertinent for mothers who are willing to curtail breast-feeding early, but any gains achieved are eroded by continued breast-feeding. Decisions regarding HIV and breast-feeding are highly context-specific, and generalizing evidence from a particular setting to a region, continent, or all “developing countries” must be done cautiously.

We have no qualms about the 2006 WHO consensus statement,¹ but this statement, similar to other evidence-based guidelines, must be interpreted in light of emerging evidence. There is nothing spurious about respecting women’s right of choice and responding to any perceived misguided decisions by designing and investigating appropriate scientific solutions.

The quest to provide HIV-exposed infants with breast milk that is safe is ongoing, and the solution to eradicating or minimizing the transmission of HIV through breast milk is tragically not yet apparent. The only guarantee to HIV-free child survival is preventing HIV infection.

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Electronic Health Records in Ambulatory Care

TO THE EDITOR: DesRoches et al. (July 3 issue)¹ describe the low level of adoption of electronic health records by primary care physicians in the United States. In contrast, electronic health records have been widely adopted by primary care and hospital trusts of the National Health Service in the United Kingdom. York Hospital is now using electronic resources to improve communication among health care providers by implementing a prompt (<24 hours), accurate, electronic summary of each patient’s hospital discharge.

We recently surveyed local primary care physicians about the hospital’s “electronic discharge notification”; 50% of the 81 primary care physicians surveyed had received and used it. A total of 80% of these physicians stated that this format was a considerable improvement over the commonly illegible handwritten format, and 95% of them agreed that electronic discharge notifications should include the diagnosis, medications, recommendations for primary care physicians,

outpatient follow-up information, and the discharge destination. A total of 90% of these physicians thought that the new electronic summary should continue as the first document of communication with primary care physicians on patient discharge. We believe that with the increased adoption and awareness of electronic discharge formats, communication between hospital physicians and primary care physicians will improve.

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TO THE EDITOR: There are great advantages and disadvantages to the implementation of electronic health records, but the question is how to fund