Published in final edited form as:

AIDS. 2015 September 10; 29(14): 1897–1898. doi:10.1097/QAD.0000000000000796.

Time of HIV diagnosis in infants after weaning from breast milk

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Abstract

Of 28 infants diagnosed with HIV infections after the recommended time of breastfeeding cessation in a large clinical trial (the Breastfeeding, Antiretrovirals and Nutrition Study), 19 (68%) were first detected more than 6 weeks (and up to 168 days) after recommended weaning. The current WHO recommendation for HIV testing of infants is at 6 weeks or more after weaning; these data argue for repeat HIV testing of infants up to 6 months after breastfeeding cessation, so that no infant HIV infections are missed.

We previously conducted a clinical trial in 2369 mother–infant pairs randomized to either maternal combination antiretroviral agents (zidovudine/lamivudine/lopinavir–ritonavir), daily infant nevirapine, or neither, during 24 weeks of exclusive breastfeeding followed by 4 weeks of weaning (the Breastfeeding, Antiretrovirals and Nutrition [BAN] Study) [1,2]. The study demonstrated that both maternal and infant antiretrovirals significantly reduced HIV transmission during breastfeeding. In the BAN study, infants were tested for HIV infection at birth, 2, 12, 28, and 48 weeks, and the window of transmission was later narrowed by testing dry blood spot specimens from all interim visits (around/postweaning these were at 24, 32, 36, and 42 weeks) [1,2]. The median time of weaning for infants in the BAN study was 26.6 weeks (interquartile range 24.3–28.9 weeks). As previously reported, there were 28 infants in the study whose HIV infection was first detected after 28 weeks, time that all mothers should have weaned by study protocol [2]. The median (interquartile range) time of first detection of HIV infection in these infants from their time of weaning was 83.5 (32.5–121) days. By study arm, this time was 57 (29–84) days for the infant nevirapine arm, 89 (33–125) days for the maternal antiretroviral arm, and 121 (38–125) days for the control

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Authors' contributions: A.P.K. conceived the study and wrote the article. C.C.K. performed the data analysis and reviewed and contributed to the article. J.N. performed the diagnostic testing and reviewed the article. D.J.J. and C.v.d.H. reviewed and revised the article.

Conflicts of interest

There are no conflicts of interest.

arm. In three infants (two in the infant nevirapine arm and one in the maternal antiretroviral arm), HIV infection was detected 42, 85, and 84 days prior to actual weaning, respectively (these infants continued breastfeeding past the time of recommended weaning at 28 weeks). In another infant with reported weaning at 26 days and missed visits since 40 days of age, HIV was first detected at 258 days, upon return to the clinic. For all the rest, HIV infection was first detected anytime from 28 to 168 days from reported weaning (Fig. 1).

Currently, the WHO recommends virologic testing of all HIV-exposed breastfeeding infants at 6 weeks or more after breastfeeding cessation [3]. Our data from this large clinical trial indicate that testing at only 6 weeks would have missed 19 of the 28 infants (68%) whose HIV infection was first detected after the time of recommended weaning. It took up to 168 days after reported weaning for 25 infants who did not miss any testing visits to first test HIV-positive. In ‘real world’ practice, such delays may be much more pronounced, as infant testing is not as frequent as every 4–6 weeks, as in this study, and infants may not present for their scheduled visits. In addition, some mothers may continue episodic breastfeeding past the date they report weaning or they may wean and employ wet nurses who may be, unknowingly, HIV-infected themselves. Antiretroviral drugs may suppress viral replication enough to delay detection of HIV infection [4]. We believe that formal postweaning infant testing recommendations need to reflect these realities and recommend testing also at 3 and 6 months after weaning, and at the first time infants present at the clinic if they have previously missed visits, so that all HIV-infected infants can benefit from early treatment and care.

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Fig. 1.
Time of first detection of HIV infection in the infants from time of weaning (in days): The Breastfeeding, Antiretrovirals, and Nutrition (BAN) Study. IQR, interquartile range.