Title

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Journal

Clinical Infectious Diseases, 78(6)

Authors

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Publication Date

2024-06-14

DOI

10.1093/cid/ciad778

Peer reviewed

Clinical Infectious Diseases

VIEWPOINTS

Breastfeeding in the United States Among Women With HIV: Con Viewpoint

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To breast feed or not has long been a difficult question for women with human immunodeficiency virus (HIV) in high-income countries, as undetectable HIV in maternal plasma does not translate to zero risk of transmission while breastfeeding, and clean water and formula are readily available. Recent, and more permissive, changes in US and other high-income-country guidelines regarding breastfeeding underscore this issue and acknowledge the information gaps that are essential for informed maternal choice and provider management. These include lack of guidance as to routine monitoring of mothers during lactation, type and length of prophylaxis for infants, and lack of data on factors associated with increased breast-milk viral load and risk of transmission. Ancillary to data are the education and staffing needs for providers participating in the management of breastfeeding individuals. Future studies of breast-milk transmission will need to evaluate these gaps so that we can move transmission to zero.

Keywords. HIV; breastfeeding.

To breast feed or not to breast feed has long been a difficult question for women with human immunodeficiency virus (HIV; WWH). The risk of infant transmission has to be carefully weighed against the infant and maternal benefits of breastfeeding. In settings where infant morbidity and mortality are high and alternative feeding methods are challenging, the calculus is clear, breast is best. Although there was tremendous hope that suppressive antiretroviral therapy (ART) would eliminate the risk of breast-milk transmission, this is not the case. Undetectable = untransmittable (U = U) is applicable to treatment as prevention but may not apply to breast-milk transmission. Thus, despite maternal ART, HIV infections continue to occur in infants [1]. Half of these new infections occur in breastfeeding infants after 6 weeks postpartum, which is the accepted definition of breast-milk transmission [2]. A UNAIDS report in 2019 found that, despite initiation of ART before or during early pregnancy, 20% of infant infections occurred during breastfeeding [3]. Although the risk–benefit calculations favoring breastfeeding in these settings appear clear, more research needs to be done to identify implementable strategies to further reduce the potential for transmission during breastfeeding [4].

Recent, and more permissive, changes in US and other high-income-country guidelines regarding breastfeeding among WWH [5] underscore the knowledge gaps that are essential for informed maternal choice and provider management. These can be broken down into several categories. They include issues specific to the mother's health; best antiretrovirals (ARVs) to use, how often to monitor viral load during lactation and routine maternal medical care and monitoring, issues specific to infants; how to handle mixed feeding, best ARV (and dosing) and length of administration, and frequency of monitoring of infant HIV status, and issues related to breastfeeding; is there virus in breast tissue, which ARVs cross (best) into breast milk, and does virus stay in stable breast reservoirs or change over time during the months of breastfeeding.

What do these guidelines say and what is missing? For those mothers deemed at high risk for HIV transmission, the guidelines authors agree that replacement or formula feeding is best. However, for those mothers at potentially low risk of transmission, little is straightforward. All agree that mothers should never be penalized for wanting to or electing to breast feed. This meets standard practice for family-centered care and is clearly in the best interest of keeping families engaged in care.

Women who are on sustained ARVs, and with an undetectable plasma viral load, and who choose to breast feed should be supported. However, it is important that they understand that low risk does not mean no risk. Risk perception is highly variable and depends on personal experience, knowledge, belief, emotions, and culture. Providers must be trained to explain what "<1% risk of transmission" really means so that they can communicate nuances to our diverse populations.

Received 19 October 2023; editorial decision 13 December 2023; published online 8 January 2024

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Clinical Infectious Diseases® 2024;78(6):1629–31

https://doi.org/10.1093/cid/ciad778

Several older studies document transmission occurring during breastfeeding [6, 7]. What we don't know is why these transmissions occurred. Effective practices depend on truly understanding the mechanisms behind breast-milk–associated transmission. Potential reasons include incomplete or ineffective counseling, nonadherence to recommendations, and/or as yet undefined biological factors.

Foreseeing the contingencies that could contribute to any one case of transmission is challenging. It can be challenging for a mother with a new infant and who may have other children, be working outside of the home, or have other family stressors, to take daily oral medication. Not addressed is the potential need for adherence to be 100% all the time to prevent transmission. Also not addressed is how postpartum depression is managed in high-, middle-, and low-income countries [8, 9] and how this contributes to concerns regarding transmission. While we appreciate the many challenges in getting and taking daily medications, we also have to factor in additional, but not quantified, medical and laboratory visits and cost, and possible loss of insurance and need for continued access for the mother and infant to medications postpartum. Not addressed is the critical mass of providers that may also be needed and the lack of current infrastructure to carry out these intensive follow-up plans. Among the several published studies from high-income countries, significant infrastructure needs were discussed. These included having a large team caring for the breastfeeding mother, including an obstetrician, neonatologist, pediatric and adult infectious disease (ID) clinicians, lactation consultants, social workers, and others all needed to care for these individuals [10, 11]. Most sites do not have these ancillary staff and lack resources to build them. Lack of milk supply, cracked nipples, mastitis, and other breastfeeding-specific issues that could result in increased risk or otherwise negatively impact the heath of the mother–infant pair are often out of the scope of both the training and practice of ID clinicians. Lack of timely interventions and knowledgeable care providers for these issues might also result in incorrect information being passed on to lactating mothers. Downstream gaps translate into increased risk for HIV transmission during breastfeeding.

Other studies, also from high-income countries, have documented a wide range of "acceptable" prophylaxis for infants [12]. Many families are against daily medications for their infants without strong data supporting their use, particularly when this may be prolonged [13]. Which medications offer the best prevention of transmission? How do we best monitor infant dosing, recognizing that most, but not all, infants double their birth weight by 6 months and triple it by 1 year. Without data backing up best practices of which ARVs to use, how often to bring infants back in for monitoring, and how long post-breastfeeding we might need to continue these ARVS, we continue to run the risk of under- and over-administration of ARVs to growing infants. Missing are data on issues regarding insurance coverage (often lost for mothers after 6 weeks postpartum) and critical for both the infant's and mother's follow-up needs, such as lab testing and consultative appointments.

Adding to the issues of unknowns are those of exclusive versus intermittent breastfeeding. Exclusive breastfeeding for the first 6 months of life is optimal for child health regardless of maternal HIV infection [14]. However, for WWH this imperative is more consequential. Nonexclusive breastfeeding may be associated with increased levels of HIV DNA and RNA and transmission, but recent data with current ARVs are lacking [15, 16]. Nonexclusive breastfeeding also increases the risk of mastitis, which also significantly increases HIV transmission risk [17–20]. Weaning is a complex negotiation between the mother and infant presenting numerous emotional and developmental challenges [21]. It is also a time of increased HIV transmission risk [22]. Mothers may require additional support and monitoring during this period.

Knowledge gaps in our understanding of breast-milk transmission also hinder efforts to get to zero transmissions for breastfeeding. The mammary epithelial barrier restricts HIV entry in milk, even in the absence of ART. However, this barrier is dynamic and influenced by various factors, such as changes in breastfeeding practice, nipple damage, and mastitis. Discordant HIV shedding between the right and left breast is not uncommon and complicates assessment of transmission risk [23, 24]. Moreover, the extent to which HIV RNA or DNA in breast milk contributes to transmission is unclear [25]. Some groups have reported that breast milk harbors cells with latent HIV that persists despite ART [26]. This would suggest that prolonged infant prophylaxis may be essential to prevent transmission.

In summary, data are lacking on best practices for breastfeeding in high-income countries. Low- and middle-income countries will also benefit from a better understanding of these best practices. Developing data-driven guidance for ID teams regarding best practices for infant testing throughout breastfeeding are needed. Studies to assess viral load in breast milk across the months of breastfeeding, timing and use of effective ARVs to administer to infants to prevent transmission, and how best to use long-acting antiretroviral medications and broadly neutralizing antibodies (bNAbs) to prevent infection are all also needed. It is our job now to find out these answers so that we can effectively move breast-milk transmission to zero.

Notes

Financial support. There were no sources of funding for this work.

Potential conflicts of interest. S.N. reports support as International Maternal Pediatrics Adolescent AIDS Clinical Trial (IMPAACT) Network PI; National Institute of Allergy and Infectious Diseases (NIAID), National Institute of Mental Health (NIMH), and Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD). G.A. reports grants or contracts as IMPAACT Network LC PI ; NIAID, NIMH, and NICHD for MSM and Substances

Cohort at UCLA Linking Infections Noting Effects, Scientific Advisor & Repository Director NIDA; ACTG LC Network PI; NIAID, NIMH, and NICHD for UCLA-CDU CFAR Core Director NIAID; Trial of Human Oligosaccharide-based Synbiotics for HIV Exposed Uninfected NICHD Investigator for ATN Scientific Leadership Group, NICHD; Effects of Human Milk Oligosaccharides and Gut Microbiome on Growth and Morbidity in HIV-Exposed Uninfected Infants MPI NICHD for The Impact of COVID-19 Pandemic on Severe Mental Illness Investigator, Investigator, NIMH. Both authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

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