

Abstract:

How best to advise mothers infected with human immunodeficiency virus type 1 (HIV-1) in developing countries regarding breastfeeding is an important issue that has generated considerable debate. Previous studies have addressed this problem by means of mathematical models, but without considering the issue of the duration of breastfeeding. A mathematical model was developed to compare the age-specific risks of mother-to-child HIV transmission versus the excess mortality due to not breastfeeding. In this model it is assumed that both the risk of mother-to-child transmission of HIV through breast milk and the relative risk of not breastfeeding do not vary with age. The model indicates that, in HIV-1-seropositive mothers, the decrease in child mortality afforded by breastfeeding may exceed the risk of mother-to-child HIV-1 transmission only during the first 3-7 months of life. Thereafter the risk of HIV-1 transmission probably exceeds the mortality benefit of breastfeeding. Experimental studies of counseling HIV-1-infected mothers to limit their duration of breastfeeding should be considered in the setting of developing countries.