

Abstract

BACKGROUND:

In resource-limited settings where no safe alternative to breastfeeding exists, WHO recommends that antiretroviral prophylaxis be given to either HIV-infected mothers or infants throughout breastfeeding. We assessed the effect of 28 weeks of maternal or infant antiretroviral prophylaxis on postnatal HIV infection at 48 weeks.

METHODS:

The Breastfeeding, Antiretrovirals, and Nutrition (BAN) Study was undertaken in Lilongwe, Malawi, between April 21, 2004, and Jan 28, 2010. 2369 HIV-infected breastfeeding mothers with a CD4 count of 250 cells per μL or more and their newborn babies were randomly assigned with a variable-block design to one of three, 28-week regimens: maternal triple antiretroviral (n=849); daily infant nevirapine (n=852); or control (n=668). Patients and local clinical staff were not masked to treatment allocation, but other study investigators were. All mothers and infants received one dose of nevirapine (mother 200 mg; infant 2 mg/kg) and 7 days of zidovudine (mother 300 mg; infants 2 mg/kg) and lamivudine (mothers 150 mg; infants 4 mg/kg) twice a day. Mothers were advised to wean between 24 weeks and 28 weeks after birth. The primary endpoint was HIV infection by 48 weeks in infants who were not infected at 2 weeks and in all infants randomly assigned with censoring at loss to follow-up. This trial is registered with ClinicalTrials.gov, number NCT00164736.

FINDINGS:

676 mother-infant pairs completed follow-up to 48 weeks or reached an endpoint in the maternal-antiretroviral group, 680 in the infant-nevirapine group, and 542 in the control group. By 32 weeks post partum, 96% of women in the intervention groups and 88% of those in the control group reported no breastfeeding since their 28-week visit. 30 infants in the maternal-antiretroviral group, 25 in the infant-nevirapine group, and 38 in the control group became HIV infected between 2 weeks and 48 weeks of life; 28 (30%) infections occurred after 28 weeks (nine in maternal-antiretroviral, 13 in infant-nevirapine, and six in control groups). The cumulative risk of HIV-1 transmission by 48 weeks was significantly higher in the control group (7%, 95% CI 5-9) than in the maternal-antiretroviral (4%, 3-6; $p=0.0273$) or the infant-nevirapine (4%, 2-5; $p=0.0027$) groups. The rate of serious adverse events in infants was significantly higher during 29-48 weeks than during the intervention phase (1.1 [95% CI 1.0-1.2] vs 0.7 [0.7-0.8] per 100 person-weeks; $p<0.0001$), with increased risk of diarrhoea, malaria, growth faltering, tuberculosis, and death. Nine women died between 2 weeks and 48 weeks post partum (one in maternal-antiretroviral group, two in infant-nevirapine group, six in control group).

INTERPRETATION:

In resource-limited settings where no suitable alternative to breastfeeding is available, antiretroviral prophylaxis given to mothers or infants might decrease HIV transmission. Weaning at 6 months might increase infant morbidity.

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