Poster #871

Impact of Maternal Antiretroviral Regimen on Six-Month HIV-free Survival in Botswana

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Background

- Programs are shifting from using Zidovudine (ZDV) alone (WHO Option A) to 3-drug ART (WHO Option B/B+) for prevention of mother-to-child HIV transmission (PMTCT) among pregnant women who do not require ART for their own health
- TDF/FTC/EFV (Atripla) is now the recommended first-line regimen for PMTCT by the World Health Organization, and by the Botswana PMTCT Programme

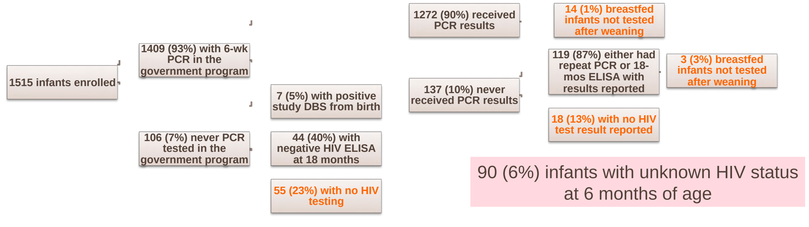
Objective

- To evaluate MTCT and 6-month HIV-free survival by ARV regimen during the transition from WHO Option A to WHO Option B with TDF/FTC/EFV in a programmatic setting in Botswana

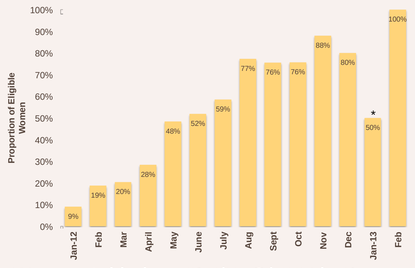
Methods

- From March 2012-March 2014, 1499 HIV+ women and their 1515 infants were enrolled in 5 government-run post-natal wards in Botswana
- During this time, the national PMTCT program transitioned from Option A (ZDV for women with CD4 >350 and combination antiretroviral therapy [ART] for women with CD4 <350) to Option B (Atripla for all pregnant women regardless of CD4 count)
- Participants were interviewed every 1-3 months by phone or home visit to assess infant HIV status and mortality
- Infants were tested for HIV by dried blood spot PCR at 6 weeks old as part of routine care (and after weaning if breast-fed). Dried blood spots from birth were tested by the study for any infant who did not receive government testing.
- The association between PMTCT strategy and 6-month HIV-free survival was assessed by logistic regression modeling controlling for maternal time on ART, maternal age and CD4 count.

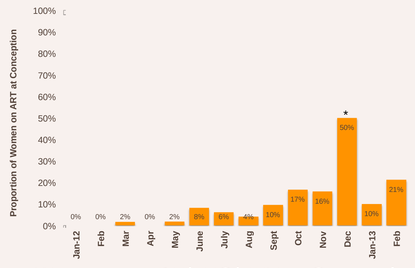
Infant Testing



TDF/FTC/EFV Use in Pregnancy with the Rollout of Option B



Women Initiating TDF/FTC/EFV in Pregnancy



Women on TDF/FTC/EFV at Conception

*In January 2013, only 8 women initiating Atripla enrolled, and in December 2013 only 6 women on ART at conception enrolled. The very small denominators account for the unusual % during these months

6-month MTCT and Infant Mortality by Maternal ART Regimen

	HIV Infection			Death			HIV Infection or Death		
	Infants (%) N=1421+	OR (95% CI)	aOR# (95% CI)	Infants (%) N=1508	OR (95% CI)	aOR@ (95% CI)	Infants (%) N=1461−	OR (95% CI)	aOR^ (95% CI)
ART	5 (0.5%)	1.0 (ref)	1.0 (ref)	31 (3.1%)	1.0 (ref)	1.0 (ref)	35 (3.6%)	1.0 (ref)	1.0 (ref)
ZDV-Only	14 (3.7%)	7.1 (2.5, 19.8)	5.4 (1.7, 17.5)	21 (5.1%)	1.7 (0.9, 2.9)	1.7 (0.8, 3.5)	32 (8.0%)	2.3 (1.4, 3.8)	2.6 (1.3, 5.3)
No ARVs	11 (10.7%)	22.3 (7.6, 65.5)	16.8@ (4.1,69.0)	4 (3.6%)	1.2 (0.4, 3.3)	1.0 (0.1, 7.4)	12 (11.7%)	3.5 (1.7, 6.9)	3.7@ (1.2, 11.4)
Total	30 (2.1%)			56 (3.7%)			79 (5.4%)		

All analyses excluded infants born to 4 women with unknown ARV status during pregnancy and 3 infants LTFU before 3 months of age. Sensitivity analysis assuming all infants who died before HIV tested were HIV positive yields MTCT of 3.0% among infants born to women on ART, 7.3% among infants born to women on AZT and OR 2.5 (95% CI 1.5,4.3), aOR 2.9 (95% CI 1.4,6.2)
+Additionally excluded 87 infants with unknown HIV status at 6 months
−Exluded infants with unknown HIV status but included 40 infants who had no reported HIV testing but died before 6 months of age
Adjusted for CD4 count and time on ART
@Adjsuted for CD4 count and maternal age
^ Adjusted for CD4 count, time on ART and maternal age

- Median Time on ZDV was less than median time on ART (63 vs. 89 days, p<0.0001)
- However, there was no significant difference in the median length of time on ZDV (61 vs. 63 days, p=0.82) or ART (77 vs. 90 days, p=0.52) among women who transmitted HIV compared with those who did not transmit HIV to their infants

Timing of MTCT

- All infant testing by PCR
- 16 (53%) tested positive within 72 hours of birth
- 12 (40%) tested negative at birth and positive at 6 weeks
- 2 with unknown timing of positive test

Timing of Death

- Median time to death was 28 days [IQR 22,134]
- 26% of deaths occurred in the first 28 days of life
- HIV-infected infants were more likely to die than HIV-uninfected infants (23% vs. 2% p<0.0001)

Limitations

- Due to cost/feasibility, we enrolled at the time of delivery and not in pregnancy or prior to pregnancy
  - Women with sick infants may be less likely to enroll and we may have underestimated early mortality
  - We did not measure stillbirths or early pregnancy loses

Conclusions

- **During scale up of an Option B PMTCT Program using Atripla, receipt of maternal ART (compared with receipt of ZDV-alone) was associated with:**
  1. **decreased risk of MTCT**
  2. **increased infant HIV-free survival through 6 months**
- **The benefits of universal ART in pregnancy are likely to outweigh potential risks**

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