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Virological response among HIV infected pregnant and lactating women initiated on Option B + attending the PMTCT program at Mulago Hospital, Kampala, Uganda

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Background

There has been wonderful progress towards the goal of eliminating mother-to-child HIV transmission globally and including in Uganda.

In the pre-intervention era
- More than 90% of new pediatric HIV/AIDS infections attributed to vertical transmission
- Without intervention, the risk of MTCT in breast feeding populations in LMIC ranges from 20% to 45%
- Without treatment including ART about half of these infected children died before their second birthday

Now in the era of Option B+ (ART for life among pregnant and breastfeeding women)
Option B+ is beneficial because it can :
- prevent HIV transmission from HIV positive mother to her infant in current and future pregnancies
- promote health for the HIV+ woman through her life
- prevent HIV transmission to an HIV-negative sexual partner/s

Viral load monitoring:
- provides a direct measure of how well a patient is adhering to and responding to ART
- identifies treatment failure resulting from poor adherence and/or drug resistance
- allows interventions to reduce morbidity, preserve treatment options and reduce vertical and sexual transmission

The increased availability of viral load monitoring allows improved measures of program outcomes
We sought to use viral load data to evaluate Mulago PMTCT program outcomes and assess the effectiveness of our current adherence promotion strategies.

Methods

The PMTCT program at Mulago National Referral Hospital offers:
- ✓ Routine "opt-out" same day HIV testing
- ✓ ART for life to all HIV-infected pregnant and lactating women (option B+) since October 2012

Promotion of adherence includes the following
For ALL clients:
- ✓ Ongoing adherence counseling
- ✓ Pill counts at each visit
- ✓ Peer support

Home visits are also conducted for targeted clients:
- ✓ At initiation if social issues are identified
- ✓ Those missing clinic appointments
- ✓ At client request

In 2014 the Ministry of Health introduced :
- ✓ Quantitative viral load monitoring at 6 months and then every 12 months after initiation of ART
- ✓ Centralised at the Central Public Health Laboratory CPHL)
- ✓ Using the Abbott and Roche platforms (CAP/CPM)
- ✓ Turn-around time for results is around one week

At Mulago Hospital the PMTCT program introduced viral load testing from 1st November 2014
- ✓ All eligible clients (those on ARVs for 6 months or more) were offered viral load testing when they attended the clinic
- ✓ Blood plasma samples were collected and transported to CPHL
- ✓ Results were provided at the next clinic visit (if VL suppression) or clients called for a clinic appointment (if elevated VL)

We reviewed data for PMTCT clients eligible for viral load testing between 1November 2014 and 30 April 2015
Among the subgroup on Option B+ for > 6 months and with viral load test results we report:
- ✓ Virological outcomes at 6,12 and 24 months
- ✓ Immunological outcomes
- ✓ Demographic characteristics

Results

From 01 Nov 2014 to 30 Apr 2015, 1699 viral load tests were conducted among PMTCT clients (including both pregnant and breastfeeding clients)
Of these:
- ✓ 1383 (81.4%) were clients on Option B+
- ✓ 331 (19.5%) initiated on ART prior to option B+ roll-out

Among the 1383 clients on option B+, breakdown by duration of ART was:
- ✓ 199 (14.4%) for ~ 6 months (defined as 4 to 8 months)
- ✓ 381 (27.6%) for ~12 months (defined as 9 to 16 months)
- ✓ 803 (58.1%) for ~ 24 months (defined as > 17 months)

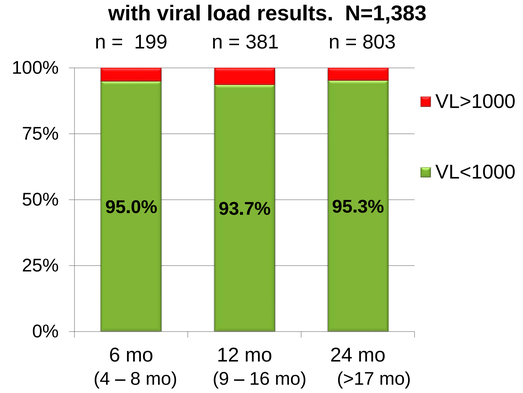
Overall, 1311/1383 (94.8%) clients on option B+ had viral load ≤1000 copies/ml

The number and % of clients with viral load suppression (VL ≤1000 copies/ml) **by duration of Option B+ ART** was:
- ✓ 189/199 (**95.0%**) at ~6 months
- ✓ 357/381 (**93.7%**) at ~12 months
- ✓ 765/803 (**95.3%**) at ~24 months.

Figure 1: Baseline demographic characteristics and CD4 counts by Viral Load result among PMTCT clients on option B+ for > 6 months, N = 1,383

Demographics	VL≤1000 copies/ml n=1,313	VL>1000 copies/ml n= 72
AGE		
- Median age (years)	25	25
- <18 years (no. and %)	32 (100%)	0 (0%)
- >18 years (no. and %)	904 (94.5)	53 (5.5%)
- Missing age (no. and %)	377 (95.2%)	19(4.8%)
PARITY		
- Median parity	1	2
CD4+ at baseline (count/mm^3)		
Median	826	672
Interquartile range (25-75th centiles)	616 - 1014	473 - 844

Figure 2: Virological response at 6, 12 and 24 months post initiation of Option B+ ART among PMTCT clients with viral load results. N=1,383



Conclusions

- ✓ At an extremely busy PMTCT clinic in Uganda's national referral hospital, among pregnant and breastfeeding clients attending for care, it was feasible to integrate viral load monitoring into routine PMTCT services
- ✓ Viral load suppression is very high with an overall 95% with VL ≤ 1000 copies/ml with similar rates observed at 6, 12 and 24 months post ART initiation
- ✓ This compares favorably to other reported virological responses for treatment cohorts and surpasses the UNAIDS 90-90-90 2020 target and suggests that current adherence promotion strategies are effective.
- ✓ However, further program evaluation is required to:
  - ✓ describe virologic and other outcomes among women who did not return to care at this facility
  - ✓ whether this level of virological suppression is sustained over time after cessation of breastfeeding

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