Most Breastfeeding Women with High Viral Load Are Still Undiagnosed in Sub-Saharan Africa

D Maman; H Huerga; I Mukui; B Chilima; B Kirubi; G Van Cutsem; C Masiku; E Szumilin; T Ellman; JF Etard

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David Maman has no financial relationships with commercial entities to disclose
Background:

- Few studies have assessed cascade of care & population viral load among pregnant/breastfeeding (PBF) women

- Key indicators are needed to inform and plan PMTCT programs
Study objectives:

Among pregnant/breastfeeding women:

- Primary objective: To assess population viral load

- Secondary objectives:
  - To assess each step of the cascade of care
  - To assess HIV prevalence
  - To estimate proportion of women infected during pregnancy and breastfeeding
Methods:

- **Surveys’ areas:**
  - Chiradzulu (Malawi) PMTCT **Option B+**
  - Eshowe (KZN, South Africa): PMTCT **Option B**
  - Ndhiwa (Kenya) PMTCT **Option A**

- **Design:** cross-sectional multistage household based surveys

- **Population:**
  - Aged 15-59 years
  - Living in selected households

- **Survey duration:** 13 weeks (Sep 2012 and Nov. 2013)
Methods: Study Procedures

- **Interview head of household**
- **Interview eligible individuals**
- **HIV rapid test (RDT)**
- **Interview HIV positive**
- **Laboratory tests**

**HIV test**
- Positive
  - Questionnaire HIV & ART
    - CD4 count
    - Viral load, Incidence testing: LAg and Biorad
- Discordant
  - ELISA HIV test
- Negative
  - Acute infection testing (NAAT)*

*Only South-Africa and Kenya*
Methods: Definitions

• Infection during pregnancy or breastfeeding was defined as a HIV-positive test among a breastfeeding woman who was unaware of her status and reported a negative HIV test during Ante Natal Care
Results: Inclusion

- 9,802 HH visited $\rightarrow$ 12,461 women eligible $\rightarrow$ 11,550 included and tested (92.7%)

- Proportion of women pregnant or breastfeeding
  - Kenya: 37.8% (1,413/3,760)
  - Malawi: 33.8% (1,444/4,275)
  - South Africa: 12.5% (439/3,515)
## Results: Characteristics

<table>
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<td>22.2% (20.1-24.5)</td>
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Results: Cascade of Care

Figure: Cascade of care among HIV-positive PBF women

<table>
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<tr>
<th>Stage</th>
<th>Kenya (n=295)</th>
<th>Malawi (n=191)</th>
<th>South-Africa (n=102)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linked to Care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On Care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On ART</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>VL&lt;1,000 cp/mL</td>
<td></td>
<td></td>
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</tr>
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Results: Population Viral Load

Proportion with VL<1,000 cp/mL
- Kenya: **27.3%** (95%CI 22.5-32.9)
- Malawi: **72.3%** (95%CI 65.5-78.2)
- South-Africa: **63.4%** (95%CI 54.0-72.3)
## Results

### Table: Distribution of Breastfeeding Women with VL>1,000cp/mL (n=220)

<table>
<thead>
<tr>
<th>Category</th>
<th>% (+95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tested Negative at ANC</td>
<td>37.8% (31.5-44.3)</td>
</tr>
<tr>
<td>Other undiagnosed</td>
<td>20.9% (16.0-26.8)</td>
</tr>
<tr>
<td>Diagnosed but not on ART</td>
<td>27.3% (21.8-33.6)</td>
</tr>
<tr>
<td>On ART</td>
<td>14.1% (10.1-19.4)</td>
</tr>
</tbody>
</table>

**Total Undiagnosed:** 58.6% (52.0-65.0)

**Total Undiagnosed:** 41.4% (35.0-48.0)
Results

Table: Among breastfeeding women reporting negative test at ANC, HIV prevalence

<table>
<thead>
<tr>
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<th>Malawi (n=1,054)</th>
<th>South-Africa (n=264)</th>
</tr>
</thead>
<tbody>
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<td>HIV prevalence</td>
<td>7.4%</td>
<td>2.1%</td>
<td>4.9%</td>
</tr>
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HIV Incidence among Women 15-29 years using Incidence Assays:
- Kenya: 3.8 /100 PY (95%CI: 2.1-5.5)
- Malawi: 0.9 /100 PY (95%CI: 0.1-1.7)
- South Africa: 3.2 /100 PY (95%CI: 1.4-4.9)
Discussion

- Population VL suppression among PBF ranged from 27 to 72%
- The proportion of PBF women undiagnosed was higher where incidence was high suggesting the importance of HIV infection during PBF
- The majority of PBF with VL>1,000 copies/mL were undiagnosed
Discussion

Strengths and limitations:
• Strengths: representative of the population, high inclusion rate
• Limitations: all data were self-reported, no data on infants HIV+ prevalence, low numbers.

Recommendations:
• Implement option B+
• Reduce HIV Incidence among young women (TASP and PREP)
• Diagnose women and their infants where they are!!
  – ANC, Delivery, EPI, Nutrition, Pediatrics
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MSF South Africa
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MoH Kenya
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Ojwang Lusi

MoH Malawi
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