The Effect of Treat-All on People with Advanced HIV Disease in Lesotho

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BACKGROUND

- Advanced HIV disease (AHD), defined as CD4 counts less than 200 cells/^{mm3} or World Health Organization (WHO) clinical stage 3 or 4, increases risk of HIV-related morbidity and mortality.
- Unsuppressed viral load in this group may contribute to HIV forward transmission.
- In 2015, WHO issued guidance to treat all people with HIV (PWH) regardless of clinical stage or CD4 cell count in late 2015.
- In April 2016, Lesotho, the country with the second highest HIV prevalence globally, became among the first countries to adopt the "Treat-All" policy.

We aimed to:

1) Describe population-level changes in AHD following the new policy

2) Examine dynamic and static correlates of AHD in the era of "Treat-All".

METHODS

Using the Lesotho Population-Based HIV Impact Assessment (LePHIA), a multi-stage representative population national survey conducted in 2016-17 and repeated in 2019-20, we;

1. Estimated the weighted prevalence of AHD, defined as CD4<200 cells/mm3, and change in AHD using Jackknife-weighted frequencies.
2. Conducted logistic regression to estimate the odds of demographic and clinical factors associated with AHD at the time of the policy change and after three years.
3. Utilized generalized estimating equations to estimate the average change in AHD and the correlates of change.

Table 1. Weighted Descriptive Statistics by AHD Status

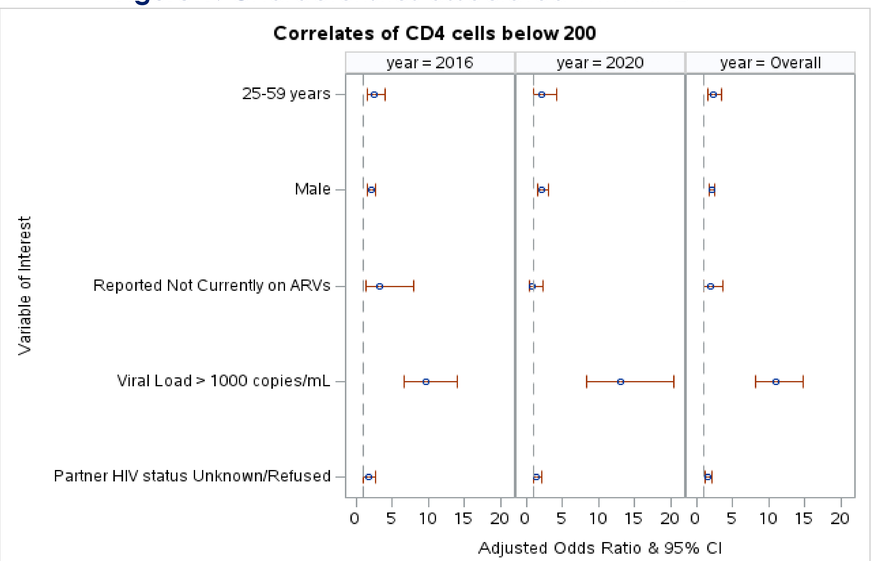
	2016-17		2019-20	
	CD4<200 N=330 (11.46%)	CD4 >=200 N=2829 (88.54%)	CD4<200 N=201 (6.68%)	CD4 >=200 N=3031 (93.32%)
Median Age (IQR)	38 (32-45)	37 (30-45)	37 (32-43)	38 (31-46)
Male Sex	159 (56.98%)	853 (38.85%)	102 (58.18%)	929 (36.78%
Median CD4 Cell Count (IQR)	132 (90-165)	515 (370-692)	147 (105-175)	599 (418-803)
Viral Load Suppression	115 (34.73%)	2074 (71.89%)	74 (36.04%)	2547 (82.98%)
Self-Reported ARV Usage	184 (54.08%)	2088 (71.66%)	128 (63.73%)	2581 (83.86%)
ARVs Detected in blood	183 (54.80%)	2113 (73.12%)	104 (52.39%)	2228 (72.63%)
Sero-Concordant Partnership	86 (28.16%)	955 (34.75%)	98 (49.72%)	1739 (57.94%)

Since Lesotho adopted "Treat-All", the prevalence of self-reported ARV use, viral load suppression, median CD4 all increased by ~20%, and **AHD decreased by over 40%.** Male sex and viral non-suppression increased odds of AHD, after adjustment.

RESULTS

- Among 6,391 PWH (Table 1), 3,159 were in 2016-17, and 3,232 were in the 2019-20 surveys, respectively.
- **The prevalence of AHD was 11.45% in 2016-17, and 6.68% in 2019-20, a 40% decrease (X^2 p =<0.0001).**
- **Comparing 2016-2017 to 2019-2020 survey findings:**
  - Self-reported ARV use increased by 19.98%
  - Viral load suppression increased by 20.6%
  - Median CD4 cell count
    - In 2016-17 was 515 amongst PWH and 132 in those with AHD
    - In 2019-20 was 599 amongst PWH and 147 in those with AHD (a 20.4% increase)
- **Covariates significantly associated with AHD (Figure 1)**
  - Both Surveys:
    - **Male sex**
      - 2016: aOR:2.05 (95% CI: 1.55, 2.70)
      - 2020: aOR:2.14 (95% CI: 1.54, 2.97)
    - **Viral Non-suppression (>1000 copies/mL)**
      - 2016: aOR:9.62 (95% CI: 6.60, 14.03)
      - 2020: aOR:13.01 (95% CI: 8.28, 20.43)
  - **2016-17 ONLY:**
    - **Self-reporting not currently using ART** aOR: 3.30 (95% CI: 1.36, 8.00)
    - **Older age (25-59y)**: aOR:2.44 (95% CI: 1.47, 4.05)

Figure 1. Characteristics associated with AHD



Model is adjusted for: Education, Awareness of HIV status, ARV initiation at diagnosis, ARVs detected, Partner aware of HIV status

CONCLUSIONS

- Since the adoption of the "Treat-All" policy in Lesotho, median CD4 cell count significantly increased and the prevalence of PWH with AHD decreased by > 40% from 2016-2017
- Self-reported usage of ART was no longer associated with increased odds of AHD
- Viral non-suppression remained associated with increased odds of AHD
- **To address AHD, it is important to focus interventions on men, and those with unsuppressed viral load.**

LePHIA

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