

Gender and antiretroviral treatment in lower income countries

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for the ART-LINC Collaboration

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Background

At the end of 2004, there were nearly 18 million women living with HIV/AIDS, representing 45% of the global total of HIV-infected persons, and women and girls make up almost 57% of adults living with HIV in sub-Saharan Africa.

Young women (aged 15-24) are about 3 times more likely to be infected than men of the same age, and this risk increases even further in some countries such as Zambia and Zimbabwe, where young women are up to 6 times more likely to be infected than men of the same age.

Gender inequalities may affect women's access to and interaction with health services and access to treatment, because of difficulties in accessing transport and childcare, or because they may be more dependent on publicly funded clinics which often have longer waiting times.

Objective

The objective of this analysis was to describe the effect of gender on response to treatment within the first year of HAART in low-income countries.

Methods

Study Population:

The ART-LINC Collaboration

The Antiretroviral Therapy in Lower Income Countries (ART-LINC) Collaboration is a multinational collaborative observational operational cohort study. There were 18 centres in 16 countries in Africa, Brazil, India, and Thailand who contributed data to this analysis.

Included in the analysis were all individuals aged at least 16 years, with known gender, baseline CD4, date of HAART initiation, and at least one follow-up visit.

The definition of anemia for women is <12 g/dl, and <13 g/dl for men.

The definition of AIDS was CDC Stage C or D, or WHO Stage 3 or 4.

Outcome Measures:

- > CD4 increase at 6 months (continuous)
- > All-cause mortality at one-year.

Statistics:

- > CD4 outcome: Multi-level mixed effects linear regression (random effect on cohort)
- > Mortality: Multi-level random effects survival model, stratified by gender (adjusted for cohort heterogeneity)
- > Explanatory variables considered: type of regimen (NVP-based vs. PI-based), age, baseline CD4, disease stage and AIDS diagnosis at baseline, presence of anemia at baseline, and program level factors including access to free treatment, type of clinic (public vs. NGO vs. private for profit).

Results

There were 5414 individuals eligible for this analysis, including 2711 women (50%) and 2703 men. The distribution of gender by region is presented in Figure 1.

After 6 months of HAART, women had an average CD4 increase of 109 cells/ μ L (41 – 185) compared to men, of 90 cells/ μ L (33 – 165).

Figure 1. Proportions of women and men receiving antiretroviral treatment by region in the ART-LINC Collaboration

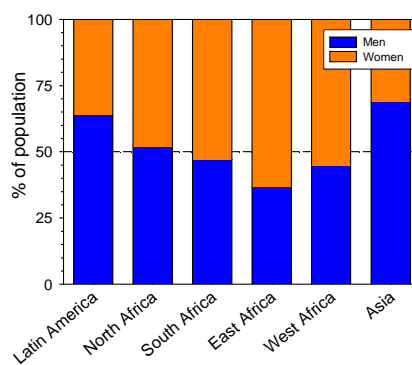
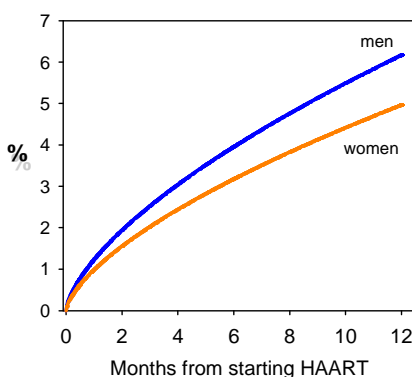


Table 1. Sociodemographic and clinical characteristics of women vs. men at HAART initiation, adjusted only for cohort

	Women n=2711 (50%)	Men n=2703 (50%)	P-Value
Age (median, IQR)	34 (29 – 40)	38 (33 – 44)	<0.001
Treatment naïve at HAART start	2521 (93%)	2406 (89%)	0.95
Anemic at HAART start	985/1318 (75%) (among those with hemoglobin data)	675/1142 (59%) (among those with hemoglobin data)	<0.001
Baseline CD4 (median, IQR)	118 (40 – 219)	106 (35 – 212)	<0.001
AIDS at baseline	984/1482 (66%) (among those with clinical stage at baseline)	443/1075 (71%) (among those with clinical stage at baseline)	0.028

P-values are adjusted for cohort; proportions and medians not.

Figure 2. Estimated cumulative mortality at 12 months among individuals receiving HAART in ART-LINC, by gender



Results (continued)

The hazard of mortality for women vs. men, adjusted only for cohort heterogeneity, is 0.80 (0.59 – 1.08), $p=0.14$.

After adjustment for age, baseline CD4, type of HAART regimen, and cohort, the hazard of mortality for women vs. men was 0.96 (0.69 – 1.32), $p=0.78$, suggesting that there is no difference in mortality after 1 year between men and women.

Conclusions

These data suggest that equal proportions of men and women are receiving antiretroviral treatment in the ART-LINC collaborating centres, although this varies considerably by region.

In spite of sociodemographic and clinical differences at baseline, these data suggest that women and men have similar mortality after one year on HAART.

The Antiretroviral Therapy in Lower Income Countries (ART-LINC) Collaboration

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