Mortality differences after ART initiation in HIV-positive women from Europe, the Americas and Sub-Saharan Africa; 2000-2014

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Introduction

- Women account for over half of the 36.7 million persons estimated to be living with HIV worldwide in 2016.
- Access to health care and life-saving antiretroviral therapy (ART) varies greatly across regions and depends on both structural and individual factors.
- HIV-positive women, globally, differ in their age distribution, HIV transmission routes, socio-economic status, gender roles and viral and tuberculosis co-infection rates.

Objective

To estimate all-cause mortality after ART initiation, and by duration of ART use, among women living with HIV in Europe, the Americas and Sub-Saharan Africa up to 48 months after ART initiation.

Methods

Setting and data sources

- Forty observational cohorts and cohort collaborations from COHERE (Collaboration of Observational HIV Epidemiological Research in Europe) in EuroCoord.

Study population

- Antiretroviral-naive women, infected through injecting drug use or sex between men and women, aged 18-80 years old at ART initiation who started their first ART regimen between 1st January 2000 and 31st December 2014.
- Only in North America were participants required to have a second visit within 12 months of enrolment.
- We excluded women from the Asia-Pacific region (N=849), Mexico (N=100) and Argentina (N=545).

Table 1. Mortality rate ratios (95% CI) compared to Europe by duration on ART

<table>
<thead>
<tr>
<th>Region</th>
<th>6-12 mo</th>
<th>12-24 mo</th>
<th>24-36 mo</th>
<th>36-48 mo</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Africa</td>
<td>1.00</td>
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<tr>
<td>West Africa</td>
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<tr>
<td>South Africa</td>
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<tr>
<td>South America</td>
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<tr>
<td>Central America and Caribbean</td>
<td>1.00</td>
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</tbody>
</table>

Ascertainment of mortality

Cohort linkages with mortality registries were reported in South America, North America, South America and some sites in Europe, and systematic sample tracing of losses to follow-up was conducted in East Africa. Mortality ascertainment data from East Africa were used to correct under ascertainment in West Africa.

Statistical methods

- Data-contributing regions were categorized as Europe, East Africa, West Africa, Southern Africa, South America, North America, and Central America and the Caribbean.

Results

Women’s characteristics

190,175 women:
- 47% East Africa, 19% South Africa, 16% Europe, 13% West Africa, 3% North America, 2% Central America/Caribbean, 1% South America

Age at ART initiation ranged from 33 years in South Africa to 40 years in North America.

Proportion of injecting drug users highest in North America (18%) and Europe (7%).

Proportion of women from black race/ethnicity highest in North America (63%) than in Europe (26%), largely migrants from Sub-Saharan Africa.

CD4+ T-cell counts at ART initiation close to 250 cells/mm3 in Europe and North America, 141 cells/mm3 in South Africa and 170-190 cells/mm3 in other regions

Conclusions

- Global variations in all-cause mortality in HIV-positive women initiating ART show distinct geographical patterns for short-, mid- and long-term mortality that may inform context-specific interventions.
- The highest mortality was observed in HIV-positive women living in Central America and the Caribbean and Sub-Saharan Africa, who also had the lowest CD4+ T-cell counts at ART initiation. The lowest mortality was reported in women living in Europe, who had, together with women from North America, the highest CD4+ T-cell counts at ART initiation.
- Mortality was highest in the first three months after ART initiation in all regions, except for North America where it was not evaluable due to cohort eligibility criteria, and decreased from then onwards to reach stable rates from the first until the fourth year following ART, where inter-regional differences become less remarkable.

Figure 1. Crude Mortality Rates per 100 persons-years

Duration on ART in months

0 3 6 12 18 24

References