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Background

- Toxicities, virologic failure or problems with the supply of drugs may require changes to HAART regimens in resource limited settings.
- Little information exists on the rate and nature of treatment changes in these settings.
- A collaborative network of ART treatment programmes in lower income settings was established to address this and other questions.

Objective

- To describe the first change to the initial HAART regimen in HIV-1 infected patients treated in lower-income countries.

Methods

Study Population: *The ART-LINC Collaboration*

- The Antiretroviral Therapy in Lower Income Countries (ART-LINC) Collaboration is an international collaboration of treatment programmes in lower-income countries (see www.art-linc.org) and part of the International epidemiological Databases to Evaluate AIDS (IeDEA) initiative (www.iedea-hiv.org).^{1,2}
- Anonymous data are pooled and analysed centrally. At all sites institutional review boards had approved the collection of data.
- The present analysis was based on the 2004 database, which includes information on patients starting HAART in 18 programmes in Africa, Brazil, India and Thailand.
- Eligible patients were aged 16 years or older, previously treatment-naïve, started HAART with at least 3 antiretroviral drugs, and had a baseline CD4 cell count and at least 6 months of follow up.

Statistical Analysis

- We analysed all changes to the initial regimen:
 - Change from NNRTI-based regimen to PI-based regimen
 - Substitutions in NNRTIs or PIs
 - Substitutions in NRTI backbone
- Results are expressed as number of changes (%).

Results

Study Population

- 3409 patients were eligible and included in analyses.
- The median length of follow up was 1.5 year (IQR 1.0 to 2.5 years).
- 2384 patients (70%) started with an NNRTI-based regimen, 831 (24%) with a PI-based regimen.
- NNRTI-based regimens included Nevirapine in 58% and Efavirenz in 40%.
- PI-based regimens included Indinavir (50%), Nelfinavir (28%), or Saquinavir (8%). Boosted PIs were used in 11%.
- The most common NRTI backbones were D4T-3TC (48%), AZT-3TC (36%) or D4T-DDI (9%).

Switching of regimens

- Switching of regimens during follow up was rare:
 - 45 patients (1.3%) switched from a NNRTI-based regimen to a PI-based regimen
 - 30 patients (0.9%) switched from a NNRTI-based regimen to a PI-based regimen
 - 55 patients (1.6%) switched to dual therapy
 - 51 patients (1.5%) switched to monotherapy.

Single substitutions

- Single substitutions in the NRTI backbone were recorded in 93 patients (2.7%). The most common substitutions were:
 - D4T-AZT to AZT-3TC (27 patients)
 - AZT-3TC to D4t-3TC (25 patients)
 - AZT-DDI to AZT-3TC (10 patients).

Replacement of NRTI backbone

- Replacements of the NRTI backbone were recorded in 76 patients (2.2%). The most common replacements were:
 - AZT-3TC to D4T-DDI (19 patients)
 - D4T-DDI to AZT-3TC (18 patients)
 - AZT-DDI to D4T-3TC (14 patients).

Discussion & Conclusions

- Changes to first-line HAART regimens are rare in lower income countries.
- A recent comparison of the Swiss HIV Cohort Study with two South African cohorts (Khayelitsha and Gugulethu, Cape Town) showed that at two years the cumulative percent of patients with any change to the first line regimen was 60% in Switzerland and 33% in South Africa.³
- The same study showed that virologic and immunologic response to HAART was similar.
- These differences may be explained by the limited number of available HAART regimens in lower income settings.
- In many settings the lack of viral load monitoring may also contribute to low rates of treatment changes.

ART-LINC: The Antiretroviral Therapy in Lower Income Countries Collaboration

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Figure – Location of ART-LINC sites



References

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