

Virological failure, drug resistance and third-line regimen requirements among patients receiving second-line ART in 3 HIV-programs in Kenya, Malawi and Mozambique

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Background

The number of patients receiving second-line antiretroviral treatment (ART) is increasing in resource-limited settings. We assessed virological response and second-line drug-resistance in three HIV-programmes to evaluate patient outcomes and support forecasting of effective third-line drugs.

Methods

Between November 2014 and December 2015, patients aged ≥ 5 years receiving a standard second-line regimen for ≥ 6 months were recruited in three HIV outpatient-clinics supported by Médecins Sans Frontières in Kenya, Malawi and Mozambique. Viral load (VL) was quantified and resistance-genotyping performed if VL ≥ 500 HIV RNA copies/ml.

Results

Overall 802 patients were included (median age 41 years, 45% male). Kenya: among 355 participants 18% (65/355) had VL ≥ 500 copies/ml, 17% ≥ 1000 copies/ml. Among ≤ 19 years old, 31% (20/64) had ≥ 500 copies/ml. Twenty-five-percent of those with ≥ 500 copies/ml (16/65) had major PI-resistance, 72% major NRTI-resistance, 80% major NNRTI-resistance. Seventeen (26%) needed replacement of ineffective NRTIs, 20 (31%) required switching to a third-line regimen (major PI-resistance), including 3 children needing pediatric formulations. After six months on third-line 77% (10/13) had undetectable VL. Malawi: among 242 participants 17% had VL ≥ 500 copies/ml and 13% ≥ 1000 copies/ml.

Among ≤ 19 years old, 29% (10/34) had VL ≥ 500 copies/ml. Genotyping indicated 3% major PI-resistance, 78% major NRTI-resistance, 84% major NNRTI-resistance. Seven patients required switching to third-line, 12 needed NRTI-replacement. Mozambique: among 205 participants, 28% had VL ≥ 500 copies/ml, 27% ≥ 1000 copies/ml. Among ≤ 19 years, 62% (10/16) had VL ≥ 500 copies/ml. Twenty patients need a third-line regimen.

Conclusions

Overall virological suppression was good among patients receiving second-line ART. Failure rates were notably higher among children and adolescents, highlighting the need for enhanced monitoring. Resistance data were essential to inform optimal regimen choice. Preliminary results indicate good short-term outcomes of patients on third line ART. Increased access to resistance genotyping and affordable salvage ARVs, including pediatric formulations, is needed.

The number of patients receiving second-line antiretroviral treatment is increasing in resource-limited settings. Better access to resistance genotyping and affordable salvage ARVs, including pediatric formulations, is urgently needed.