

# Heavily treatment-experienced (HTE) patients with multidrug-resistant HIV infection: population characteristics, treatment strategies, and clinical outcomes

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## Background

Heavily treatment-experienced (HTE) patients are characterized by a history of exposure to numerous antiretroviral (ARV) regimens and have exhausted multiple treatment options due to the development of resistance, the presence of drug-drug interactions, or intolerance to therapies.

## Materials and methods

This is a single-center retrospective observational study. 50 HTE patients attending our center were recruited, of which 15 with HIV infection resistant to 4 classes of ARV drugs and 35 with HIV resistant to 3 classes of ARV drugs.

## Results

The patients involved in this study have a mean age of 58 years, are 84% male and 12% with congenital infection. 34% developed at least one AIDS defining event, and 44% report a history of treatment dropouts. On average, these patients experienced 13 different ARV regimens and 20% presented intolerance to at least one agent.

Regarding the viral resistance patterns, 100% are resistant to lamivudine, first-generation non-nucleoside reverse-transcriptase inhibitors (NNRTIs), and first-generation protease inhibitors (PIs). Resistance to tenofovir occurs in 90% of patients, to second-generation NNRTIs in 52.9%, and to second-generation PIs in 58.1%. Finally, among patients with resistance to 4 classes of ARV drugs, 53.8% show resistance to second-generation integrase inhibitors (INSTIs) (Figure 1).

During their clinical history, 14 patients have been treated with maraviroc, 4 with enfuvirtide, 1 with fostemsavir, and 2 with ibalizumab.

On average, the current treatment regimen has been ongoing for 7 years. In 40% of patients, this consists of boosted PI + INSTI.

Currently, 80% of the enrolled patients have adequate immuno-virological status, with a median CD4+ cell count of 664 cells/mm<sup>3</sup> and undetectable viral load in 84% of cases. This finding is consistent with data reported in scientific literature [1].

**Conclusions** HTE patients have a high risk of unfavorable immuno-virological and clinical outcomes, so it is necessary to ensure careful follow-up and appropriate optimization of treatment strategies.

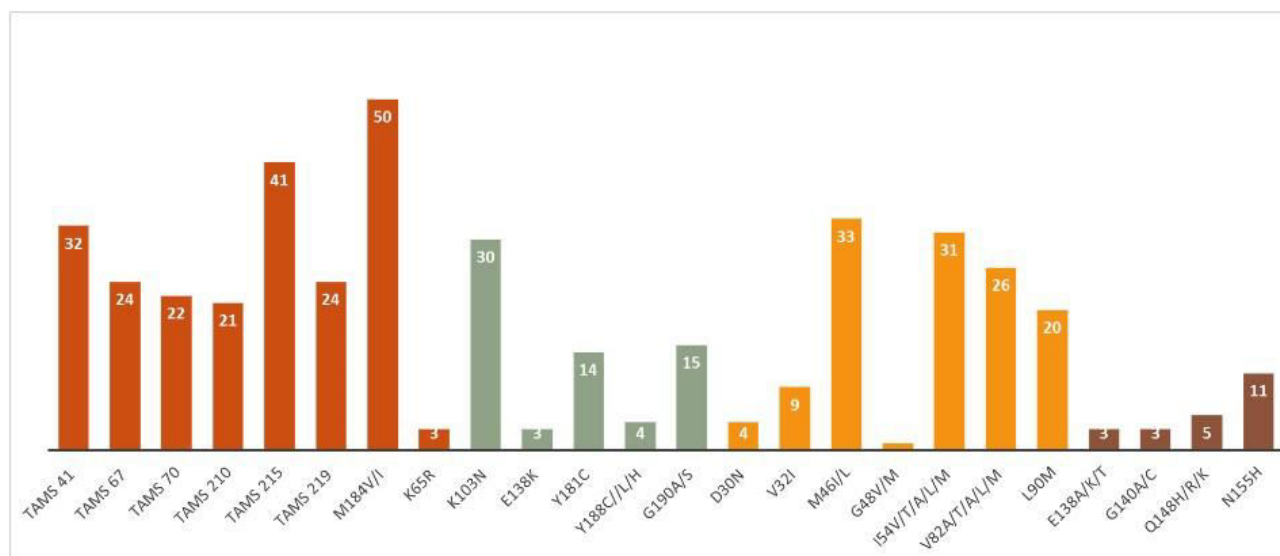


Figure 1. Resistance-conferring mutations reported among the enrolled patients (n=50)

## References

- Hsu RK, Fusco JS, Henegar CE, Vannappagari V, Clark A, Brunet L, Lackey PC, Pierone G Jr, Fusco GP. Heavily treatment-experienced people living with HIV in the OPERA® cohort: population characteristics and clinical outcomes. BMC Infect Dis. 2023 Feb 13;23(1):91. doi: 10.1186/s12879-023-08038-w. PMID: 36782125; PMCID: PMC9926692.