

Feasibility of 3TC/DTG as a first-line strategy in the setting of rapid ART initiation: a retrospective study from the Pisan Cohort

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Introduction

- European guidelines recommend dual therapy (DT) with lamivudine (3TC) and dolutegravir (DTG) as a first line antiretroviral regimen (ART) in treatment-naïve people with HIV (PWH) as a first choice in selected cases [1].
- The number of ART-naïve PWH who could benefit from this regimen is yet to be established and might differ from centre to centre, depending on the site-specific prevalence of risk factors contraindicating such approach.
- In our study, we aimed to find how many ART-naïve PWH could have started ART with DT in our centre, according to the indications reported in most recent guidelines.

Study Design

- We retrospectively reviewed baseline clinical records of patients with a new diagnosis of HIV infection in Pisa University Hospital from 01/01/2015 to 31/01/2024.

Methods

- Demographic and clinical characteristics were retrieved and comparatively analysed. In particular, we focused on detecting the presence of risk factors contraindicating a DT start in naïve PWH [i.e. AIDS-defining conditions at HIV infection diagnosis, baseline serum HIV-RNA, CD4+ cell count, HBV co-infection (HBsAg positivity and/or anti-HBc positive serostatus), detection of mutations associated with resistance (RAMs) to NRTIs, and recent HIV infection defined as undetectability of p31 band on Western-Blot immunoassay].
- Contraindications to DT were grouped into 2 models with different eligibility criteria for DT.
- In model 1, PWH were considered not eligible for DT in the presence of at least one among the following factors: current AIDS-defining condition at HIV diagnosis, serum HIV-RNA > 500,000 cp/mL, CD4+ count < 200 cells/mm³, positive HBsAg and/or anti-HBcAg serostatus, any resistance-associated mutation (RAM) to NRTIs at pre-treatment genotypic resistance test and recent HIV infection (as defined by the absence of anti-p31 at Western-blot immunoassay).
- Model 2 differed from the previous one for the exclusion of low nadir CD4+ cell count and anti-HBcAg positive serostatus and only considered RAMs to 3TC.

- For each model, a logistic regression analysis with stepwise backward selection of variables was conducted to identify independent predictors of contraindication to 3TC/DTG (only variables associated with the presence of at least one factor contraindicating 3TC/DTG at a p-value < 0.100 were retained in the multivariable model).

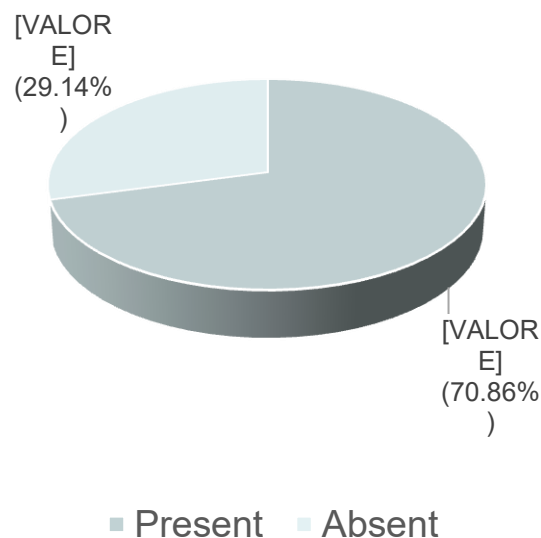
Results

- A total of 151 patients were included. Median age in our population was 42.2 years (18.1-74.7), most patients (126, 83.4%) were male, and of Caucasian descent (111, 73.5%). Risk factors for HIV infection were balanced between at risk heterosexual intercourse (60, 39.7%) and males-who-have-sex-with-males (MSMs) (79, 52.3%).
- Positive HBsAg serostatus was detected in 6 (3.9%) people, whereas anti-HBcAg positivity without anti-HBsAg was found in 8 (5.3%).
- Sixty-nine (45.7%) patients had a CD4+ count < 200 cells/uL at baseline.
- Forty-two (27.8%) had HIV-RNA > 500,000 HIV-RNA cp/mL.
- Twenty-two (14.6%) were diagnosed with an AIDS-defining condition.
- Resistance to any NRTI was detected in 24 (15.9%) patients, while resistance to 3TC was present in 1 (0.7%) patient.

MODEL 1.

- The presence of at least one risk factor considered in model 1 was found in 107 (70.9%) PWH (see Figure 1).

Figure 1. Model 1 (AIDS event, HBsAg+ and occult HBV, any RT mutation, CD4 < 200/μL, HIV-RNA > 500k, absence of p31).

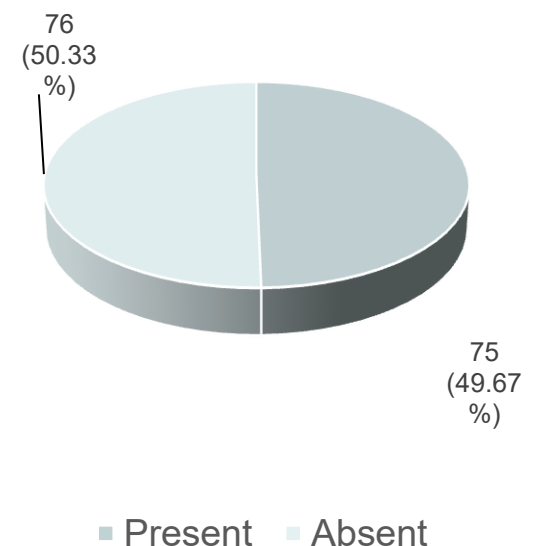


- Older age at diagnosis (> 40 versus < 40 years-old, aOR 3.50, 95% CI 1.56-7.85; p=0.002) and Caucasian ethnicity (versus others, aOR 2.41, 95% CI 1.02-5.69; p=0.044) predicted the ineligibility to DT, whereas being MSM (versus other risk factor for HIV, aOR 0.49, 95% CI 0.21-1.11; p=0.087) showed a trend for reduced risk of finding any contraindication to DT.

MODEL 2.

- The presence of at least one factor considered in model 2 was found in 75 (49.7%) PWH (see Figure 2).

Figure 2. Model 2 (Only AIDS event, HBsAg+, 3TC resistance mutation, HIV-RNA > 500k, absence of p31).



- For model 2, no predictor of contraindications to DT could be found.

Conclusions

- Zenith HIV-RNA and late presentation were the most frequent factors potentially affecting the feasibility of 3TC/DTG in our setting.
- Socio-demographic characteristics could help identify ideal candidates for a rapid DT initiation, that could be invaluable for a relevant proportion of naïve PWH.

Reference