Uptake and Effectiveness of Two-drug Compared to Three-drug Antiretroviral Regimens among HIV-positive Individuals in Europe


University College London, UK; *Chalmers University of Technology, Gothenburg, Sweden; **ROVIDS, University Hospital of Care, Copenhagen, Denmark; ***University Hospital School of Medicine, Belgrade, Serbia; *Hospital Ramon y Cajal, Madrid, Spain; **Vilnius University Hospital, Lithuania; **Vilnius University Hospital, Lithuania; **Novgorod Centre for AIDS Prevention and Control, Russia; **Kaplan Medical Center, Rehovot, Israel; **Hospital JM Ramos Mejia, Buenos Aires, Argentina; **Hospital Ramon y Cajal, Madrid, Spain; **ViiV Healthcare, RTP, North Carolina, USA.

BACKGROUND

Although two-drug antiretroviral regimens (2DR) have been assessed in several randomized controlled trials, there is little information on uptake and outcomes of these regimens in routine clinical practice[6]. We investigated the use of 2DR in the EuroSIDA cohort[7].

METHODS

- **Study population:** Individuals who started a 2DR containing darunavir/rr, lopinavir, raltegravir, dolutegravir, or elvitegravir, and those who started a 3-drug regimen (3DR) with one of these antiretroviral drugs (ARVs), between 1/7/2010 and 12/11/2016.
- **Virological response** was defined using the FDA snapshot algorithm at 6 or 12 months after starting the ARV regimen (treatment failure: viral load (VL) ≥400 copies/ml or no VL at 6 or 12 months ±16 weeks, change of ARV regimen, AIDS or death).
- **Immunological response** was defined as a 100 cell/µl increase or as a 25% increase in CD4 count at 12 months ±16 weeks.

RESULTS

1. Characterisation of ART regimens used

423 individuals started a 2DR after 01 July 2010, and 4347 started a 3DR consisting of two NRTIs and an anchor drug. The regimens used are summarised in Figure 1.

2. Uptake of 2DR

Characteristics of individuals on 2DR or 3DR are shown in Table 1. Compared to those starting a 3DR, those on 2DR tended to be older, have higher CD4 counts and controlled VL, and were more treatment-experienced, with higher cumulative responses (increases in CD4 T cell numbers) were similar for 2DR and 3DR (Figure 2) and logistic regression modelling showed similar odds of a virological or immunological response for individuals on 2DR and 3DR (Figure 4).

3. Effectiveness of 2DR

Outcomes were assessed in individuals with 6 or 12 months follow-up available. More than 93% of individuals with data available had a controlled VL or 6 months after starting their 2DR or 3DR. Virological responses by the FDA snapshot algorithm and immunological outcomes (increases in CD4 T cell numbers) were similar for 2DR and 3DR (Figure 3) and logistic regression modelling showed similar odds of a virological or immunological response for individuals on 2DR and 3DR (Figure 4).

CONCLUSIONS

2DR were largely used by individuals with well-controlled viremia and high CD4 counts who tended to be older and have more comorbidities. Virological and immunological outcomes were in line with results from clinical trials and suggest immunological and virological responses to 2DR were similar to 3DR, although confounding by indication cannot be excluded.

The EuroSIDA Study Group: [http://www.chip.dk]

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