Effect of dolutegravir in combination with NRTI in HIV-1-infected individuals with pre-existing NRTI-mutations

Erik Sörstedt1, Christina Carlander2, Leo Flamholc3, Bo Hejedeman4, Veronica Svedhem-Johansson5, Anders Sönnerborg5, 6, Magnus Gisslén1, Aylin Yilmaz1

1Department of Infectious Diseases, Institute of Biomedicine, Sahlgrenska Academy, University of Gothenburg, Sweden; 2Centre for Clinical Research, County Hospital Västerås, Sweden; 3Department of Infectious Diseases, Malmö University Hospital, Sweden; 4Department of Clinical Science and Education, Södersjukhuset, Karolinska Institutet and Unit of Infectious Diseases / Venhålsan, Sweden; 5Department of Infectious Diseases, Karolinska Institute, Karolinska University Hospital, Sweden; 6Department of Clinical Microbiology, Karolinska Institute, Karolinska University Hospital, Sweden.

Background

People living with HIV (PLWH) with nucleoside reverse transcriptase inhibitor (NRTI) resistance mutations have had few other options than regimens based on ritonavir-boosted protease inhibitors (PI/r) until the introduction of dolutegravir.

The aim of this study was to analyse the treatment results for PLWH on dolutegravir and 1–2 NRTIs with pre-existing NRTI-mutations. Our hypothesis was that dolutegravir, in combination with NRTIs constitutes a safe treatment option despite the presence of NRTI-mutations.

Methods

All adult Swedish PLWH on treatment with dolutegravir and 1–2 NRTIs > 4 weeks and with pre-existing NRTI-mutations were retrospectively identified from the national InCare HIV database. As controls we included PLWH on PI/r and 1–2 NRTIs, matched according to Genotypic Susceptibility Score (GSS). Median CD4 was 473/570 µL among participants/controls and HIV RNA < 1.30 copies/ml in both groups.

Viral failure was defined as an HIV RNA increase from a previously suppressed level (< 50 copies/mL) to > 200 copies/mL for treated participants or never suppressed to < 50 copies/mL for naive individuals or those starting treatment after an interruption.

Results

In total, 197 participants (median age 50 years, 62% male) and 197 controls were included. Median observation time for participants was 35 weeks (interquartile range (IQR) 21–54) and 229 (108–308) weeks for controls.

Five participants and seven controls had viral failure resulting in success rates of 97.5% and 96.4%, respectively. The most prevalent pre-existing NRTI mutations were at positions M184 (27% of all samples), T215 (12%), and D67 (10%). Median (IQR) GSS was 2 (1.5–3.0) for both participants and controls.

Conclusions

Dolutegravir in combination with 1–2 NRTIs was as efficient as PI/r in individuals with pre-existing NRTI mutations. Even though follow-up was shorter for participants on dolutegravir than PI/r, we consider dolutegravir a favourable alternative to PI/r-based antiretroviral therapy also in the presence of NRTI-resistance.

For additional information, please contact:
Erik Sörstedt
erik.sorstedt@vgregion.se