Using Climate-HIV to Describe Real-World Clinical Outcomes for People Living With HIV on Dolutegravir-Based Regimens (DBRs)

P134

Chinyere Okoli,[1] Achim Schwenk,[2] Matthew Radford,[1] Melissa Myland,[3] Steve Taylor,[4] Justine Barnes,[4] Ashini Fox,[5] Alison Darley,[5] Fiona Grimson,[3] Iain Reeves,[6] Sajid Munshi,[6] Adam Croucher,[6] Naomi Boxall,[3] Alistair Paice,[1] Jean van Wyk,[1] Paul Benn[1]

[1]ViiV Healthcare, London, UK; [2]North Middlesex University Hospital NHS Trust, London, UK; [3]IQVIA Real World Insights, UK & Ireland, London, UK; [4]Birmingham Heartlands HIV Service, Department of Infection and Immunology, Birmingham Heartlands Hospital, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK; [5]Nottingham University Hospitals NHS Trust, Nottingham, UK; [6]Homerton University Hospital NHS Foundation Trust, London, UK

Introduction

- Dolutegravir (DTG)-based regimens (DBRs) are first-line therapy in international HIV treatment guidelines[1]
- Review of the effectiveness and safety of DBRs in real-world cohorts is important to assess outcomes in diverse patient populations

Objective

- To describe the real-world use, effectiveness, and safety of DTG in routine clinical practice in the United Kingdom

Methods

- Retrospective analysis using data pooled from 4 National Health Service trusts in England using the electronic care record system, Climate-HIV
- Patients aged ≥18 years prescribed a DBR from Dec 2012 to Feb 2018 were included
- Data were collected from the initiation of the DBR until the last recorded visit (ie, until patients were lost to follow-up, switched to another regimen, died, or discontinued DTG)
- Data regarding demographics, antiretroviral regimens, virologic outcomes, and reasons for switch were summarized with descriptive statistics

Results

Patient Characteristics

Table 1. Patient Characteristics

Variable	Overall cohort (N=934)
Sex, n (%)	
Male	597 (64)
Female	337 (36)
Age, n (%), y	
<50	667 (71)
≥50	267 (29)
Race/Ethnicity, n (%)[a,b]	
White	414 (47)
Black African	305 (34)
Black Caribbean/Other	87 (10)
Asian	42 (5)
≥1 Ethnicity/Race	42 (5)
Age, median (IQR), y	43 (34-51)
Treatment naive, n (%)	217 (23)
Treatment experienced, n (%)	717 (77)

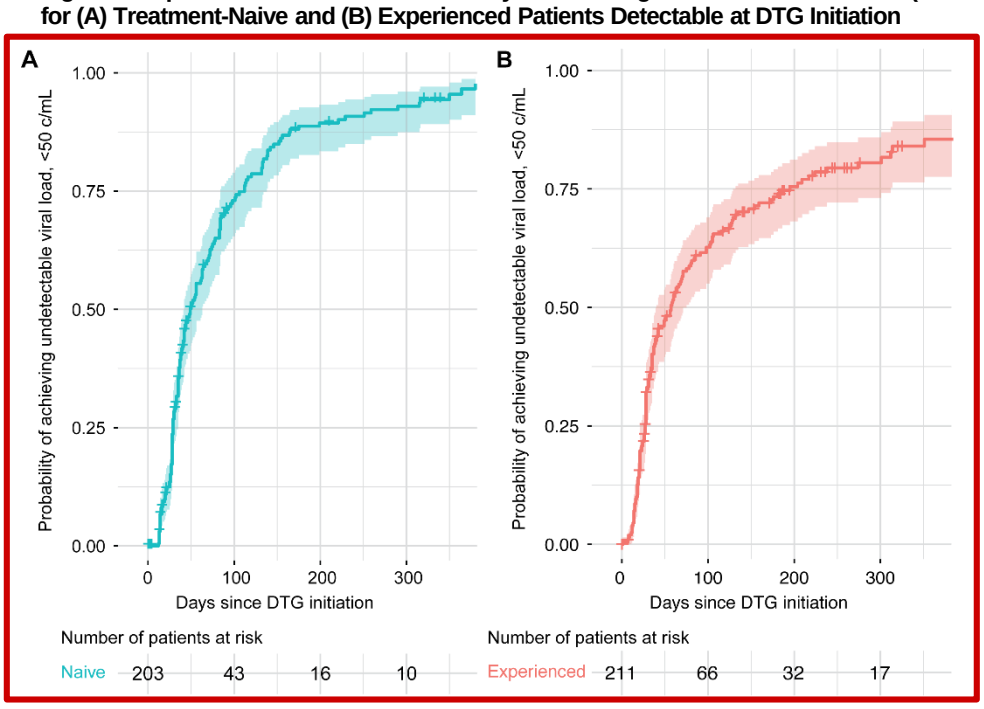
IQR, interquartile range. [a]N=890. [b]Percentages do not sum to 100 due to rounding.

- The majority of patients were receiving once-daily DTG (880/934 [94%]), with DTG/ ABC/3TC (n=533 [61%]) and DTG + TDF/FTC (n=178 [20%]) being the most commonly prescribed DBRs

Efficacy

- At the final record/last visit, 809/934 (87%) patients remained on DBRs for a median follow-up of 377 days (interquartile range [IQR], 131-683)
- Among 809 patients still on DBRs, 681 (84%) had an undetectable viral load (<50 c/mL) in general, similar findings were observed across subgroups
- In patients with detectable viral load at DTG initiation (n=414), Kaplan–Meier analysis indicated median time to viral load <50 c/mL of 49 days (95% confidence interval [CI]: 42-63) for treatment-naive (TN) patients and 57 days (95% CI: 40-75) for treatment-experienced (TE) patients (Figure 1)
- The probability of achieving undetectable viral load (<50 c/mL) at 48 weeks was 96% (95% CI: 90-98) for TN patients (Day 350) and 86% (95% CI: 78-91) for TE patients (Day 351; Figure 1)

Figure 1. Kaplan–Meier Curves for Probability of Achieving Undetectable Viral Load (<50 c/mL) for (A) Treatment-Naive and (B) Experienced Patients Detectable at DTG Initiation



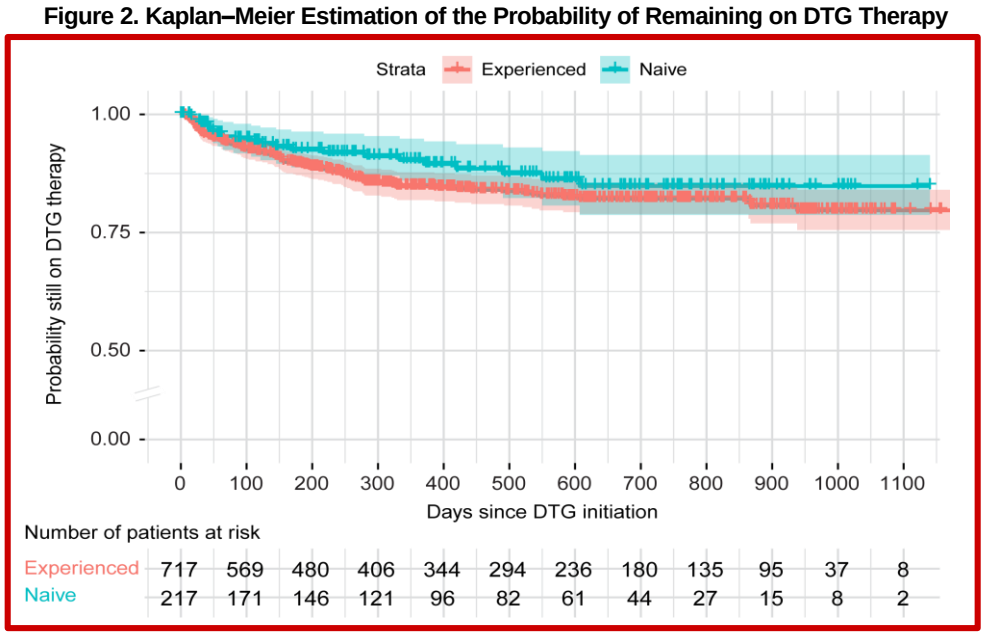
Patients censored at end of DTG therapy, end of follow-up, or end of study period. DTG, dolutegravir.

- Median (IQR) log decreases in viral load were 4.4 (3.7-5.1) for TN patients (n=184) and 2.5 (1.7-4.0) for TE patients (n=208)
- Median (IQR) increase from index in CD4 count was 182 cells/mm^3 (74-325) for TN patients and 40 cells/mm^3 (−51 to 140) for TE patients
- 60 patients (6%; 22 [10%] TN and 38 [5%] TE) experienced virologic failure defined as viral load ≥50 c/mL with subsequent measurement ≥200 c/mL in patients who were previously undetectable
  - Among 7 tested patients who switched/discontinued DTG, there were no cases of nucleoside reverse transcriptase inhibitor (NRTI)– or integrase strand transfer inhibitor (INSTI)–emergent resistance
  - 3 patients switched treatment due to virologic or CD4 cell count failure, as recorded by their clinician in Climate-HIV

Persistence

- Persistence of DBRs was 90% for TN and 86% for TE over a median of 362 and 385 days, respectively (Figure 2)

Figure 2. Kaplan–Meier Estimation of the Probability of Remaining on DTG Therapy



DTG, dolutegravir. Patients censored at end of follow-up or end of study period.

Discontinuations and switches

- 31 patients (3%; 8 TN and 23 TE) discontinued DBRs and did not start new antiretroviral treatment 3 months after treatment supplies finished these individuals were categorized as lost to follow up.
- 94 patients (10%; 14 TN and 80 TE) switched to non-DBRs
  - 16 patients (1.7%) switched treatment due to an adverse event (AE)

Table 2. Reasons for Switch From a Dolutegravir-Based Regimen to Another Regimen

Reason for switch, as per CLIMATE dropdown list n (%)	Patients who switched (n=94)	Treatment naive (n=14)	Treatment experienced (n=80)
Adverse event	16 (17)	5 (36)	11 (14)
Clinician decision	15 (16)	5 (36)	10 (13)
Cost reduction	13 (14)	0 (0)	13 (16)
Patient-related decision	7 (7)	1 (7)	6 (8)
Both CD4 count and viral load failure	3 (3)	0 (0)	6 (8)
Simplification	4 (4)	1 (7)	3 (4)
Other	4 (4)	0 (0)	4 (5)
Resistance	1 (1)[a]	0 (0)	1 (1)[a]
Missing data	28 (30)	2 (14)	26 (33)

[a]1 resistance mutation was reported at baseline.

Conclusions

- DBRs showed high levels of virologic suppression and low rates of discontinuation in a large, diverse, UK-based HIV population
- The reported AEs leading to discontinuation were low at 1.7%
- In the overall population, no INSTI- or NRTI-emergent resistance was detected among individuals who switched off DBR or who had reported virologic failure
- These real-world findings are broadly consistent with safety and efficacy data from phase III clinical studies[2-6]

Acknowledgments: This study was funded by ViiV Healthcare. Editorial assistance and graphic design support for this poster were provided under the direction of the authors by MedThink SciCom and funded by ViiV Healthcare.

References: 1. World Health Organization. http://www.who.int/hiv/pub/guidelines/ARV2018update/en. Accessed October 1, 2018. **2.** Walmsley et al. *N Engl J Med.* 2013;369:1807-1818. **3.** Raffi et al. *Lancet.* 2013;381:735-743. **4.** Clotet et al. [Erratum in: *Lancet.* 2015;385:2576]. *Lancet.* 2014;383:2222-2231. **5.** Orrell et al. [Erratum in: *Lancet HIV.* 2017;4:e535]. *Lancet HIV.* 2017:4:e536-546. **6.** Trottier et al. *Antivir Ther.* 2017;22:295-305.