P266

Economic estimation of the management of neuropsychiatric events in people with HIV in real life

Juan Tiraboschi[1], Alvaro Mena-de-Cea[2], Jesus Troya Garcia[3], Antonio Castro[4], Pilar Cabrera[5], Neus Vidal-Vilar[5]

[1] HIV Unit, Infectious Diseases Service, University Hospital of Bellvitge, Hospitalet de Llobregat, Barcelona, Spain. [2] Infectious Diseases Unit, Internal Medicine Service, University Hospital of A Coruña (CHUAC), Sergas, A Coruña; Clinical Virology Group, Biomedical Research Institute of A Coruña (INIBIC), Spain. [3] Department of Internal Medicine, Infanta Leonor-Virgen de la Torre University Hospital, Madrid, Spain. [4] Gilead Sciences, Madrid, Spain. [5] Outcomes'10 (a ProductLife Group Company), Castellón, Spain.

Plain Language Summary

- For people with HIV (PHIV), dolutegravir (DTG)-based regimens or bictegravir (BIC)-based regimens are the standard of care for initiating therapy. Nevertheless, higher rates of neuropsychiatric adverse events (NPAEs) have been reported in real-world studies than those described in clinical trials.
- This study has estimated the costs and healthcare resource use (HCRU) associated with the management of NPAEs leading to treatment discontinuation in PHIV treated with DTG and BIC-based regimens in real-world from the perspective of the Spanish National Health System (NHS).
- Discontinuation rates by NPAE in real-world patients treated with DTG-based regimens and BIC-based regimens were identified from a previous published systematic literature review according to their design (prospective or retrospective). The most common NPAEs leading to discontinuation (headache, sleep disorders, depression, anxiety and dizziness) and their weight (calculated as the weighted mean percentage of patients who experienced them) were used to calculate a unitary NPAE cost.
- Cost savings in the management of NPAEs have been observed in patients on a BIC-based regimen compared to DGT-based regimen, in both retrospective and prospective studies. Also, less resource use has been observed in patients using a BIC-based regimen compared to DGT-based regimen in both study designs.

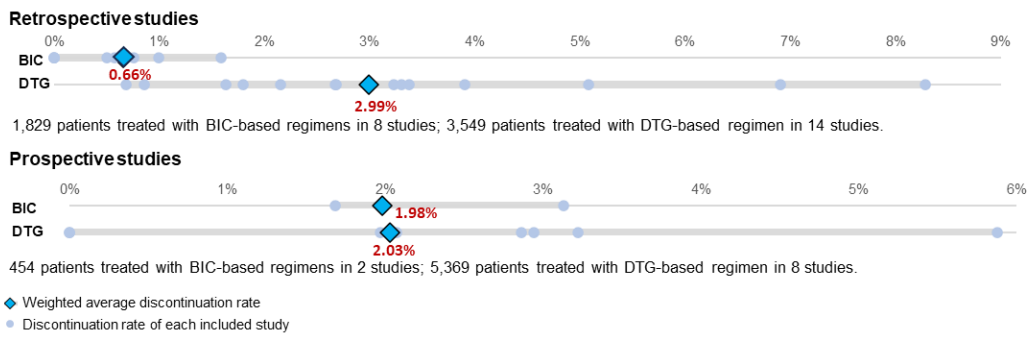
Introduction

- The use of antiretroviral therapy (ART) for the treatment of HIV has improved the lives of PHIV by controlling and reducing disease progression and transmission[1,2].
- Of the different available ART, regimens containing the integrase strand transfer inhibitors (INSTIs) DTG or BIC are recommended as initial treatment due to their high efficacy and safety profile[3].
- However, higher rates of NPAEs have been reported in real-world studies than those described in clinical trials[4,5]. Specifically, a recent systematic review evaluating discontinuation rates due to NPAEs in real-world studies showed that DTG-based regimens resulted in higher discontinuation rates compared with BIC-based regimens[6].
- Considering this, the main goal of the study was to estimate the costs and HCRU associated with the management of NPAEs leading to treatment discontinuation in PHIV treated with DTG-based regimens and BIC-based regimens in real-world from the perspective of the Spanish NHS.

Methods

- In order to estimate the cost and HCRU difference between DTG-based regimens and BIC-based regimens associated with the management of NPAEs leading to treatment discontinuation in real-world, a hypothetical cohort of 1,000 PHIV was considered.
- Discontinuation rates by NPAE in real-world patients treated with DTG-based regimens and BIC-based regimens were identified from a previous published systematic literature review[6] according to their design (prospective or retrospective), and including studies with up to 12 months follow-up and switch and mixed (combination of naïve and switch) patients.

Discontinuation rates due to NPAEs in patients treated with DTG-based regimens and BIC-based regimens identified in retrospective and prospective real-world studies



- The most common NPAEs leading to discontinuation (headache, sleep disorders, depression, anxiety and dizziness) and their weight (calculated as the weighted mean percentage of patients who experienced them) were used to calculate the total NPAE cost.
- A panel of expert clinicians with extensive experience in the management of HIV estimated the resource use associated with the management of each NPAE, considering visits, tests, hospitalisations and pharmacological treatment. Unit costs (€, 2024) were obtained from the Spanish databases Botplus[7] and eSalud[8].

Cost for each NPAE

NPAEs	Weight (%)	Cost (€)
Headache	23.80	390.76
Sleep disorders	26.31	438.41
Depression	11.49	561.11
Anxiety	9.45	671.59
Dizziness	28.96	389.85
Cost per NPAE	**449.13 €**	

Results

Costs

- **Based on real-world data from retrospective studies** (discontinuation rate: DTG: 2.99%; BIC: 0.66%) and considering a cost per NPAE of 449.13€, **the cost of managing NPAEs** in a cohort of 1,000 patients **would be** 13,437€ with DTG-based regimens and 2,947€ with BIC-based regimens, representing **a 78.1% savings in management when patients are treated with BIC-based regimens.**
- **In prospective studies** (discontinuation rate: DTG: 2.03%; BIC: 1.98%), **the cost of NPAE management would be** €9,118 with DTG-based regimens and €8,903 with BIC-based regimens, representing **a 2.4% savings in managing NPAE in patients treated with BIC-based regimens.**

Estimation of costs and savings in a cohort of 1,000 PHIV treated with DTG-based regimens and BIC-based regimens according to data from retrospective and prospective real-world studies

	Cost per cohort (€)	Difference (€)	Savings (%)
Retrospective studies			
DTG-based regimens	13,437	**10,490**	**78,1%**
BIC-based regimens	2,947		
Prospective studies			
DTG-based regimens	9,118	**215**	**2,4%**
BIC-based regimens	8,903		

Healthcare resource use

- **Based on real-world data from retrospective studies, PHIV treated with BIC-based regimens use fewer resources per year compared with those treated with DTG-based regimens**, especially regarding primary care and specialist visits. It is estimated to save 86.08 primary care (PC) visits, 16.74 specialist visits, 4.81 emergency visits, 0.03 nursing visits, 3.44 tests and 1.08 days of hospitalisation per year.
- According to data from **prospective studies**, **treatment with BIC-based regimens also translates into saving in the use of resources compared with those treated with DTG-based regimens**. It is estimated to save 1.76 PC visits, 0.34 specialist visits, 0.10 emergency visits, 0.07 tests and 0.02 days of hospitalisation per year.

Conclusions

- Real-world discontinuation rates due to NPAEs with BIC-based regimens are lower than with DTG-based regimens, leading to savings in HCRU and related cost for their management.
- Findings from this study could support treatment decision-making in PHIV in clinical practice.

References: 1. Ghosn J, et al. Lancet. 2018;392(10148):685-97. 2. Gibas KM, et al. Lancet HIV. 2022;9(12):e868-e83. 3. Gandhi RT, et al. Jama. 2023;329(1):63-84. 4. Kolakowska A, et al. Curr Treat Options Infect Dis. 2019;11(4):372-87. 5.Yombi JC. AIDS Rev. 2018;20(1):14-26. 6. Pérez-Valero I, et al. Expert Rev Anti Infect Ther. 2023;21(6):655-65. 7. Botplus Database. 8. Oblikue. eSalud database.

Acknowledgments: These studies were funded by Gilead Sciences, Inc. We thank all study participants, all participating study investigators, and staff.