

Potential Healthcare Resource Use And Associated Costs Of Every 2 months Injectable Cabotegravir+Rilpivirine Long-acting Implementation In The Spanish NHS Vs. Daily Oral HIV Treatments

Laura-Amanda Vallejo Aparicio¹, Victoria Neches García¹, Beatriz Hernández², Gregorio Casado³, Ferrán Jodar³, Marco Pinel³, Daniel Callejo Velasco³

¹GSK, Tres Cantos (Madrid), España; ²ViiV Healthcare, Tres Cantos (Madrid), España; ³IQiVA, España

Key Takeaways

- Current HIV treatment consists of daily oral antiretroviral therapy (ART), and cabotegravir+rilpivirine long-acting (CAB+RPV LA) administered every 2 months through injection by a healthcare professional would be the first LA ART available in Spain.
- Due to its innovative administration, it is anticipated to have a different patient pathway vs. daily oral ARTs at Spanish hospitals, potentially leading to different healthcare resource use (HRU) and associated costs needed for its implementation.
- An online cross-sectional quantitative interview in 120 healthcare professionals (HIV specialists, hospital pharmacists and nurses) was performed to explore their perceptions of the potential differences in annual per patient HRU between patient pathways. Then, a cost analysis applying unit costs was performed.
- It was found that the implementation of CAB+RPV LA in NHS hospitals would not incur increased HRU-related costs vs. daily oral ART.

Introduction

- HIV treatment currently consists of daily oral antiretroviral therapy (ART)¹.
- Cabotegravir+rilpivirine long-acting (CAB+RPV LA) will be the first ART administered every 2 months through intramuscular injection by a healthcare professional available in Spain².
- As per its innovative method of administration, the long-acting regimen will require a different patient pathway within the NHS hospitals when implemented, compared with current daily oral ART, which could lead to changes in the healthcare resources needed for its administration³.

Objective

- The objective of this analysis was to assess the potential healthcare resource use (HRU) and cost impact of implementing CAB+RPV LA vs. daily oral ART with regards to patient pathways in the National Health System (NHS) hospitals.

Methods

- An online cross-sectional quantitative interview (CAWI, Computer Assisted Web Interviewing) and costs analysis was performed.
- Firstly, HIV specialists, hospital pharmacists (HPs), and nurses were asked to participate in the CAWI recruited by phone, being the main healthcare professionals (HCPs) involved in HIV management at hospital level.
- HCPs were asked about their perception of the potential differences in annual per patient HRU, specifically, in terms of the number of visits performed by each specialty, between patient pathways using CAB+RPV LA vs. daily oral ART.
- For HRU estimation, two approaches were followed:
 - Whole sample: mean annual per patient number of visits per HCP specialty calculated as average values from all respondents
 - Adjusted by corresponding specialty: calculated only considering average values from the correspondent specialty (ie. estimate of the number of visits to HIV specialist only from HIV specialist respondents)

• Thereafter, the costing analysis was performed with HRU estimates multiplied by its unit cost per individual respondent.

• The average of the costs associated with each individual respondent was then calculated to obtain the total average cost of each HRU and presented as overall or adjusted by corresponding specialist.

$$\text{Total costs} = HCRU_1 \times \text{unit cost}_1 + HCRU_2 \times \text{unit cost}_2 + HCRU_n \times \text{unit cost}_n$$

• Unit costs were obtained from Spanish official tariffs in euros (€) for 2022:

Type of visit	Unitary cost *
Visit to HIV specialist	370.42 € ⁴
Visit to the hospital pharmacy	165.00 € ⁵
Visit to nursing team	22.00 € ⁵

*These represent cost per visit to the HCP despite the underlying reason, as one single visit may include multiple purposes for the visit.

Results

Sample characteristics

- A total of 120 HCPs completed the CAWI, distributed as 40 HIV specialists, 40 hospital pharmacists, and 40 nurses, with a mean of 194 HIV patients seen monthly and 19.9 years of experience dispensing injectable treatments.
- A summary of the key characteristics of the sample included is shown in Table 1.

Table 1. Characteristics of the sample interviewed

	HIV specialist (n = 40)	HP (n = 40)	Nurse (n = 40)	Total (n = 120)
HIV patients seen monthly, mean (SD)	142 (74)	321 (218)	117 (117)	194 (174)
Years of experience dispensing injectable treatments, mean (SD)	21.3 (7.8)	19.3 (6.8)	19.2 (10.1)	19.9 (8.3)
Autonomous region, n (%)				
Andalucía	2 (5%)	6 (15%)	5 (13%)	13 (11%)
Aragón	1 (3%)	0 (0%)	0 (0%)	1 (1%)
Principado de Asturias	1 (3%)	0 (0%)	1 (3%)	2 (2%)
Islas Baleares	0 (0%)	2 (5%)	0 (0%)	2 (2%)
Canarias	0 (0%)	2 (5%)	1 (3%)	3 (3%)
Cantabria	1 (3%)	1 (3%)	1 (3%)	3 (3%)
Castilla - La Mancha	3 (8%)	2 (5%)	0 (0%)	5 (4%)
Castilla y León	1 (3%)	1 (3%)	0 (0%)	2 (2%)
Cataluña	9 (23%)	9 (23%)	8 (20%)	26 (22%)
Comunidad Valenciana	5 (13%)	5 (13%)	6 (15%)	16 (13%)
Extremadura	1 (3%)	0 (0%)	0 (0%)	1 (1%)
Galicia	3 (8%)	2 (5%)	1 (3%)	6 (5%)
Comunidad de Madrid	13 (33%)	8 (20%)	14 (35%)	35 (29%)
Región de Murcia	0 (0%)	0 (0%)	3 (8%)	3 (3%)
Comunidad Foral de Navarra	0 (0%)	1 (3%)	0 (0%)	1 (1%)
País Vasco	0 (0%)	1 (3%)	0 (0%)	1 (1%)
Hospital size, n (%)				
Large (>500 beds)	24 (60%)	30 (75%)	27 (68%)	81 (68%)
Medium (≥200 & ≤500 beds)	16 (40%)	10 (25%)	13 (33%)	39 (33%)
Small (<200 beds)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

Estimated Healthcare Resource Utilization

- The estimated mean annual visits per patient by the whole sample for CAB+RV LA vs daily oral ART, as well as the results as estimated by the corresponding specialist, are shown in table 2 and 3, respectively.

Table 2. Annual visits per patient by HCP specialty estimated by the whole sample

	CAB+RPV LA	Oral ART	Differences
Visits to the HIV specialist, mean (95% CI)	3.3 (2.8; 3.7)	3.7 (3.1; 4.3)	-0.4 (-1.0; 0.2)
Visits to hospital pharmacy, mean (95% CI)	4.4 (4.0; 4.8)	6.2 (5.8; 6.7)	-1.8 (-2.3; -1.3)*
Visits to nurse, mean (95% CI)	6.1 (5.4; 6.8)	3.9 (3.4; 4.3)	2.2 (1.5; 3.0)*

*Significant difference at 95%

Table 3. Annual visits per patient by HCP specialty estimated by the corresponding specialist

	CAB + RPV LA	Oral ART	Differences
Visits to HIV specialist, mean (95% CI)	3.0 (2.5; 3.4)	3.2 (2.6; 3.7)	-0.2 (-0.9; 0.5)
Visits to hospital pharmacy, mean (95% CI)	4.8 (4.2; 5.4)	5.8 (5.3; 6.3)	-1.0 (-1.7; -0.3)*
Visits to nurse, mean (95% CI)	6.9 (4.8; 9.0)	4.9 (3.9; 5.9)	2.0 (-0.1; 4.1)*

*Significant difference at 95%

- Following both methods, visits to the HIV specialist were found to be almost the same, whilst a shift from hospital pharmacy to nurse visits was seen for CAB+RPV LA vs. oral ART.

Associated Costs

- Results from the whole sample showed that LA regimen may result in annual per patient saving of approximately €400 compared with oral ART. The increased number of nurse visits (and resultant increased cost) associated with LA regimen would be outweighed by a reduction in costs for the hospital pharmacy associated with LA regimen administration (Table 4).

Table 4. Mean per patient annual costs calculated from HRU estimated by the whole sample

	CAB+RPV LA	Oral ART	Differences
Visits to HIV specialist, mean (95% CI)	1,213 € (1,040 €; 1,386 €)	1,364 € (1,138 €; 1,590 €)	-151 € (-365 €; 63 €)
Visits to hospital pharmacy, mean (95% CI)	729 € (662 €; 796 €)	1,024 € (951 €; 1,098 €)	-296 € (-384 €; -207 €)*
Visits to nurse, mean (95% CI)	134 € (118 €; 150 €)	85 € (75 €; 94 €)	49 € (32 €; 66 €)*
Total costs, mean (95% CI)	2,076 € (1,887 €; 2,265 €)	2,473 € (2,202 €; 2,745 €)	-398 € (-665 €; -130 €)*

*Significant difference at 95%

- When adjusting by corresponding specialists, costs associated with visits may be reduced by about €200 per patient and year with LA regimen compared with oral ART. Similarly, the reduction in visits to hospital pharmacy is the main driver of the reduction in costs associated with LA regimen compared with daily oral ART (Table 5).

Table 5. Mean per patient annual costs estimated calculated from HRU estimated by the corresponding specialist

	CAB+RPV LA	Oral ART	Differences
Visits to HIV specialist, mean (95% CI)	1,093 € (922 €; 1,263 €)	1,176 € (965 €; 1,387 €)	-83 € (-335 €; 168 €)
Visits to hospital pharmacy, mean (95% CI)	788 € (692 €; 884 €)	953 € (872 €; 1,034 €)	-165 € (-274 €; -56 €)*
Visits to nurse, mean (95% CI)	152 € (106 €; 197 €)	108 € (86 €; 130 €)	44 € (-2 €; 90 €)
Total costs, mean (95% CI)	2,032 € (1,966 €; 2,099 €)	2,237 € (2,162 €; 2,312 €)	-204 € (-296 €; -112 €)*

*Significant difference at 95%

Conclusion

These results suggest that the implementation of CAB+RPV LA in NHS hospitals would not incur in increased HRU-related costs associated to a different patient pathway compared with current daily oral ART, being potentially neutral or even cost-saving.