

Cabotegravir and Rilpivirine Long-acting Antiretroviral Therapy Administered Every 2 Months is Cost Effective for the Treatment of HIV-1 in Spain

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Key Takeaways

- Current antiretroviral therapy (ART) for people with HIV administered on a daily oral basis remains challenging for some.
- Cabotegravir + rilpivirine long-acting (CAB + RPV LA), administered by injection every 2 months (Q2M) is the first complete LA regimen for HIV management, so the objective was to evaluate its cost-effectiveness vs. daily oral ART as single tablet regimen (STR) from the Spanish National Healthcare System (NHS) perspective.

- In the base-case, over a lifetime horizon, CAB + RPV LA was associated with additional 0.27 quality-adjusted life-years (QALYs) at an incremental cost of €4,003, leading to an incremental cost-effectiveness ratio (€15,003) below the Spanish WTP threshold of €30,000/QALY. Results were consistent for all sensitivity analyses.
- From the Spanish NHS perspective, CAB + RPV LA Q2M is cost-effective against STR daily oral comparators.

Introduction

- Current antiretroviral therapy (ART) improves health outcomes, but for some people with HIV daily oral administration remains a challenge.¹
- Cabotegravir+rilpivirine long-acting (CAB + RPV LA), administered by a healthcare professional via intramuscular injection every 2 months (Q2M), is the first complete LA regimen for the maintenance treatment of HIV to be available in Spain.²
- The introduction of CAB + RPV LA may offer the opportunity to improve outcomes amongst people living with HIV (PLHIV) with inadequate adherence to treatment or for those who require treatments with an alternative method of administration.¹

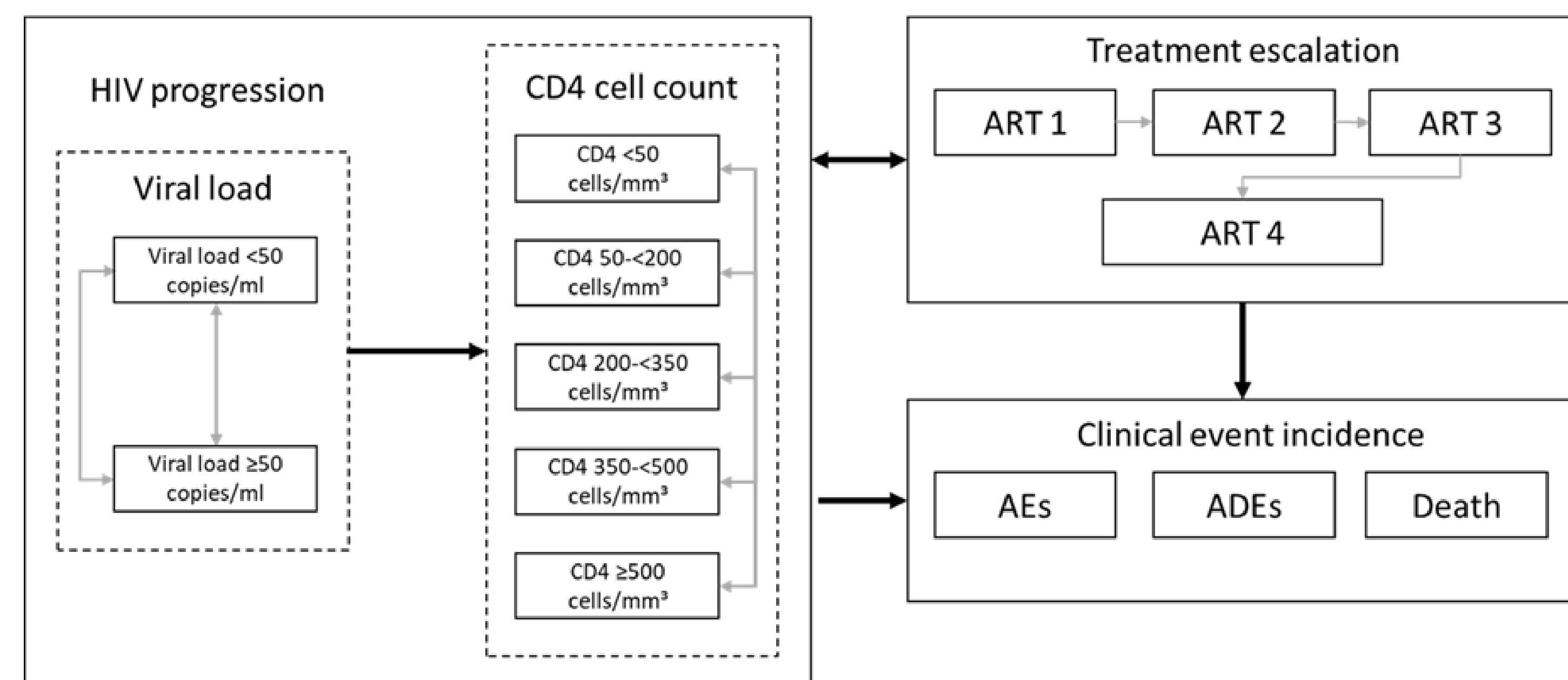
Objective

- To evaluate the cost-effectiveness of CAB + RPV LA Q2M compared with daily oral single tablet regimen (STR) antiretroviral therapy in Spain, from the National Healthcare System (NHS) perspective.

Methods

- A previously published Markov cohort state-transition model⁴ was adapted to the Spanish setting for calculating cumulated quality-adjusted life-years (QALYs) and costs over a life-time horizon in monthly cycles:

Figure 1. Model flow diagram



- **Comparators:** CAB + RPV LA was compared vs. a pooled comparator of all daily oral STRs (shown in Table 1) currently recommended in Spain as SoC (Standard of Care).
- **Efficacy data:** Non-inferiority data of the comparators were taken from the pooled ATLAS, FLAIR and ATLAS-2M clinical trials.^{5,6,7}
- **QALYs:** For its calculation, a utility advantage of 0.02 was applied for LA treatment vs. STRs based on a post-hoc analysis of health-related quality of life data from ATLAS and FLAIR studies.⁸
- **Adherence:** As a directly observed therapy administered Q2M, CAB + RPV LA is expected to improve treatment adherence relative to self-administered daily oral therapy, so a reduction in adherence of -9.5% was assumed for the STRs comparator (perfect adherence rate =100%) based on literature.^{9,10} A sensitivity analysis without applying this difference in adherence between comparators was carried out.
- **Perspective & costs:** The NHS perspective was used, so only direct costs (€, 2021) were considered. It included drug acquisition costs (list prices), administration costs only for LA, HIV management costs (by CD4+ count level), Adverse Events (AE) and AIDS-defining Events costs and end-of-life care management costs.
 - Daily oral STRs monthly acquisition cost was calculated as the weighted average list price of all STRs available in Spain (Table 1), whilst at the time of this analysis CAB + RPV LA was not reimbursed in Spain a list price of €1,606.28 was assumed, corresponding to a monthly cost of €803.14:

Table 1. Monthly drug acquisition cost by comparator

Regimen	Monthly cost*	Source
CAB + RPV LA	€803.14	Assumption
Daily oral STRs	€767.52	
Atripla (TDF/EFV/FTC)	€272.11	BotPlus database ¹¹
Biktarvy (BIC/FTC/TAF)	€906.50	
Dovato (DTG/3TC)	€589.91	
Eviplera (FTC/RPV/TDF)	€645.31	
Genvoya (EVG/COBI/FTC/TAF)	€906.50	
Juluca (DTG/RPV)	€752.52	
Odefsey (DTG/FTC/TAF)	€645.65	
Stribild (COBI/FTC/TDF/EVG)	€906.50	
Symtuza (DRV/COBI/FTC/TAF)	€816.22	
Triumeq (DTG/ABC/3TC)	€798.28	

3TC: lamivudine; ABC: abacavir; CAB: cabotegravir; COBI: cobicistat; DRV: darunavir; DTG: dolutegravir; EFV: efavirenz; EVG: elvitegravir; FTC: emtricitabine; LA: long-acting; RPV: rilpivirine; SE: standard error; TAF: tenofovir alafenamide; TDF: tenofovir disoproxil fumarate; WAC: wholesale acquisition cost

*Monthly cost calculated based on Price to Wholesalers (PTW) applying the -7.5% mandatory deduction in applicable cases

- **Discount rates:** An annual discount rate of 3% was applied to costs and QALYs following Spanish recommendations for economic evaluations.¹¹
- **Uncertainty:** Several deterministic/scenario analyses were conducted to explore the influence of the input parameters on base-case results, including variations in the discount rates, costs, % of treatment adherence reduction, or oral lead-in treatment inclusion for CAB + RPV LA. In addition, a probabilistic sensitivity analysis (PSA) was performed with 1,000 simulations.

Results

Base-case

- Over the time horizon, CAB + RPV LA was associated with additional 0.27 QALYs and a slightly greater lifetime costs (€239,633 versus €235,629):

Table 1. Base-case results for CAB + RPV LA vs daily oral STRs

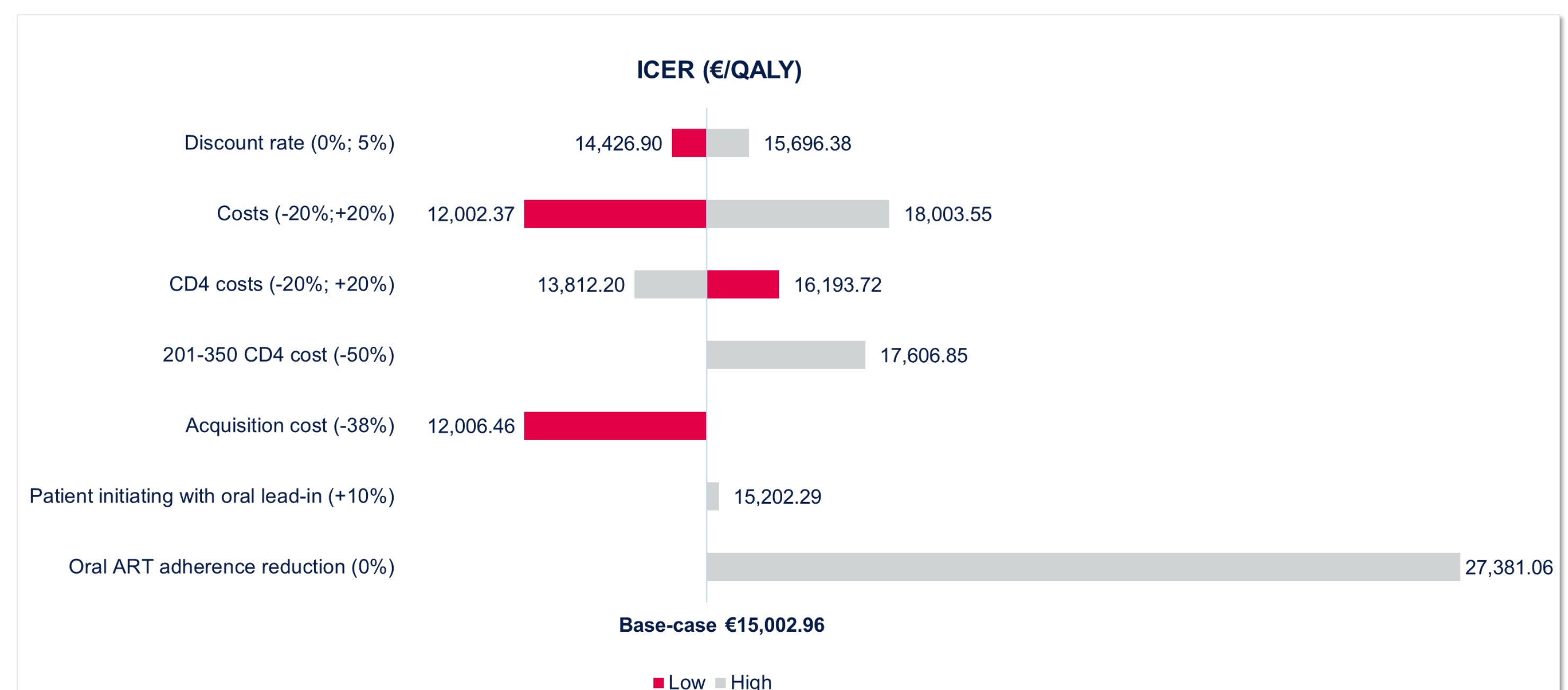
Treatment	Total LYs	Total QALYs	Total Costs	Cost / QALY
CAB + RPV LA	17.99	13.51	€ 239,633	
Daily oral STRs	17.89	13.25	€ 235,629	
Incremental	0.10	0.27	€ 4,003	€15,003

- Thus, the ICER of CAB + RPV LA was €15,003/QALY, below the commonly accepted €30,000/QALY WTP threshold in Spain, resulting in a cost-effective alternative for the NHS.

Sensitivity analyses

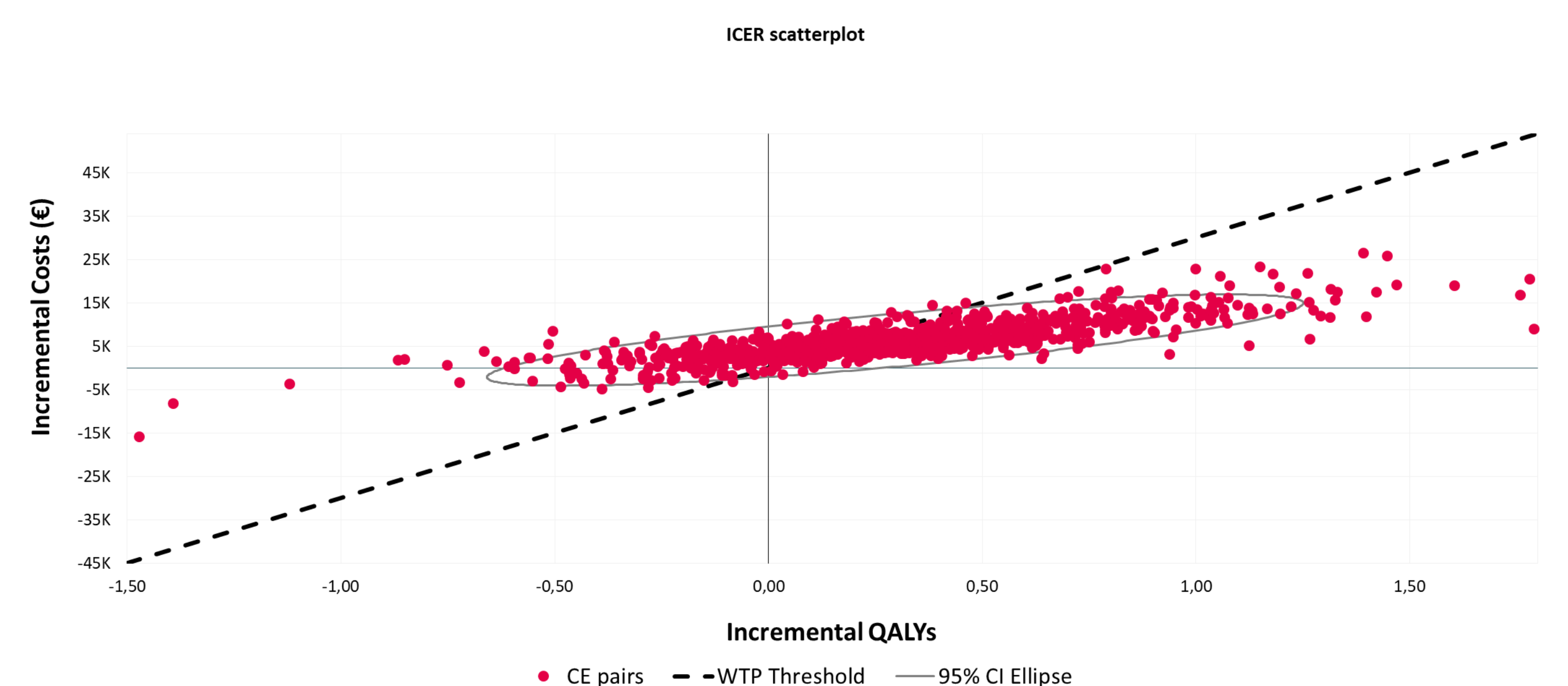
- All scenario analysis showed consistent results, with an Incremental Cost-Effectiveness Ratio (ICER) of CAB + RPV LA below the Spanish threshold¹²:

Figure 2. Scenario analysis results



- The PSA showed that CAB + RPV LA was cost-effective vs. daily oral STR's in 62.4% of simulations, and dominant (less costly, more effective) in 0.3% of them:

Figure 3. Scatterplot for PSA of CAB + RPV LA vs. daily oral STRs



Conclusion

- From the Spanish NHS perspective, CAB + RPV LA Q2M is a cost-effective alternative when compared with current options of daily oral STR ART for HIV treatment, being associated with small QALY gains but also small incremental costs increases