

# Avoidable Direct Costs in Patients with Metastatic Hormone-Sensitive Prostate Cancer (mHSPC) Treated with Darolutamide: A Real-world Evidence from a Multicenter Study in Colombia

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## Introduction

- Metastatic hormone-sensitive prostate cancer (mHSPC) accounts for 30% of diagnoses in Colombia (1).
- Progression to the metastatic castration-resistant stage (mCRPC) deteriorates outcomes and significantly escalates healthcare costs. While androgen deprivation therapy (ADT) with new-generation agents like darolutamide reduces progression risk by 46%, clinical management remains suboptimal (2,3).
- Consequently, pharmacoeconomic studies quantifying avoidable costs during the mCRPC transition are imperative. This study simulates the economic impact of darolutamide use across four specialized centers in Colombia.

## Objectives

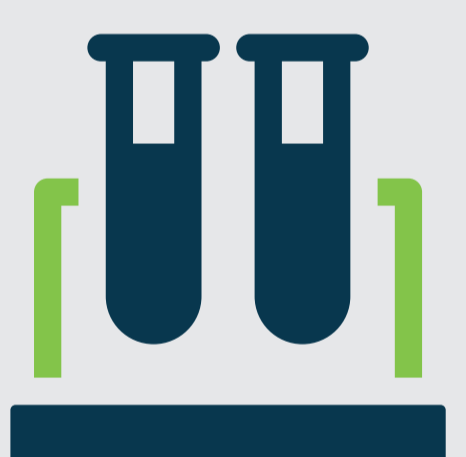
We aimed to estimate the potential impact of avoidable costs associated with darolutamide use in patients with mHSPC treated across four centers in Colombia

## Methods



### Step 1 - Base Cost

Median annual costs per patient are estimated for the mHSPC and mCRPC phases using real-world Colombian claims data (n=214 mHSPC patients) and re-sampled via bootstrap in each iteration to capture variation in healthcare resource utilization.



### Step 2 - Clinical efficacy

Hazard ratios from the ARANOTE trial (HR=0.54 for rPFS; HR=0.81 for OS) are applied over the placebo survival curve to derive monthly transition probabilities between three health states: stable (mHSPC), progressed (mCRPC), and dead.



### Step 3 - 4-year simulation

Over 5,000 Monte Carlo iterations, costs are resampled via bootstrap and hazard ratios sampled from their estimated distributions, propagating both cost and efficacy uncertainty across the simulated cohort over a 4-year horizon.



### Step 4 - Cost accumulation

Monthly costs are weighted by the proportion of patients in each health state at time t. Patients who transition to death accrue no further costs, and totals are aggregated over the full horizon for each treatment arm.



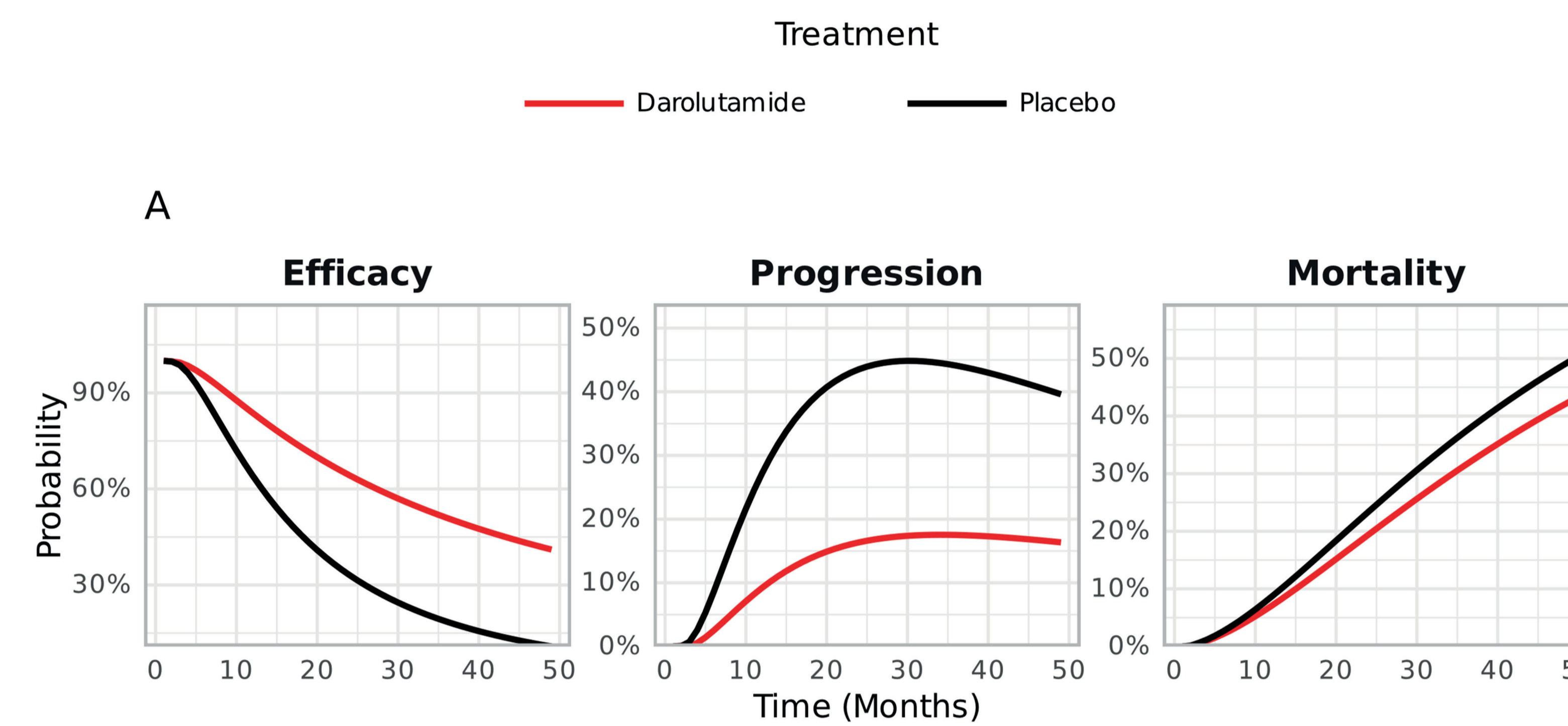
### Step 5 - Savings calculation

The average total cost across all 5,000 simulations is compared between the control and Darolutamide groups. The difference represents the estimated savings associated with Darolutamide, reported with a 95% confidence interval.

## Results

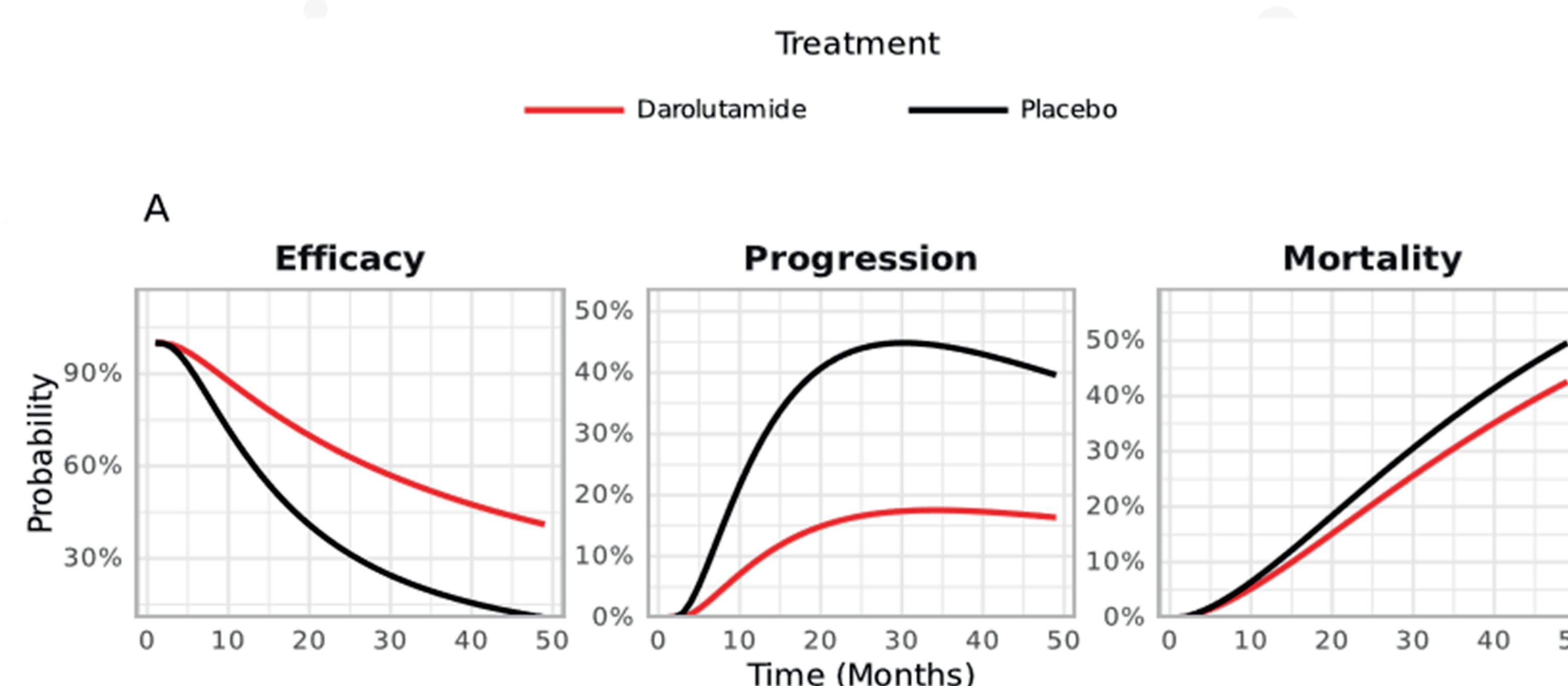
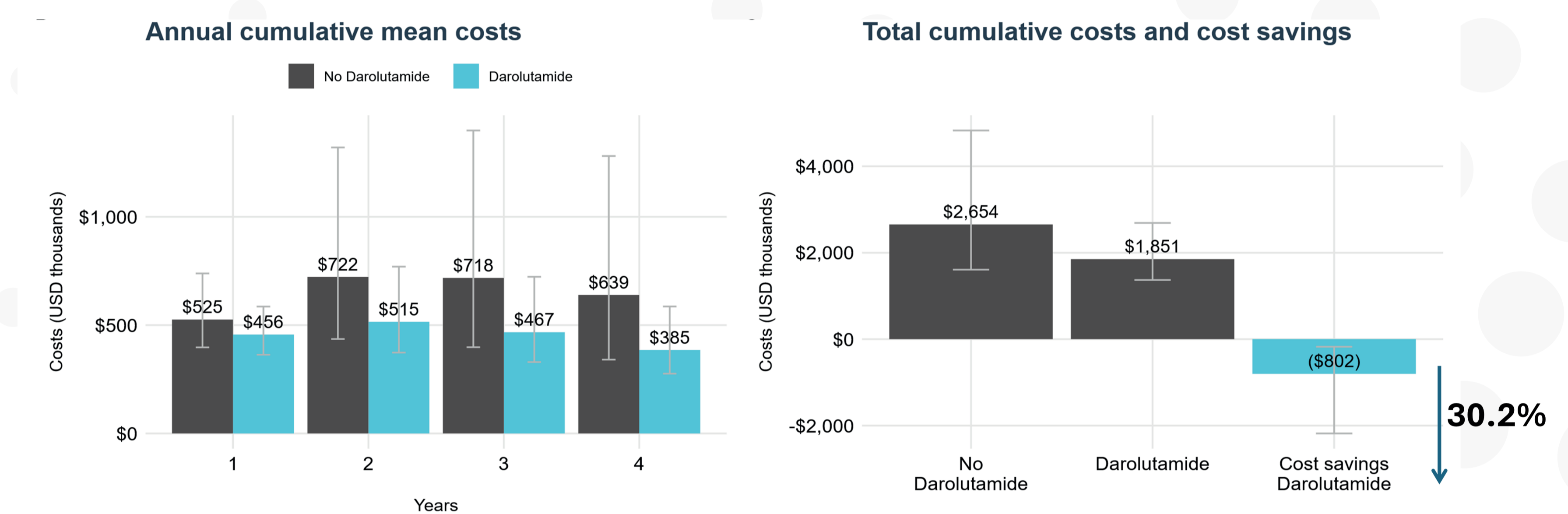
Using cost data for 214 patients in the mHSPC state, the model estimated the potential avoidable costs of progression/delay to the mCRPC state.

Figure 1. Cost Analysis using a Radiological Progression-Free Survival (rPFS) outcome



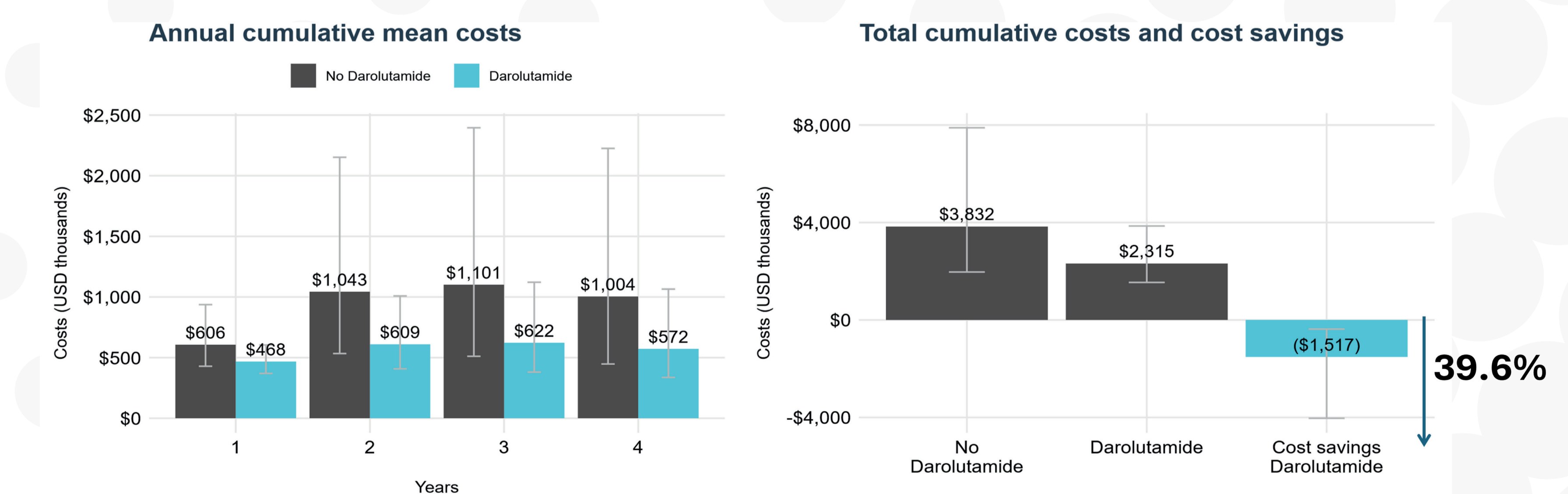
- Using ARANOTE data related to rPFS outcome (Figure 1A)

- The use of darolutamide in patients with mHSPC implies a reduction of 30,2% (95% CI: -45,5%; -10,0%) in the cumulative costs evaluated rPFS outcome (Figure 1B y 1C)



- Using ARANOTE data related to time to progression to mCRPC outcome (Figure 2A)

- The use of darolutamide in patients with mHSPC implies a reduction of 39,6% (95% CI: -45,5%; -10,0%) in the cumulative costs evaluated time to progression to mCRPC (Figure 2B y 2C)



## Conclusions

The darolutamide-treated group showed lower annual costs than the best supportive care patient group due to a lower risk of progression to disease, implying an important set of health expenditures that could be avoided/delayed.

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