Apalutamide (APA) as first option to metastatic hormone -sensitive prostate cancer (mHSPC) represents cost -effective treatment sequences to health systems

Silva, L.C.A. [1]; Nogueira, T.M.P. [1]; Vidal, G. [1]; Montone, B.; Pando, L.C.A. [1]; Ramos, M.M.F [1]
[1] Johnson & Johnson, Sao Paulo, Brazil

EE151

Key Takeaways

- Apalutamide (APA) sequences have superiority in cost -effectiveness compared to enzalutamide (ENZ) and darolutamide (DARO) in mHSPC scenarios.
- Cost-effectiveness results of APA sequences are sustained by higher overall survival and progression-free survival to mHSPC patients.
- The most cost -effectiveness sequences are APA+ADT, ENZ+ADT, CABA+ADT and BSC, **and** APA+ADT, CABA+ADT, ENZ+ADT and BSC, **saving BRL 8,314/LYG *vs* DARO.**

Background

- Access to oncological drugs requires strategic organization of the therapeutic arsenal to support decision-making. While the availability of more treatment options is often perceived beneficial, factors such as patient profile, disease type, specialist expertise and economic outcomes must be carefully considered. [1,2]
- In metastatic hormone-sensitive prostate cancer (mHSPC)*, early progression to metastatic castration-resistant prostate cancer (mCRPC) drastically changes the patient's journey and may be linked to early treatment choices. [3]
- The new androgen receptor pathway inhibitors (ARPIs) have introduced therapeutic alternatives with superior efficacy compared to previously used therapies, reshaping the management of advanced prostate cancer. [3,4]
- Planning therapeutic sequencing through evidence-based protocols can extend overall survival, enhance quality of life, reduce toxicity, and leverage diverse mechanisms of action effects. Moreover, this approach contributes to the optimization of healthcare resources, which is particularly critical in systems with limited budgets. [4,5]

Objective

To assess cost-effectiveness of apalutamide (APA) plus androgen deprivation therapy (ADT) versus enzalutamide (ENZ) or darolutamide (DARO) plus ADT as first option for mHSPC considering treatment sequences.

Methods

Parameters to economic analysis

- An economic analysis was performed comparing costs per life-year gained (LYG) between sequences of APA+ADT versus ENZ+ADT or DARO+ADT as therapy for mHSPC, assuming identical mCRPC drugs sequence across scenarios.
- Meta-analysis conducted by the National Committee for Health Technology Incorporation (CONITEC) during the Health Technology Assessment (HTA) process was used as a reference to overall survival (OS) and progression-free survival (PFS) results from androgen receptor pathway inhibitors (ARPIs).
- Acquisition costs of drugs were based on official Brazilian list price from Sep.2025. Costs related to drug administration and cardiovascular toxicity management were considered too.

Modelling structure of economic analysis

- To estimate LYG for each treatment sequence, the OS data of the initial therapy for mHSPC was considered as the total duration of the patient journey, once mHSPC has late progression time and mCRPC quickly evolves. Also, the PFS of this initial drug was used to determine the timing of progression and the switch to therapies for mCRPC.
- The duration of mCRPC stage was calculated as the difference between the OS and PFS of the chosen mHSPC drug. This time was proportionally distributed across the mCRPC therapies based on the sum of their PFS values (adjusted with a 5% annual discount rate) extracted from clinical trials for each drug.
- Using the available data on time and costs, we calculated the cost/LYG for each treatment sequence. We then compared the results of apalutamide (APA) versus other first-line options for mHSPC, assuming identical mCRPC treatment sequences across all scenarios.

Results

Overall cost -effectiveness results

- It was modelled 48 prostate cancer treatment sequence scenarios comparing those initiated by APA+ADT for mHSPC with ENZ+ADT or DARO+ADT.
- Overall, APA+ADT accounted for 46 cost-effective scenarios (96%) comparing sequences initiated by ENZ+ADT or DARO+ADT.
- All scenarios starting with APA+ADT (100%; n=12) compared to ENZ+ADT presented savings varying from BRL 1,710 to BRL 3,581/LYG.
- Ninety four percent (94%; n=34) of scenarios comparing APA+ADT vs DARO+ADT resulted in cost savings ranging from BRL 1,283 to BRL 8,314/LYG.

APA+ADT versus ENZ+ADT scenarios

- The two most economic sequences were **APA+ADT, ABI+ADT, CABA+ADT and BSC**, and **APA+ADT, CABA+ADT, ABI+ADT and BSC** - where ABI is abiraterone acetate, CABA is cabazitaxel and BSC is best supportive care (Table 1).
- In these two cases, APA+ADT also provided more 0.42 year of life (more than 5 months) versus ENZ+ADT.

Table 1. Scenarios comparing cost-effectiveness of APA+ADT vs ENZ+ADT, and vs DARO+ADT

mHSPC	mCRPC			Cost/LYG vs ENZ+ADT	Cost/LYG vs DARO+ADT
	1st line	2nd line	3rd line		
APA+ADT	CABA+ADT	ABI+ADT	BSC	- BRL 3,580.98	- BRL 1.414,16
APA+ADT	ABI+ADT	CABA+ADT	BSC	- BRL 3,580.98	- BRL 1.414,16
APA+ADT	CABA+ADT	DOC+ADT	ABI+ADT	- BRL 2,208.05	- BRL 3.091,70
APA+ADT	DOC+ADT	CABA+ADT	ABI+ADT	- BRL 2,208.05	- BRL 3.091,70
APA+ADT	DOC+ADT	ABI+ADT	CABA+ADT	- BRL 2,208.05	- BRL 3.091,70
APA+ADT	ABI+ADT	DOC+ADT	CABA+ADT	- BRL 2,208.05	- BRL 3.091,70
APA+ADT	CABA+ADT	ABI+ADT	DOC+ADT	- BRL 2,208.05	- BRL 3.091,70
APA+ADT	ABI+ADT	CABA+ADT	DOC+ADT	- BRL 2,208.05	- BRL 3.091,70
APA+ADT	DOC+ADT	ABI+ADT	BSC	- BRL 1,959.90	- BRL 1.283,48
APA+ADT	ABI+ADT	DOC+ADT	BSC	- BRL 1,959.90	- BRL 1.283,48
APA+ADT	CABA+ADT	DOC+ADT	BSC	- BRL 1,709.57	BRL 4.369,03
APA+ADT	DOC+ADT	CABA+ADT	BSC	- BRL 1,709.57	BRL 4.369,03

ABI: abiraterone acetate. ADT: androgen deprivation therapy. APA: apalutamide. BSC: best standard care. CABA: cabazitaxel. DARO: darolutamide. DOC: docetaxel. ENZ: enzalutamide. LYG: life-year gained. mHSPC: metastatic hormone-sensitive prostate cancer. mCRPC: metastatic castration-resistant prostate cancer.

- According Brazilian specialists, most common sequence done when mHSPC is treated with apalutamide is APA+ADT, DOC+ADT, ABI+ADT and BSC. It also represents a saving of BRL 1.959,90 compared to ENZ+ADT and the same mCRPC sequence.

APA+ADT versus DARO+ADT scenarios

- The two most economic sequences were **APA+ADT, ENZ+ADT, CABA+ADT and BSC**, and **APA+ADT, CABA+ADT, ENZ+ADT and BSC**. These both cases provided more 1.08 year of life versus DARO+ADT. Starting mHSPC treatment with APA+ADT allows one more option (ENZ) to mCRPC (Table 1) and all sequence scenarios were cost-effective versus DARO+ADT.
- The two non-cost-effective sequences had only chemotherapy and BSC for mCRPC. Although these both cases mean less costs by LYG, it represents one year less of life for patients. APA+ADT delivers for prostate cancer favorable clinical and economic outcomes when compared to ENZ+ADT and DARO+ADT.

Results of costs and LYG considering mCRPC common sequences in Brazil

- Starting the therapeutic regimen of metastatic prostate cancer with APA+ADT represents more budget investment than ENZ+ADT or DARO+ADT sequences (Figure 1 and Figure 2). However, this is due to more LYG by patients treated with APA+ADT (4.83 vs 4.42).

Fig 1. Annual cost from a common mCRPC sequence with APA+ADT vs ENZ+ADT to mHSPC

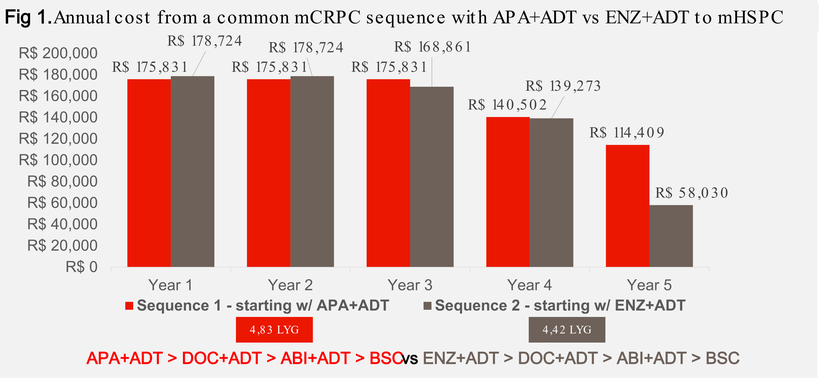
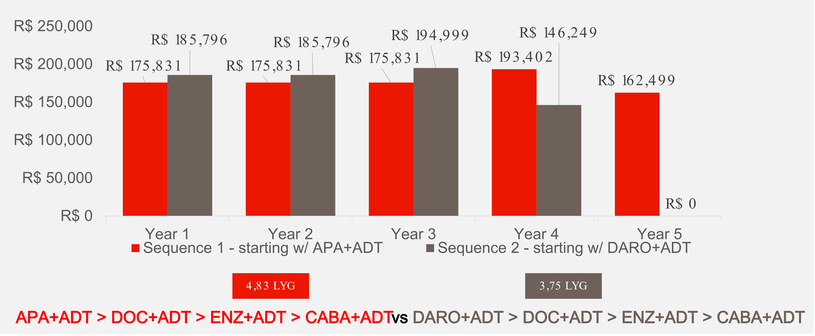


Fig 2. Annual cost from a common mCRPC sequence with APA+ADT vs DARO+ADT to mHSPC



PRESENTED AT: ISPOR 2026 – International Society for Pharmacoeconomics and Outcomes Research, 2025. Philadelphia, PA, USA. May 17th to 20th, 2026. **Acknowledgements:** The authors are grateful to Antídio Filho and Maria Lilian Sales for the support on medical writing.

REFERENCES: 1. OECD. Addressing Challenges in Access to Oncology Medicines: Analytical Report. Paris: OECD Publishing; 2020. Available from: https://doi.org/10.1787/699520d0-en. 2. IQVIA. Access Challenges in the Cancer Patient Journey. United States; 2024 Aug 13. Available from: https://www.iqvia.com/locations/united-states/library/white-papers/access-challenges-in-the-cancer-patient-journey. 3. Fisher DJ, Vale CL, Rydzewska LH, et al. Meeting Abstract: 2025 ASCO Genitourinary Cancers Symposium: "Which patients with metastatic hormone-sensitive prostate cancer (mHSPC) benefit more from androgen receptor pathway inhibitors (ARPIs)? STOPCAP meta-analyses of individual participant data (IPD)". J Clin Oncol. 2025; 43(5):suppl.20. DOI: 10.1200/JCO.2025.43.5_suppl.20. 4. Lee CH, Kim S, Ku JY, Kim KH, Kang BJ, Goh HJ, et al. Comparative effectiveness of androgen receptor pathway inhibitor treatment intensification for metastatic hormone-sensitive prostate cancer in real-world patients. Investig Clin Urol. 2025;66:516-525. Available from: https://m.icurology.org/pdf/10.4111/icu.20250313. 5. Ávila C, GonzálezMontero J, Rojas CI, et al. Current landscape in first-line treatment of metastatic hormone sensitive prostate cancer: a cost-effectiveness focused review. Oncologist. 2025 May 28;30(5):oyaf095. doi: 10.1093/oncolo/oyaf095. 6. Brazilian Ministry of Health. Recommendation Report 911: abiraterone, apalutamide, darolutamide and enzalutamide for treatment of individuals with metastatic castrate-sensitive prostate cancer (mCSPC). Jul 2024. Available from: https://www.gov.br/conitec/pt-br/midias/relatorios/2024/abiraterona-em-monoterapia-ou-associada-ao-docetaxel-para-o-tratamento-de-pacientes-com-cancer-de-prostata-sensivel-a-castracao-e-metastatico-cpscm. * Metastatic hormone-sensitive prostate cancer (mHSPC) is also known as metastatic castration sensitive prostate cancer (mCSPC).