

# Comparison of early and deep prostate-specific antigen response in real-world patients with metastatic castration-sensitive prostate cancer treated with apalutamide or enzalutamide

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**Johnson&Johnson**

Oncology

# Background

Retrospective analysis comparing PSA90 in ARPI-naïve patients with mCSPC newly initiated on apalutamide versus enzalutamide

 Apalutamide and enzalutamide are approved for use in mCSPC<sup>1,2</sup>

## Phase 3 trials



**TITAN<sup>3</sup> (apalutamide)**

**ARCHES<sup>4</sup> (enzalutamide)**

Both demonstrated statistically significant reduction in disease progression<sup>3-6</sup>

## Real-world studies



Apalutamide is significantly associated with a **higher likelihood of achieving a PSA90 response<sup>7</sup>**



A need to evaluate the robustness of these studies

Through restricting analysis to patients **with a detectable baseline PSA (>0.2 ng/mL)**



Real world study comparing the **proportion of patients achieving PSA90 response by 6 months**

In patients with mCSPC with detectable PSA who newly initiated:

Apalutamide

VS

Enzalutamide

ARPI, androgen receptor pathway inhibitor; mCSPC, metastatic castration-sensitive prostate cancer; PSA, prostate specific antigen; PSA90, ≥90% decline in prostate specific antigen.

1. U.S. Food and Drug Administration. FDA approves apalutamide for metastatic castration-sensitive prostate cancer. 2019. Available at: <https://www.fda.gov/drugs/resources-information-approved-drugs/fda-approves-apalutamide-metastatic-castration-sensitive-prostate-cancer>. Accessed 18 Dec 2025; 2. U.S. Food and Drug Administration. FDA approves enzalutamide for metastatic castration-sensitive prostate cancer. 2019. Available at: <https://www.fda.gov/drugs/resources-information-approved-drugs/fda-approves-enzalutamide-metastatic-castration-sensitive-prostate-cancer>. Accessed 18 Dec 2025; 3. Chi KN, et al. N Engl J Med. 2019;381(1):13–24; 4. Chi KN, et al. J Clin Oncol. 2021;39(20):2294–2303; 5. Armstrong AJ, et al. J Clin Oncol. 2019;37(32):2974–2986; 6. Armstrong AJ, et al. J Clin Oncol. 2022;40(15):1616–1622. 7. Lowentritt B, et al. Rev Urol. 2024;23(2):e29-e40.

# Methods

## Retrospective analysis comparing PSA90 in ARPI-naïve patients with mCSPC newly initiated on apalutamide versus enzalutamide

### Primary endpoint



PSA90 response by 6 months



**Precision Point Specialty**  
A clinical EMR database



**Data sources**  
Linking patient level data



**Komodo Research Database**  
An insurance claims database



**Study period:** 12/16/2018 – 06/30/2025

Precision Point Specialty Analytics Database  
linked to Komodo Research Claims Database

≥1 paid claim or dispensation for any ARPI on or after  
December 16, 2019 (first paid claim or dispensation = index date)

N=26,334

Apalutamide as first  
paid claim or dispensation  
N=5,465

Enzalutamide as first  
paid claim or dispensation  
N=9,416

Patient selection criteria met

**Apalutamide cohort**  
N=1,513

**Enzalutamide cohort**  
N=1,445

### Statistical analyses

Power calculation

Adequately  
powered

Balance confounding  
baseline variables

IPTW

Compare OS  
between cohorts

Weighted Cox  
proportional  
hazards model



#### Inclusion criteria

- Adult patients with ARPI-naïve mCSPC



#### Exclusion criteria

- No detectable PSA
- Prior use of an ARPI or advanced treatment
- Diagnosis for another primary cancer

ARPI, androgen receptor pathway inhibitor; EMR, electronic medical records; IPTW, inverse-probability of treatment weighting; mCSPC, metastatic castration-sensitive prostate cancer; PSA, prostate specific antigen; PSA90, ≥90% decline in prostate specific antigen.

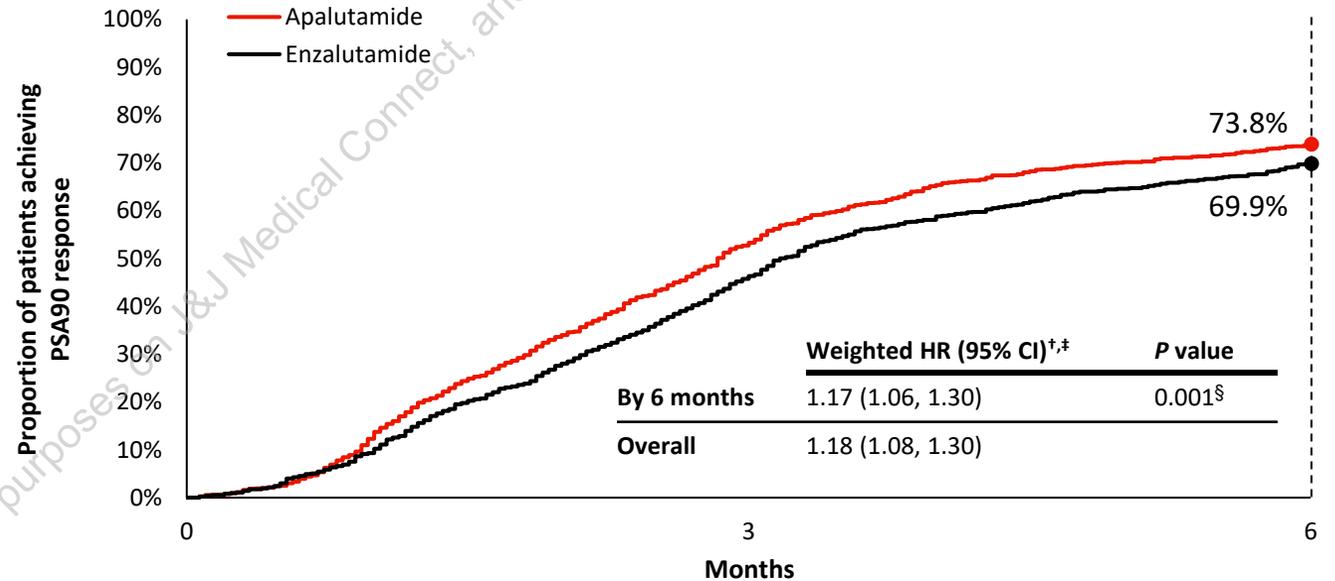
# Results

## Patient population

Select patient characteristics*	Apalutamide N=1,513	Enzalutamide N=1,445	Standardized difference, %
Mean age, years	73.5	73.5	0.6
<b>Race</b>			
White	62.5%	62.4%	0.3
Black	21.6%	21.7%	0.5
Other	11.1%	11.0%	0.2
Unknown	4.8%	4.8%	0.0
Medicare-insured	82.0%	82.1%	0.2
<b>Index year</b>			
<2020	16.8%	17.5%	2.0
2021	22.2%	22.5%	0.8
2022	20.6%	20.1%	1.3
2023	19.7%	19.1%	1.5
2024	13.8%	13.9%	0.2
2025	6.9%	6.9%	0.3
Median time between metastasis and index date, months	1.8 (0.7, 6.7)	1.8 (0.7, 6.7)	2.2
Median baseline PSA level, ng/mL	6.0	6.2	3.4
Mean Quan-CCI	10.1	10.0	0.7
<b>Metastasis type</b>			
Bone	58.8%	58.6%	0.5
Nodal	41.2%	40.1%	2.1
Visceral	16.6%	17.1%	1.3
Multiple sites	25.7%	25.5%	0.7
De novo mCSPC	45.6%	46.1%	1.1
Concurrent use of ADT	97.1%	96.3%	4.3

## PSA90 response

By 6 months: Apalutamide **↑ 17%** higher likelihood in achieving PSA90 response



Patients at risk at 6 months:

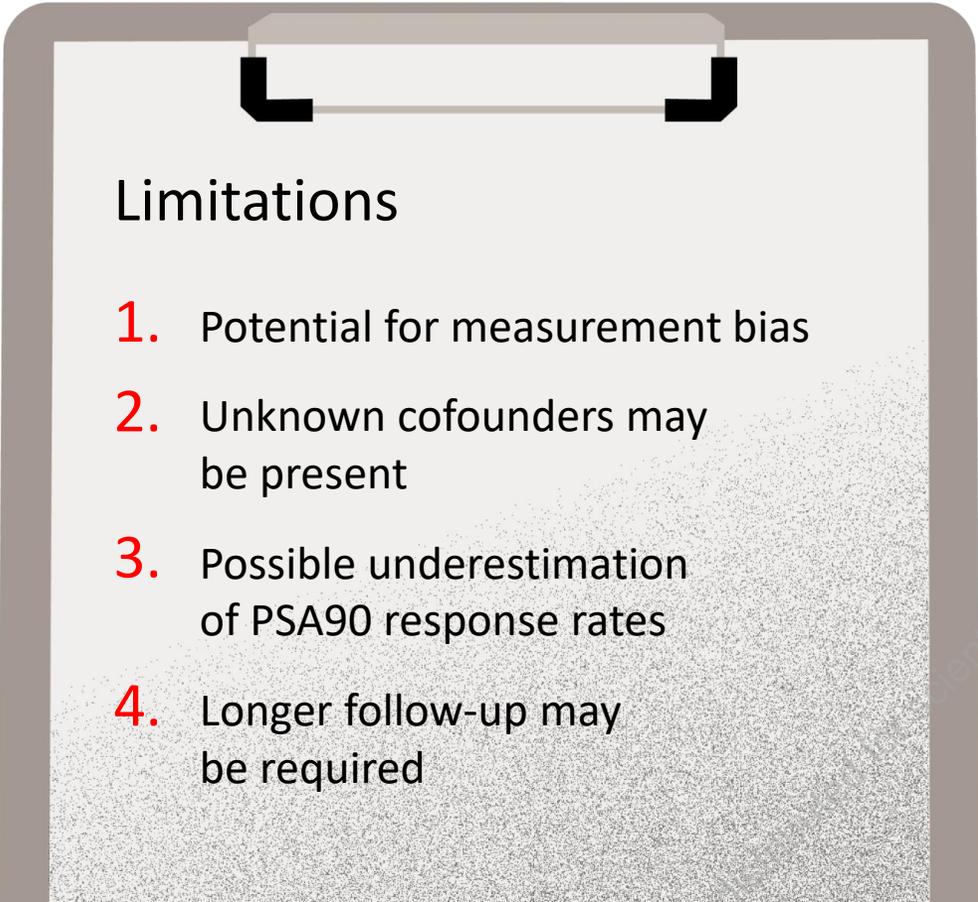
**Apalutamide:**  
236 (15.6%)

**Enzalutamide:**  
248 (17.2%)

\*After inverse probability of treatment weighting. <sup>†</sup>Propensity scores were generated using probability estimates from a logistic regression models using the following predictors: age, race, geographic region, payer, year of index date, time between metastasis and index date, time between first observed PC diagnosis and index date, de novo mCSPC, concurrent use of ADT, prior use of first-generation antiandrogens, bone antiresorptive therapy, most recent PSA level, earliest Gleason score, types of metastases (bone, nodal, visceral, and metastasis in multiple sites) and Quan-CCI score. Each patient was attributed an inverse-probability of treatment weight that was defined as follows: 1/(propensity score) for the apalutamide cohort and 1/(1-propensity score) for the enzalutamide cohort. Normalized inverse-probability of treatment weights were truncated at the 95th percentiles. <sup>‡</sup>A hazard ratio >1 indicates that the apalutamide cohort had a higher PSA90 rate compared with the enzalutamide cohort. <sup>§</sup>Significant at the 5% level.

ADT, androgen deprivation therapy; CI, confidence interval; HR, hazard ratio; mCSPC, metastatic castration-sensitive prostate cancer; PSA, prostate specific antigen; PSA90, ≥90% decline in prostate specific antigen; Quan-CCI, Quan-Charlson Comorbidity Index.

# Limitations and conclusions



## Limitations

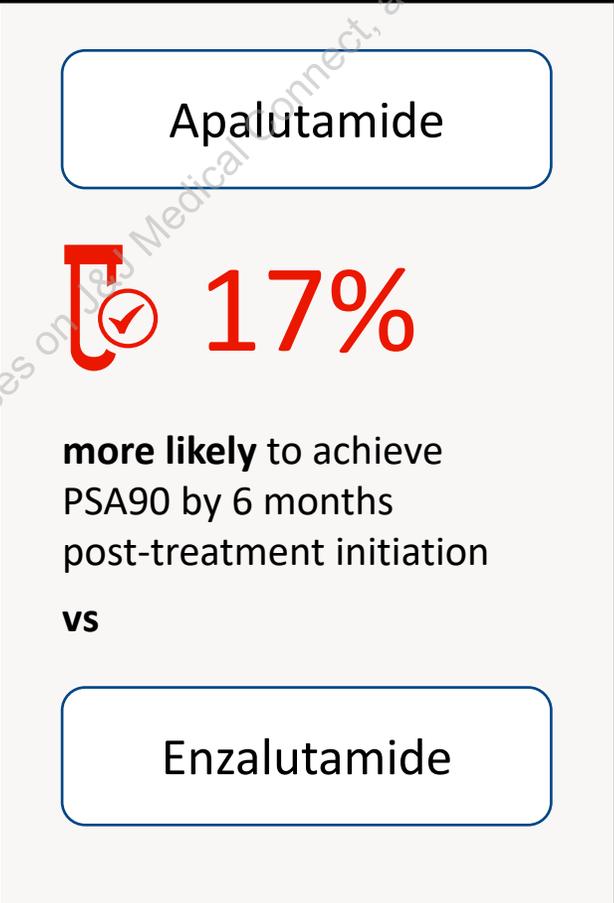
1. Potential for measurement bias
2. Unknown cofounders may be present
3. Possible underestimation of PSA90 response rates
4. Longer follow-up may be required

APA, apalutamide; ENZ, enzalutamide; mCSPC, metastatic castration-sensitive prostate cancer; PSA, prostate specific antigen; PSA90, ≥90% decline in prostate specific antigen.

1. Lowentritt B, et al. *Rev Urol.* 2024;23(2):e29-e40. 2. Chowdhury S, et al. *Ann Oncol.* 2023;34(5):477-85.

## Conclusions

In mCSPC patients **with a detectable PSA<sup>1</sup>**:



Apalutamide

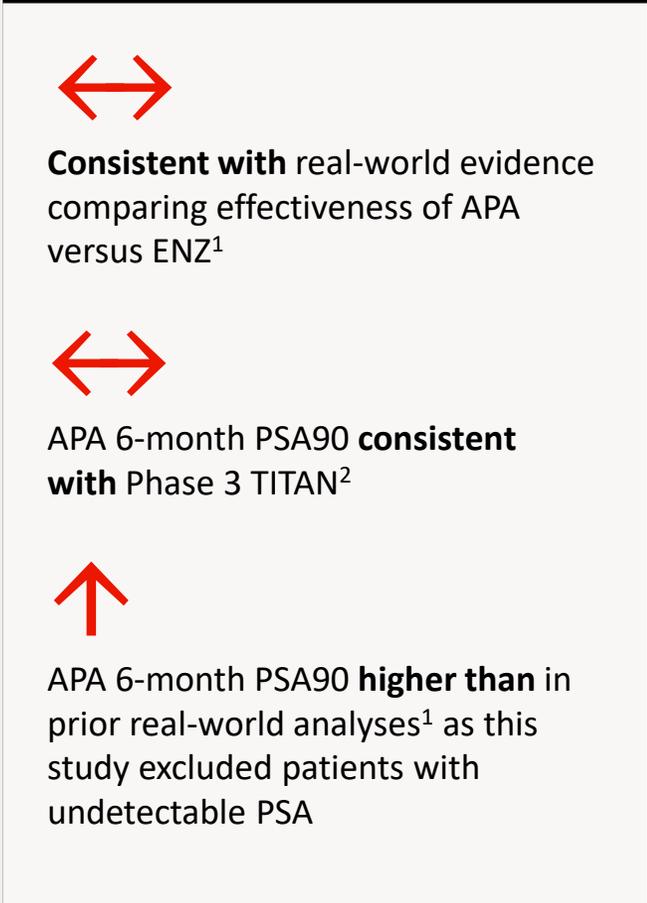
 **17%**

**more likely** to achieve PSA90 by 6 months post-treatment initiation

vs

Enzalutamide

Comparison with previous studies:





**Consistent with** real-world evidence comparing effectiveness of APA versus ENZ<sup>1</sup>



APA 6-month PSA90 **consistent with** Phase 3 TITAN<sup>2</sup>



APA 6-month PSA90 **higher than** in prior real-world analyses<sup>1</sup> as this study excluded patients with undetectable PSA