Describing Androgen Receptor Pathway Inhibitor use in Australia: A Real-World Analysis Study

Ben Tran, MBBS, FRACP[1,2], Swetlana Mactier, PhD[3], Mercedeh Ghadessi, PhD[4], Anna Williamson, PhD[5], Lydia Scott, PhD[5], Mahsa H. Kouhkamari, PhD[5], Sophie O'Haire[1,2], Nasreen Khan, PhD[4]

[1]Peter MacCallum Cancer Centre, Melbourne, Australia; [2]The Walter and Eliza Hall of Medical Research Institute (WEHI), Melbourne, Australia; [3]Bayer Australia, Sydney, Australia; [4]Bayer HealthCare Pharmaceuticals Inc., Whippany, NJ, USA; [5]IQVIA Solutions Australia, Sydney, Australia

This retrospective analysis of Australian prescription dispensing data – the first real-world study to compare darolutamide, enzalutamide, and apalutamide in the mHSPC setting in Australia – showed that patients on darolutamide were less likely to discontinue treatment than patients on enzalutamide or apalutamide.

Time to discontinuation was longest with darolutamide.

Patients receiving enzalutamide or apalutamide who switched to other ARPIs, mostly switched to darolutamide.

SUMMARY

- Australia offers a unique opportunity to study use of androgen receptor pathway inhibitors (ARPIs) to treat metastatic hormone-sensitive prostate cancer (mHSPC) as darolutamide, enzalutamide, and apalutamide have all been reimbursed since 2023
- Using data on retail pharmacy dispensing, this retrospective study of 3,930 patients showed that fewer patients treated with darolutamide discontinued treatment than patients treated with enzalutamide or apalutamide, and that time to discontinuation was longest with darolutamide. Although switching between ARPIs was minimal, patients receiving enzalutamide or apalutamide who switched mostly switched to darolutamide
- Findings should be interpreted taking into consideration the limitations inherent to retrospective studies using administrative data. One of the two datasets used (NostraData™) did not include information from pharmacies in public hospitals, which may have introduced bias

BACKGROUND

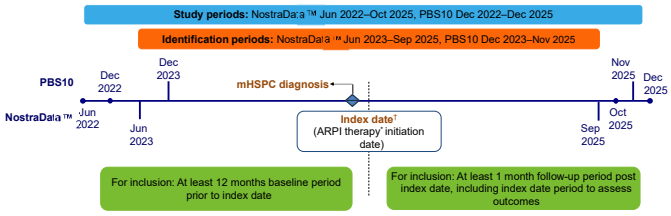
- Androgen receptor pathway inhibitors (ARPIs) such as darolutamide (DARO), enzalutamide (ENZA), apalutamide (APA), and abiraterone (ABI) in combination with androgen deprivation therapy (ADT), with or without docetaxel, are recommended for the treatment of metastatic hormone-sensitive prostate cancer (mHSPC)[1,2], as supported by data from multiple randomised controlled clinical studies[3–6]
- Since reimbursement of ARPIs, Australian clinical practice has shifted to combination therapy[7,8], however real-world data to bolster clinical evidence is limited[9]

OBJECTIVE

- This is the first real-world, retrospective study that describes ARPI utilisation among patients with metastatic hormone-sensitive prostate cancer (mHSPC) in Australia, following reimbursement by the Pharmaceutical Benefits Scheme (PBS)*. The endpoints included trends in ARPI uptake, time to treatment discontinuation, and ARPI switching patterns

STUDY DESIGN

- This study retrospectively analysed de-identified longitudinal prescription dispensing data collected in Australia from NostraData™, covering approximately 75% of retail pharmacy dispensing nationwide. Since the accuracy of PBS data is well established, a 10% sample of PBS data (PBS10) was used to support the NostraData™ findings in the darolutamide arm



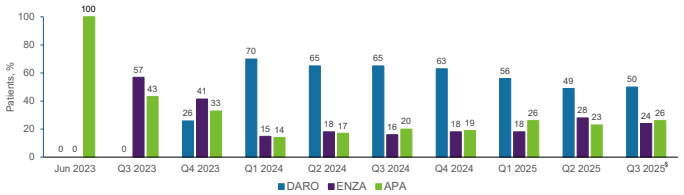
PATIENT CHARACTERISTICS

- A total of 3,930 patients received an ARPI dispensed under a PBS item code for mHSPC (DARO 1,915, ENZA 996, APA 1,019)
- Overall median age was 74 years (IQR 68–80) and was similar across ARPI subgroups
- A slightly higher proportion of patients were in the 5th quintile (most advantaged) of the patient Socio-Economic Indexes for Areas (SEIFA) in all ARPI subgroups
- Medical oncologists prescribed the majority (~70%) of ARPI medications
- The median time from first PC therapeutic/medicinal treatment to mHSPC was longer for patients receiving ENZA than for those receiving DARO or APA

Patient characteristics		DARO (n=1915)	ENZA (n=996)	APA (n=1019)
Age, years	median (IQR) [range]	74.3 (67.2–80.3) [18.8 , 97.4]	73.8 (67.3–79.3) [21.8 , 98.1]	75.1 (68.6–80) [19.1 , 94.5]
Age category, n (%)	<65 years 65–74 years >74–84 years >84 years	376 (20) 561 (29) 703 (37) 275 (14)	191 (19) 317 (32) 378 (38) 110 (11)	168 (16) 292 (29) 422 (41) 137 (13)
Patient SEIFA, n (%)	1st quintile (most disadvantaged) 2nd quintile 3rd quintile 4th quintile 5th quintile (most advantaged)	280 (15) 333 (17) 321 (17) 351 (18) 630 (33)	155 (16) 177 (18) 189 (19) 197 (20) 278 (28)	171 (17) 176 (17) 215 (21) 199 (20) 258 (25)
Patient state, n (%)	New South Wales Victoria Queensland Western Australia South Australia Australian Capital Territory Tasmania Northern Territory	702 (37) 493 (26) 242 (13) 268 (14) 124 (6) 26 (1) 50 (3) 10 (1)	346 (35) 300 (30) 171 (17) 100 (10) 37 (4) 12 (1) 26 (3) 4 (0)	334 (33) 290 (28) 166 (16) 116 (11) 66 (6) 30 (3) 16 (2) 1 (0)
Prescriber type, n (%)	Medical oncologist Urologist Radiation oncologist Other‡ Unknown	1301 (68) 115 (6) 44 (2) 331 (17) 124 (6)	691 (69) 39 (4) 6 (1) 170 (17) 90 (9)	712 (70) 56 (5) 10 (1) 159 (16) 82 (8)
Time from first PC treatment to mHSPC diagnosis (index date ARPI initiation), days	median (IQR), mean	44 (0–229), 444	96 (14–412), 523	49 (5–177), 417

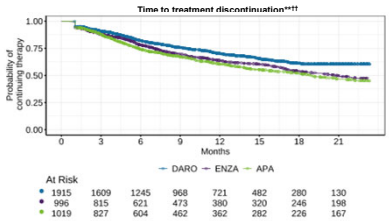
TREND IN ARPI UPTAKE

- The proportion of patients with mHSPC starting treatment with DARO increased from 26% in Q4 2023 to 50% in Q3 2025, whereas proportions for ENZA and APA declined from 41% to 24% and from 33% to 26%, respectively



TREATMENT DURATION

- At 18 months, the probability of treatment discontinuation¶ was 39% for DARO (95% CI 36–41), 47% with ENZA (95% CI 43–50), and 49% for APA (95% CI 45–53); with a median follow-up¶ of 12.6 months (95% CI 12.2–13.1) for DARO, 16.6 (14.9–17.8) for ENZA, and 15.0 (13.8–16.3) for APA



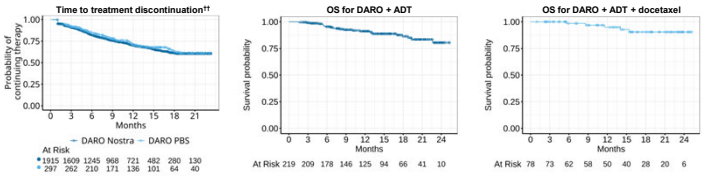
ARPI SWITCHING PATTERNS

- Minimal switching occurred between ARPIs. Patients receiving ENZA or APA predominantly switched to DARO, 74.6% and 60.0%, respectively

	Total patients, n (%)	DARO (n=1915)	ENZA (n=996)	APA (n=1019)
Treatment discontinuation	Censored	1379 (72.0)	614 (61.6)	607 (59.6)
	Stopped treatment‡‡	492 (25.7)	315 (31.6)	347 (34.1)
	Switched to different ARPI§§	44 (2.3)	67 (6.7)	65 (6.4)
Switch to other ARPIs	TOTAL SWITCH, n (%)	44	67	65
	Switch to DARO	N/A	50 (74.6)	39 (60.0)
	Switch to ENZA	15 (34.1)	N/A	18 (27.7)
	Switch to APA	17 (38.6)	11 (16.4)	N/A
	Switch to ABI	12 (27.3)	6 (9.0)	8 (12.3)

TREATMENT DURATION AND OVERALL SURVIVAL OF DAROLUTAMIDE PATIENTS IN PBS10

- Treatment duration with DARO was consistent between NostraData™ and PBS10
- OS analysis was from the DARO PBS10 sample. The OS rates at 24 months for DARO and ADT doublet therapy were comparable for ARANOTE[9] (80%) and PBS10 (81%) data



LIMITATIONS

- The limitations of the research methods include those of a retrospective descriptive study using administrative data such as selection bias, unmeasured risk factors, and the ability to determine association but not causation
- NostraData™ does not include medicines dispensed through hospital pharmacies. Consequently, treatments received predominantly in public hospital settings (e.g., docetaxel) are underrepresented

Footnotes

*Under the PBS, darolutamide was listed in December 2023, enzalutamide was listed in August 2023, and apalutamide was listed in June 2023.
†Illustration date only.
‡Other prescribers include registrars, interns, nurses, and general practitioners.
§Includes data from July–October 2025.
¶Probabilities for treatment discontinuation and median follow-up time are estimated using an unadjusted cumulative incidence (1-KM) and reversed KM plots, respectively.
**Death data unavailable; composite endpoints and competing risk analyses not feasible, potentially biasing KM estimates.
††Event is defined as discontinuation on index treatment. Discontinuation is defined as no ARPI dispensing for 31 days (days of supply) + 90 days (grace period).
‡‡No dispensings for a period of >90 days following end of supply.
§§Dispensed another ARPI within 90 days following end of supply.

Abbreviations

ABI, abiraterone; **ADT**, androgen deprivation therapy; **APA**, apalutamide; **ARPI**, androgen receptor pathway inhibitor; **DARO**, darolutamide; **ENZA**, enzalutamide; **IQR**, interquartile range; **mHSPC**, metastatic hormone sensitive prostate cancer; **OS**, overall survival; **PBS**, Pharmaceutical Benefits Scheme; **PC**, prostate cancer; **Q**, quarter; **SEIFA**, Socio-Economic Indexes for Areas.

References

1. Lowrance W et al. J Urol 2023; 209:1082–1090; **2.** Gillessen S et al. Eur J Cancer 2023;185:178–215; **3.** Hussain M et al. J Clin Oncol 2023;41(20):3595–3607; **4.** Chi KN et al. N Engl J Med 2019;381(1):13–24; **5.** Armstrong, AJ et al. J Clin Oncol 2019;37:2974–2986; **6.** Saad F et al. J Clin Oncol 2024;42:4271–4281; **7.** Prostate cancer | Cancer Council Victoria. https://www.cancervic.org.au/cancer-information/types-of-cancer/prostate_cancer/treatment_for_prostate_cancer.html; **8.** Sandhu K et al. In Urol Nephrol 2026; https://doi.org/10.1007/s11255-026-05003-9; **9.** McManus H. J Clin Oncol 2026;44:suppl 7; abstract 105.

Acknowledgments and funding

Min Hui Low and Beilei Wu of IQVIA contributed to data extraction and analysis. Medical writing support was provided by Louise Ashall, PhD and Louise Coghlin, ISMPP CMPP ®, of Luna, OPEN Health Communications (London, UK) and funded Bayer HealthCare Pharmaceuticals, Inc., in accordance with Good Publication Practice (GPP) guidelines (www.ismpp.org/gpp-2022).

Disclosures

The study was funded by Bayer. Prof. Ben Tran has received research funding from Amgen, Astellas, AstraZeneca, Bayer, BMS, Genentech, Ipsen, Janssen, Pfizer, Movember, and MSD; honorarium from Amgen, Astellas, AstraZeneca, Bayer, BMS, Ipsen, Janssen, Merck, MSD, Pfizer, Sanofi, and Tolmar; and has provided consulting advisory services for Amgen, Astellas, AstraZeneca, Bayer, Boehringer Ingelheim, BMS, Ipsen, IQVIA, Janssen, Merck, MSD, Novartis, Pfizer, Roche, Sanofi, Tolmar, and VIR Biotechnology. Presented at the Australian and New Zealand Urogenital and Prostate Cancer annual scientific meeting, Adelaide Convention Centre, South Australia, Australia, June 28–30, 2026.

Presenting author contact: Prof. Ben Tran (Ben.Tran@petermac.org)

Scan the QR code to download this poster and view the accompanying video.

Copies of this e-poster are for personal use only and may not be reproduced without written permission from ANZUP and the authors.