POSTER NUMBER: EE610

Population Impact of Performing *BRCA1/2* Testing to Guide Metastatic Castration-Resistant Prostate Cancer Treatment in Spain

Federico Rojo[1], Elena Castro[2], David Olmos[2], Virginia Lozano[3], Belen Sanz[3], Melissa Kirker[4], Allison Thompson[4], Neo Su[4], Yang Meng[5], Annika Bjerke[5], Divya Patil[5], Joaquin Mateo[6]

[1]IIS-Fundación Jiménez Díaz, University Hospital-UAM, CIBERONC, Madrid; [2]Department of Medical Oncology, Hospital Universitario 12 de Octubre, Madrid, Spain; [3]Pfizer, Madrid, Spain; [4]Pfizer, New York, US ; [5]Lumanity, New Jersey, US; [6]Prostate Cancer Research Group, Vall d'Hebron Institute of Oncology, Vall d'Hebron Barcelona Hospital Campus, Barcelona

Objective

To evaluate the population-level clinical impact in Spain measured in total additional life-years (LYs) and quality-adjusted life-years (QALYs) of implementing *BRCA1/2* testing versus no *BRCA1/2* testing to guide first-line treatment decisions with talazoparib plus enzalutamide for patients with mCRPC based on TALAPRO-2 data.

Context

Talazoparib plus enzalutamide is currently reimbursed by the National Health System in Spain only for mCRPC patients with *BRCA1/2* mutations (germline and/or somatic). According to literature, approximately 10% of mCRPC patients have *BRCA1/2* mutations.

Background

- Poly ADP-ribose polymerase inhibitors (PARPi) have changed the treatment paradigm for metastatic castration-resistant prostate cancer (mCRPC), and currently, *BRCA1/2* and HRR germline and somatic testing are recommended in clinical guidelines for these patients.
- Talazoparib (TALA), a PARPi, with enzalutamide (ENZ, an androgen-receptor pathway inhibitor [ARPi]) showed statistically significant benefit in overall survival (OS) over ENZ in the TALAPRO-2 (TP-2) trial, including the *BRCA1/2* subgroup[1,2,3].

Materials and Methods

A partitioned survival model informed by OS, radiographic progression-free survival (rPFS), and health utilities. Epidemiological data provided frequency of *BRCA1/2* mutation (10%) patients[4] (Figure 1).

Two strategies compared: no testing and universal germline and somatic *BRCA1/2* testing in mCRPC patients in Spain (Table 1).

Universal *BRCA1/2* testing in mCRPC:

- ***BRCA1/2* mutated (BRCAm) patients** rPFS and OS were estimated via parametric survival models fitted to TP-2 data for TALA + ENZ.
- **Non-BRCAm patients** rPFS and OS were based on hazard ratios (HRs) from TP-2 data for ENZ and indirect treatment comparisons (ITCs) for abiraterone (ABI), and docetaxel (DOC).

rPFS and OS estimation for non-BRCAm patients		
ENZ	ABI	DOC
HRs estimated for non-BRCAm vs BRCAm based on TP-2 data. rPFS HR = 0.48 (95% CI: 0.309, 0.755) OS HR = 0.60 (95% CI: 0.365, 0.971)	HRs ABI vs non-BRCAm ENZ from ITC.[5] ABI vs ENZ: rPFS HR = 1.42 (95 %CI: 1.15, 1.77) OS HR = 1.21 (95% CI: 0.97, 1.51)	HRs DOC vs non-BRCAm ENZ from ITC.[5] DOC vs ENZ: rPFS HR = 1.04 (95% CI: 0.50, 2.54) OS HR = 1.90 (95% CI: 1.34, 2.72)

No testing, unselected patients treated with ENZ, ABI, or DOC:

- The life years (LY) and quality-adjusted life years (QALY) were calculated as the weighted average of the outcomes for BRCAm and non-BRCAm patients.
- BRCAm results were based on TP-2 data for ENZ and ITCs for ABI and DOC.

Summary of outcomes of LYs and QALYs by population, testing strategy, and treatment is presented in Table 2.

Results

The analysis estimated 7,543 newly diagnosed mCRPC patients on active treatments in Spain in 2024, of which 754 are estimated to be BRCAm according to literature[4] (Figure 2).

- Over a lifetime, universal *BRCA1/2* testing in mCRPC would provide 0.25 LY and 0.24 QALY gains per mCRPC patient versus no testing (Table 3).
- For patients with mCRPC, universal *BRCA1/2* testing in mCRPC would yield additional 1,909 LYs and 1,793 QALYs over lifetime versus no testing (Table 3, Figure 3).

An electronic version of this poster may be obtained by scanning this QR code. Copies of this poster obtained through the QR code are for personal use only and may not be reproduced without permission. To request permission or to ask questions about the poster, please contact: virginia.Lozano@pfizer.com

References: 1. Agarwal et al. Lancet. 2023; 402(10398):291-303; 2. Pfizer. TALZENNA® (talazoparib) capsules, for oral use - HIGHLIGHTS OF PRESCRIBING INFORMATION; 3. Fizazi et al. Nature Medicine. 2024; 30(1):257-64; 4. González Del Alba A, et al., Clin Transl Oncol. 2021. 5. Castro et al., Future Oncol. 2025. 6. Leith et al., Adv Ther. 2022. 7. Instituto Nacional de Estadística (INE) , 2023 https://www.ine.es/; 8. Globocan 2022 https://gco.iarc.fr/en; 9. Cózar JM et al., BJU Int. 2012; 10. Expert panel estimation.

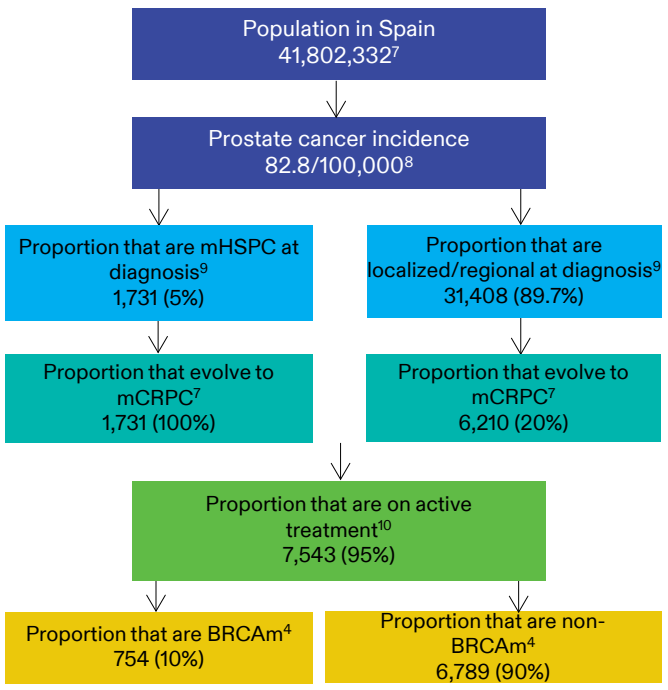
Acknowledgments: We thank the patients, their families and caregivers for their participation, as well as the trial centers that supported this trial. Medical writing support was provided by Lumanity and was funded by Pfizer. Enzalutamide was provided by Astellas Pharma Inc.

Table 1. mCRPC testing and treatment analysis

	No *BRCA1/2* testing	Universal *BRCA1/2* testing	
Population	Unselected patients	Non-BRCAm	BRCAm
Treatment	Non-targeted treatments: ENZ (35%), ABI (37%), or DOC (28%)[6]		Targeted treatment: TALA + ENZ

Note: The impact of testing is the difference between two strategies regarding patient-level or population-level LYs and QALYs.
Key: ABI, abiraterone; DOC, docetaxel; ENZ, enzalutamide; LY, life year; mCRPC, metastatic castration resistant prostate cancer; QALY, quality adjusted life year; TALA, talazoparib.

Figure 1. Spain mCRPC patient cohort



Key: mCRPC, metastatic castration resistant prostate cancer; mHSPC, metastatic hormone-sensitive prostate cancer.

Table 2. Summary outcomes of LYs and QALYs by population, testing strategy, and treatment

Population	LYs/QALYs			
	TALA+ ENZ	ENZ	ABI	DOC
BRCAm (10%)	4.92 / 3.99	3.05 / 2.01*	2.18 / 1.44*	1.86 / 1.36*
Non-BRCAm (90%)	N/A	4.75 / 3.53	4.02 / 2.83	2.73 / 2.11
Unselected patients	N/A	4.58 / 3.37	3.83 / 2.69	2.64 / 2.03

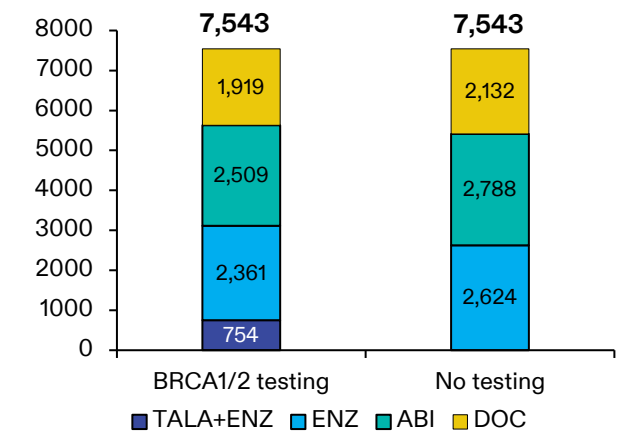
Note: *These values are only used as inputs in the no *BRCA1/2* testing strategy to calculate the weighted average of the outcomes with non-targeted treatments for BRCAm and non-BRCAm patients.
Key: ABI, abiraterone; DOC, docetaxel; ENZ, enzalutamide; LYs, life years; QALYs, quality adjusted life years; TALA, talazoparib.

Table 3. Summary of model results

Impact of *BRCA1/2* testing – patient-level		
Testing strategy	**LYs**	**QALYs**
BRCA1/2 testing	4.01	2.98
No testing	3.76	2.74
Incremental	**0.25**	**0.24**
Impact of *BRCA1/2* testing – population-level		
Testing strategy	**LYs**	**QALYs**
BRCA1/2 testing	30,248	22,489
No testing	28,338	20,696
Incremental	**1,909**	**1,793**

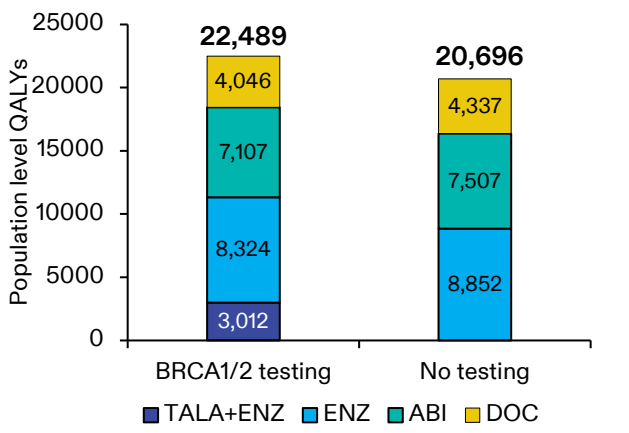
Key: LYs, life years; QALYs, quality adjusted life years.

Figure 2. Total mCRPC patients treated with each first-line treatment



Key: ABI, abiraterone; DOC, docetaxel; mCRPC, metastatic castration resistant prostate cancer; TALA +ENZ, talazoparib +enzalutamide.

Figure 3. Population-level QALYs by treatment



Key: ABI, abiraterone; DOC, docetaxel; TALA +ENZ, talazoparib +enzalutamide; QALYS, quality-adjusted life-years.

Conclusions

- A universal *BRCA1/2* testing approach in prostate cancer yields meaningful clinical gains at the population-level by detecting *BRCA1/2*-deficient patients who would benefit from a targeted PARPi-based treatment with talazoparib in combination with enzalutamide.
- These results support implementing universal germline and somatic testing of *BRCA1/2* alterations for all mCRPC patients in Spain to enable optimal, personalized treatment.

Presented at the ISPOR-EU • November 9-12, 2025 • Glasgow, Scotland, UK