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GUARD **INTERNATIONAL** **SYMPOSIUM**

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 PRESENCIAL RETRANSMITIDO EN DIRECTO
FACE-TO-FACE AND LIVE STREAMING

26-27 JUNIO 2025

Espacio Maldonado, Madrid

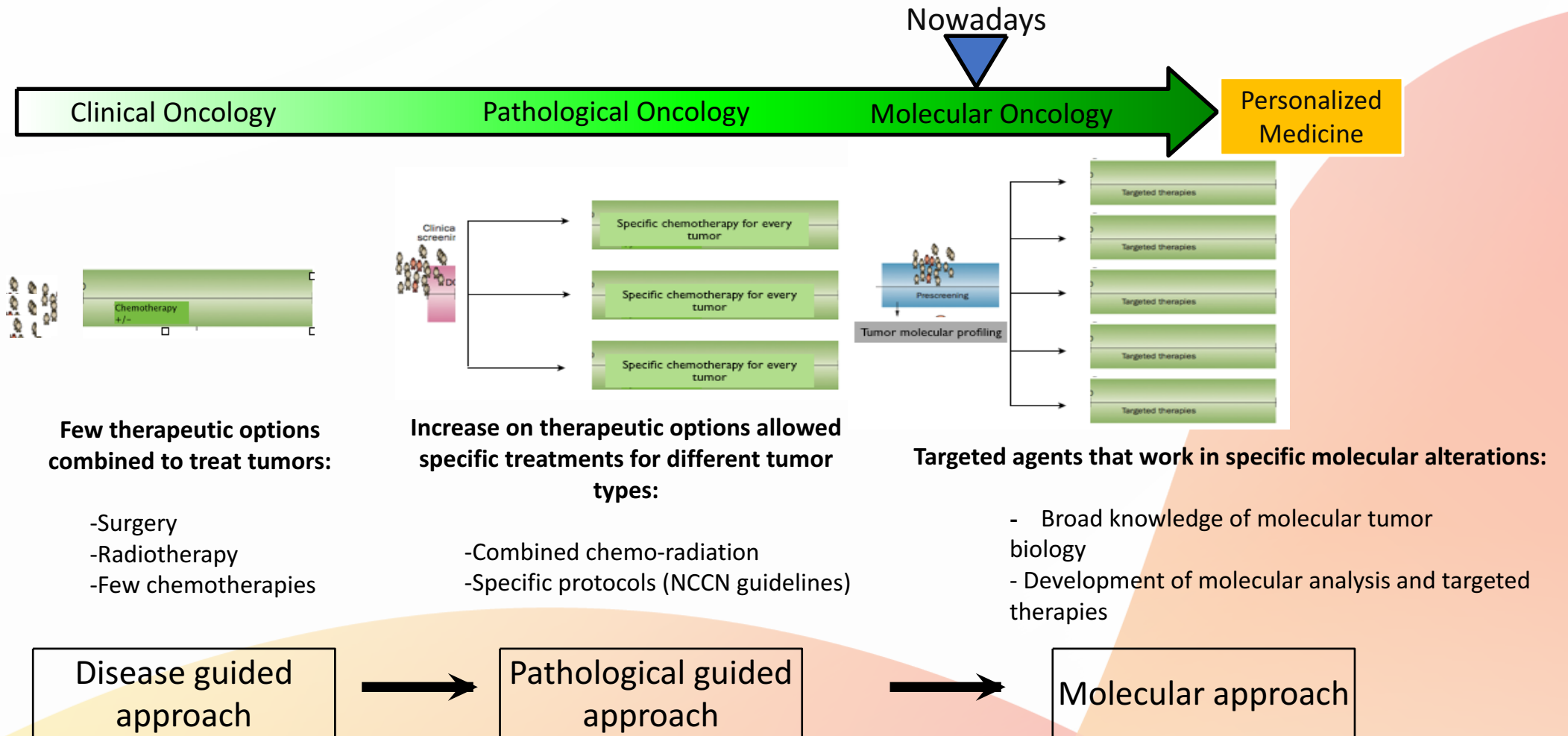
¿HA LLEGADO LA MEDICINA DE PRECISIÓN AL CÁNCER DE PRÓSTATA HORMOSENSIBLE METASTÁSICO?

Dr. Joan Carles
Jefe de Sección
Hospital Universitario Vall d'Hebron
Barcelona

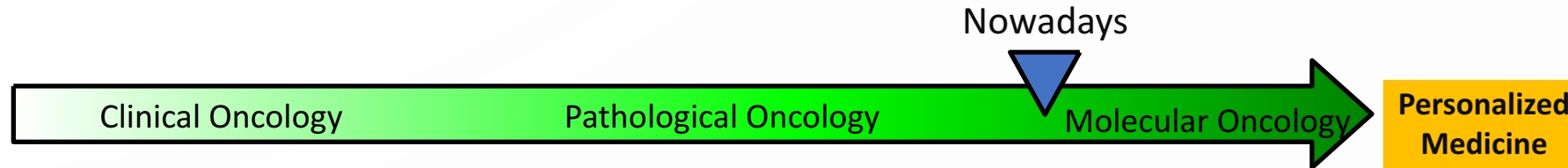
Disclosures

- Employee: Vall d'Hebron University Hospital, Teknon Oncology Department
- Consultant and scientific advisory board attendee: Amgen, Astellas, Bayer, BMS, MSD, Johnson & Johnson, Sanofi, Pfizer, Novartis (AAA)
- Speaker bureau: Asofarma, Astellas, Bayer, Johnson & Johnson, Sanofi
- Others: CAMDHA Agency
- Institutional Studies Collaborations: AB Science, Aragon Pharmaceuticals, Arog Pharmaceuticals, INC, Astellas Pharma, Astrazeneca AB, Aveo Pharmaceuticals INC, Bayer AG, Blueprint Medicines Corporation, BN Immunotherapeutics INC, Boehringer Ingelheim España, S.A., Bristol-Myers Squibb International Corporation (BMS), Clovis Oncology, INC, Cougar Biotechnology INC, Deciphera Pharmaceuticals LLC, Exelixis INC, F. Hoffmann-La RocheLTD, Genentech INC, Glaxosmithkline, SA, Incyte Corporation, Janssen-Cilag International NV, Karyopharm Therapeutics INC., Laboratoires Leurquin Mediolanum SAS, Lilly, S.A., Medimmune, Millennium Pharmaceuticals, INC., Nanobiotix SA, Novartis Farmacéutica, S.A., Pfizer, S.L.U, Puma Biotechnology, INC, Sanofi-Aventis, S.A., SFJ Pharma LTD. II, TevaPharma S.L.U.

Conceptual evolution of cancer treatment



Conceptual evolution of cancer treatment



First “magic bullets”:

- BCR/ABL Translocation-imatinib
- HER 2 Amplification –Trastuzumab

Push in Molecular Biology of Cancer

ARTICLE

doi:10.1038/nature12477

Signatures of mutational processes in human cancer

A list of authors and their affiliations appears at the end of the paper

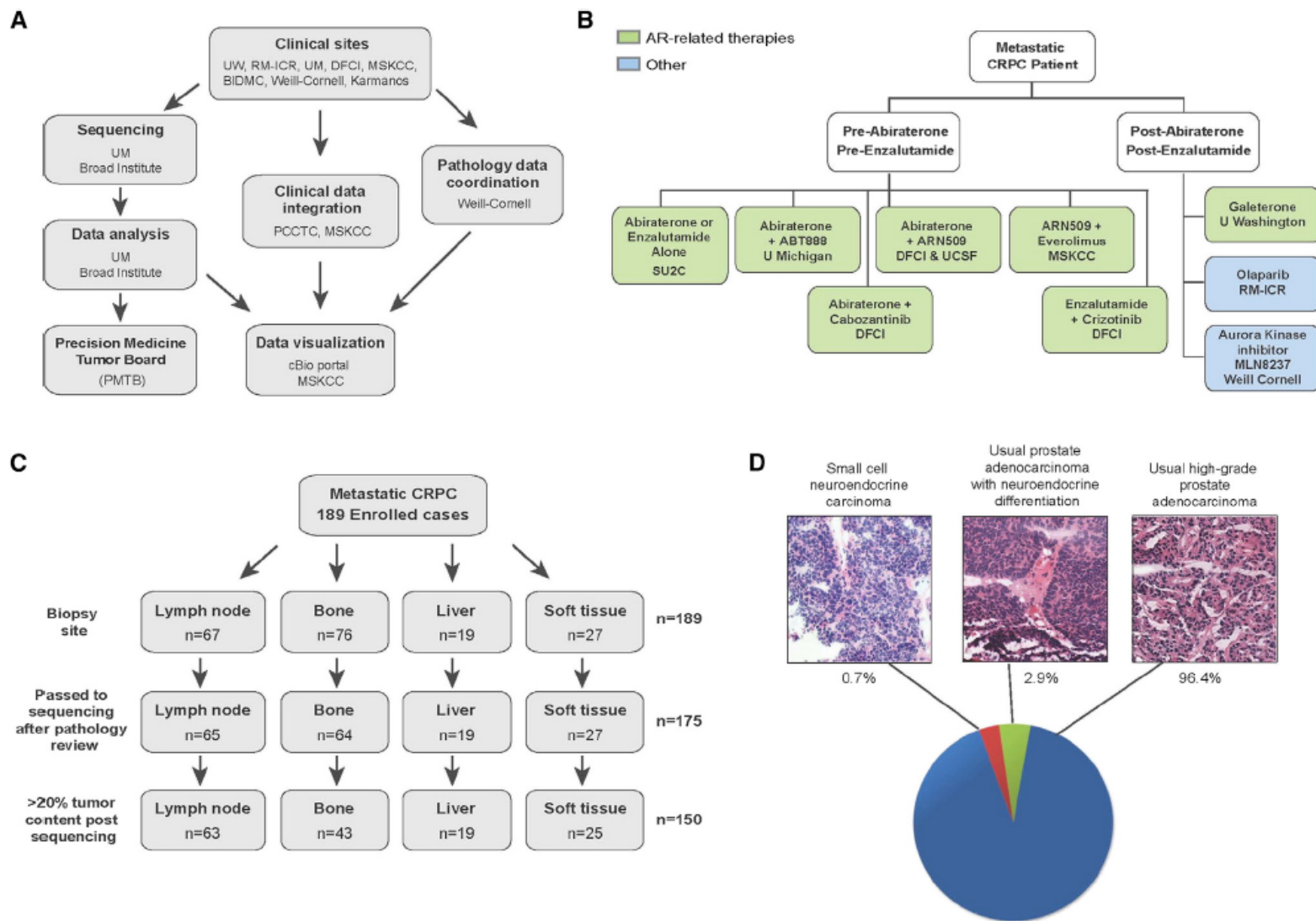
Social attention (Nixon declares war on cancer)

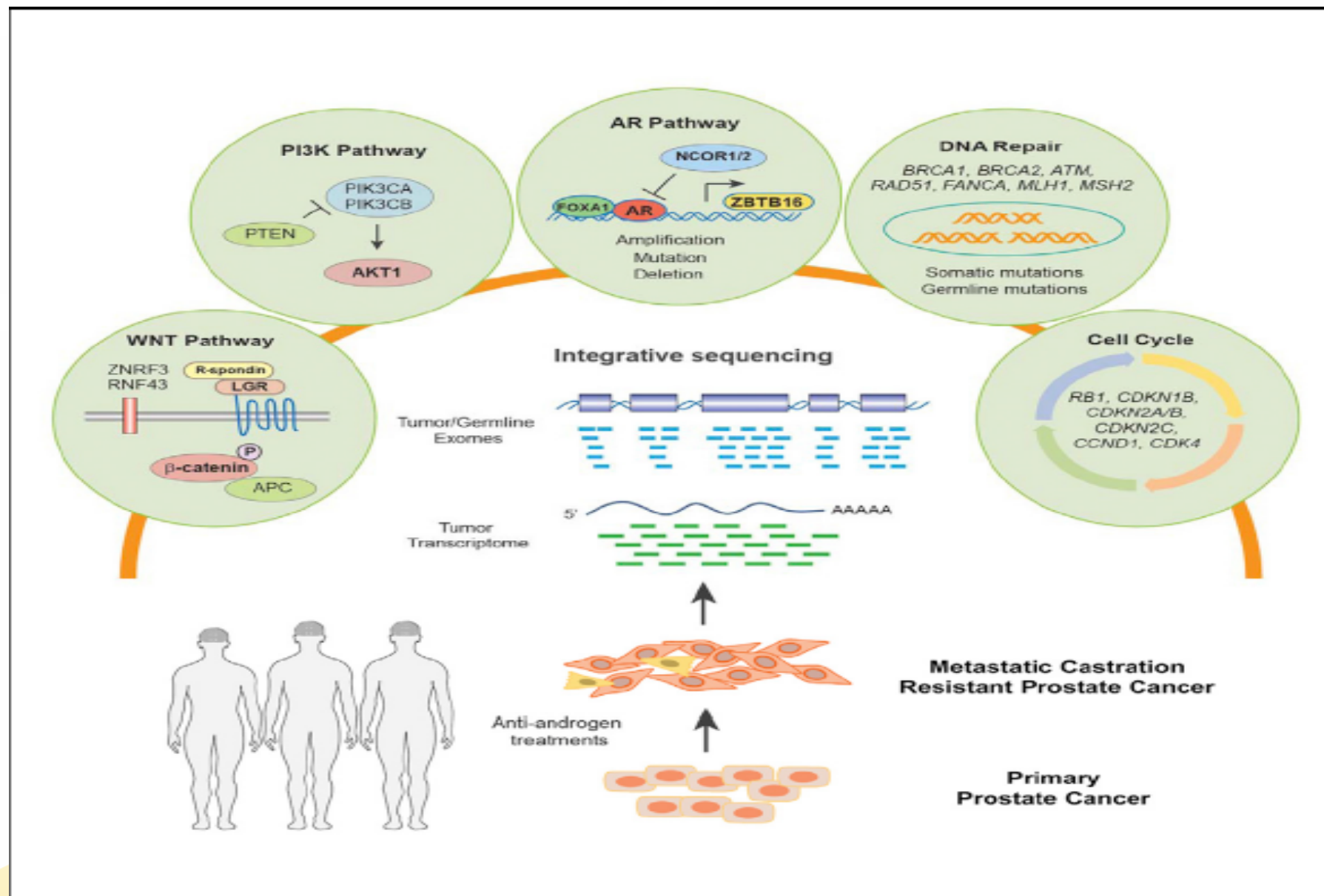


Pharma expands the pipeline

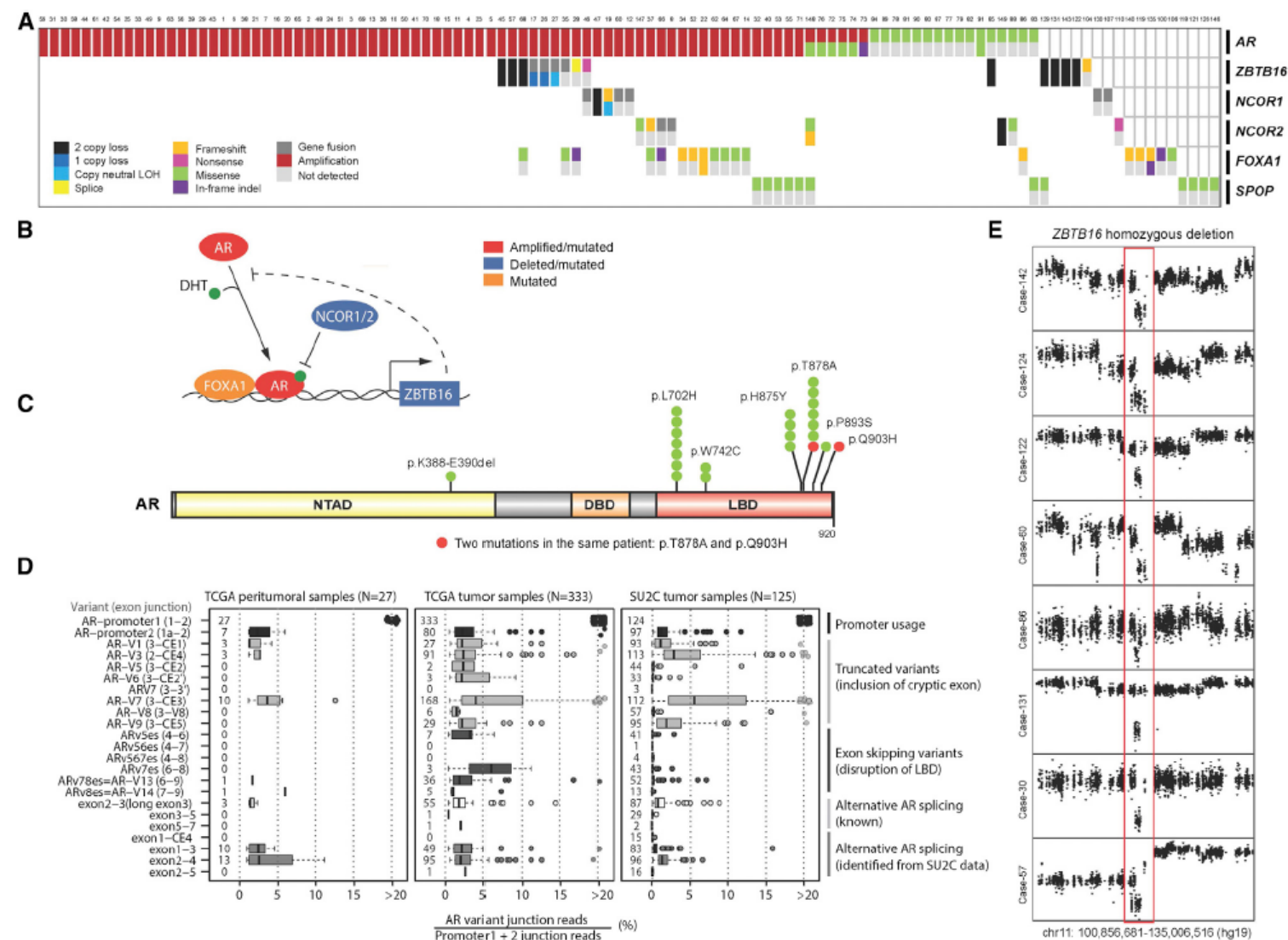


Changes in the last 15 years

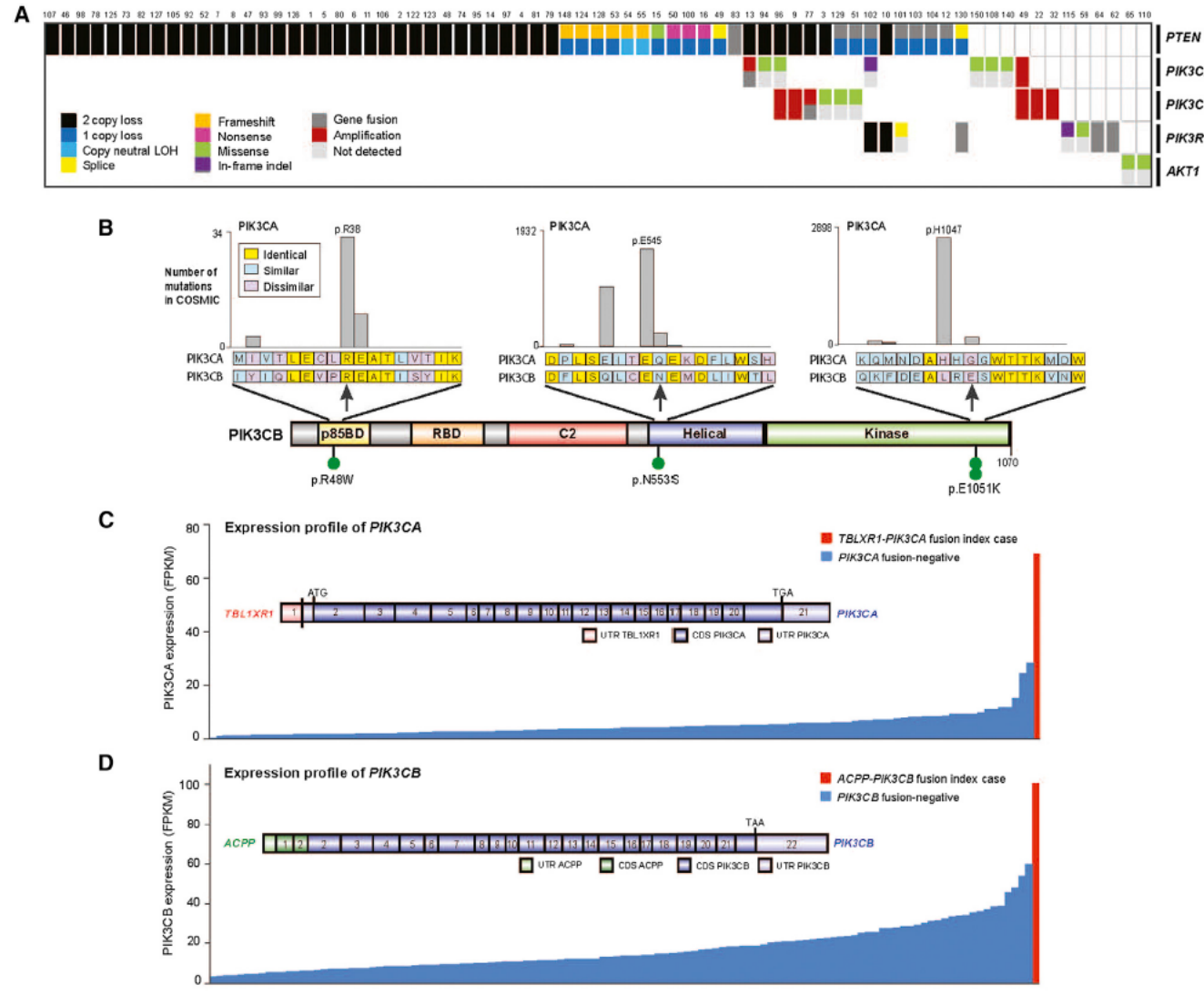




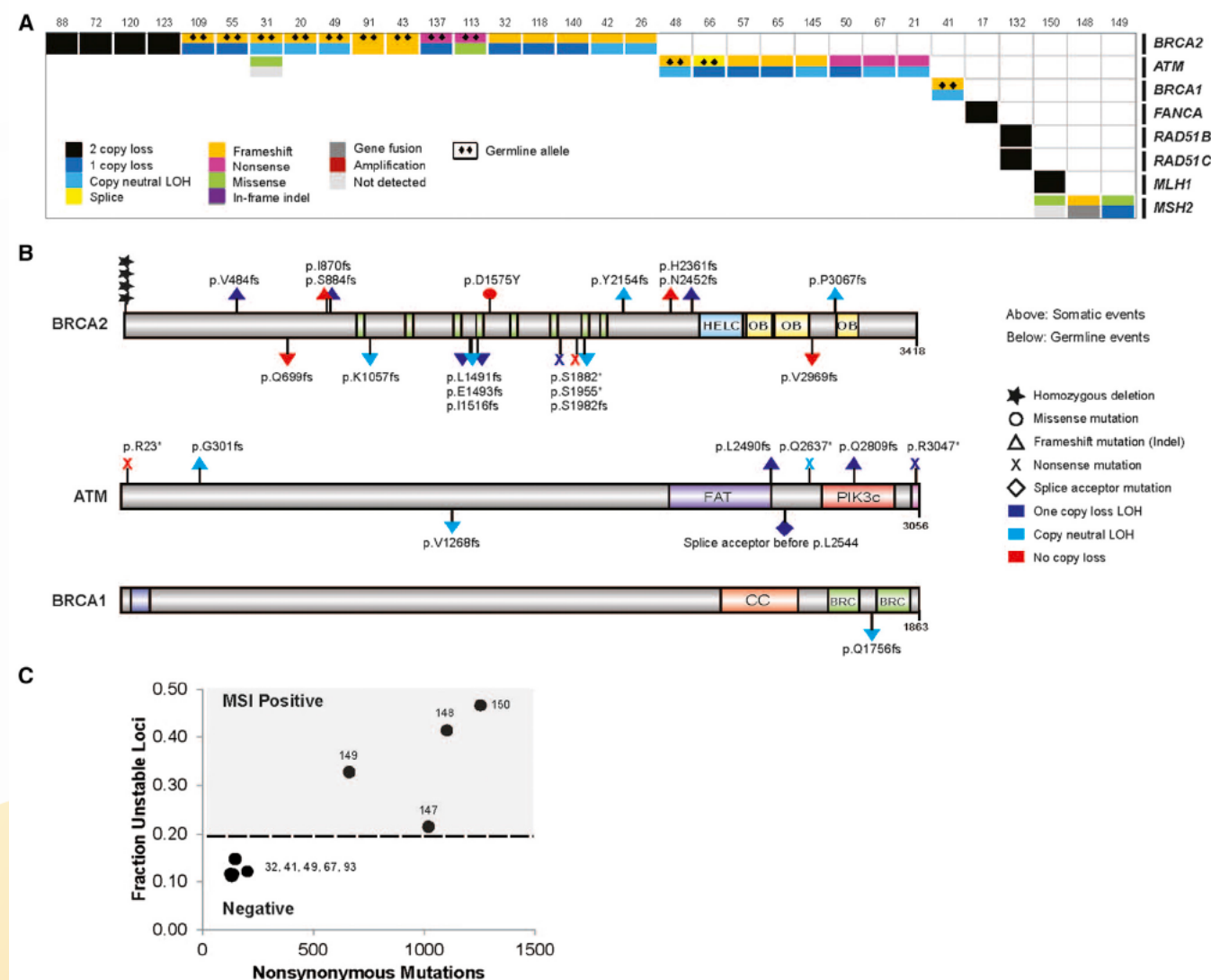
Aberrations in AR



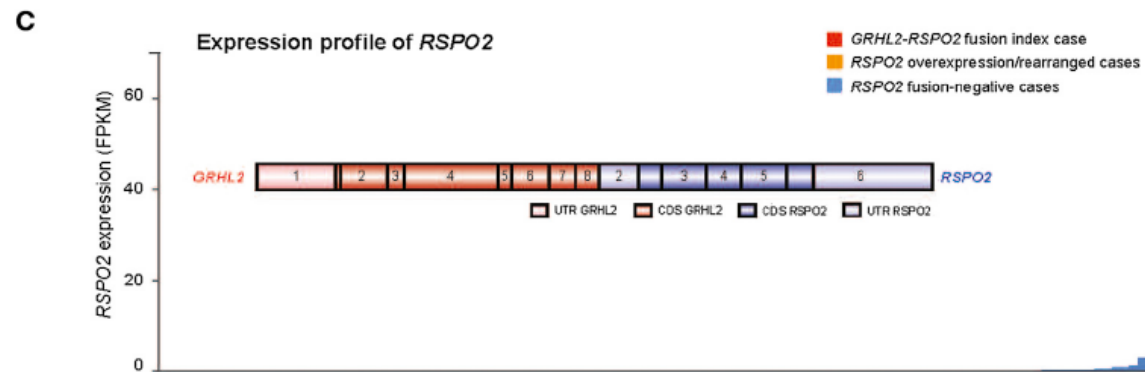
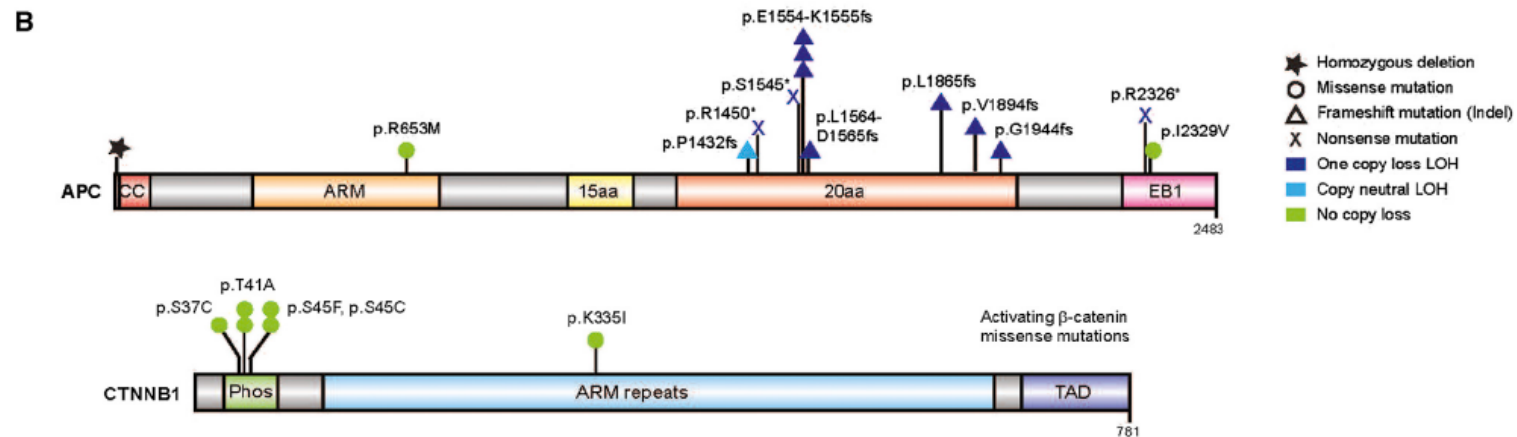
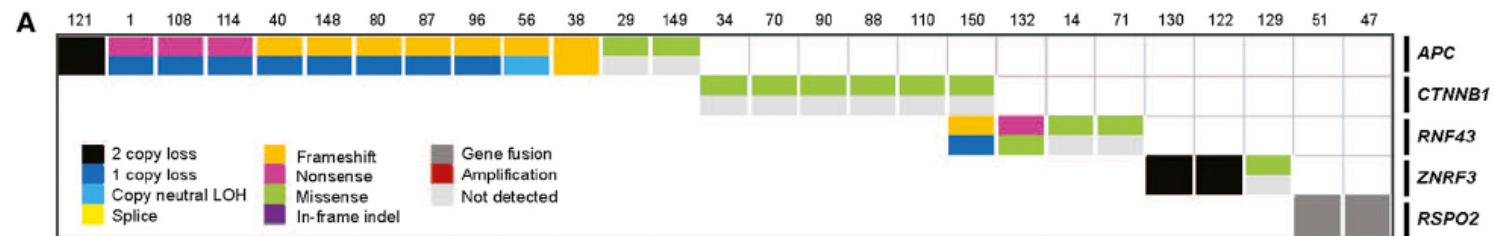
Aberrations on PI3k Pathway



Aberrations in DNA repair pathway

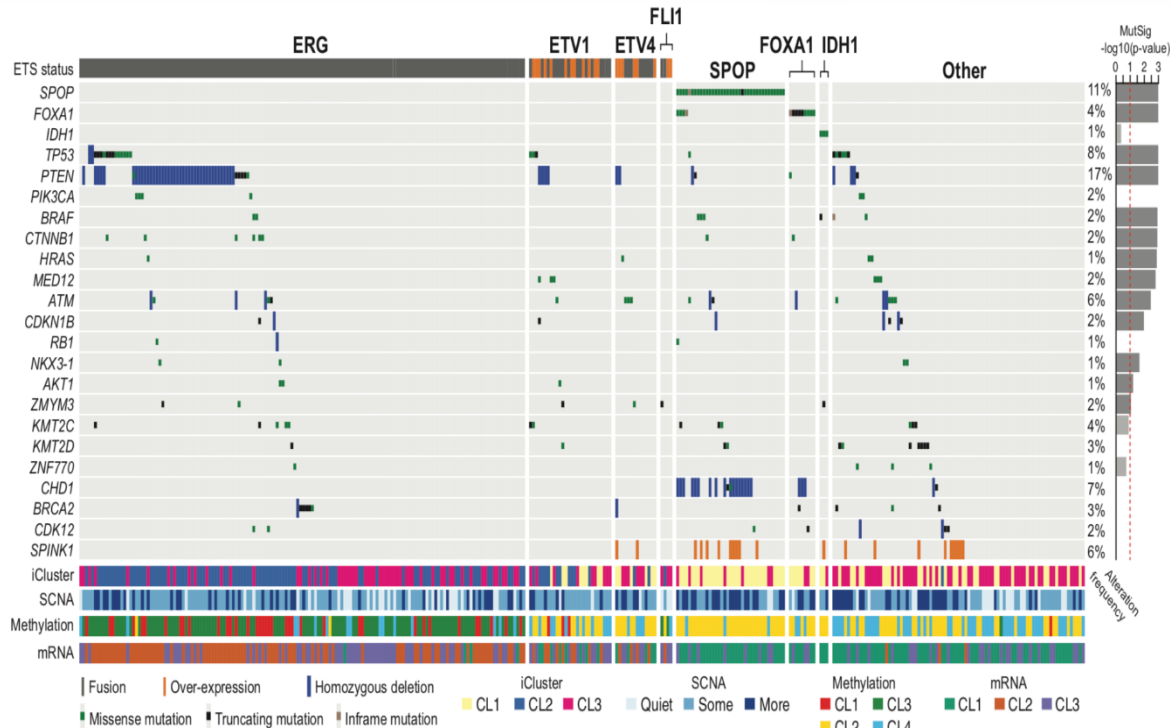


Aberrations in Wnt pathway



The genomic landscape of prostate cancer

LOCALIZED DISEASE

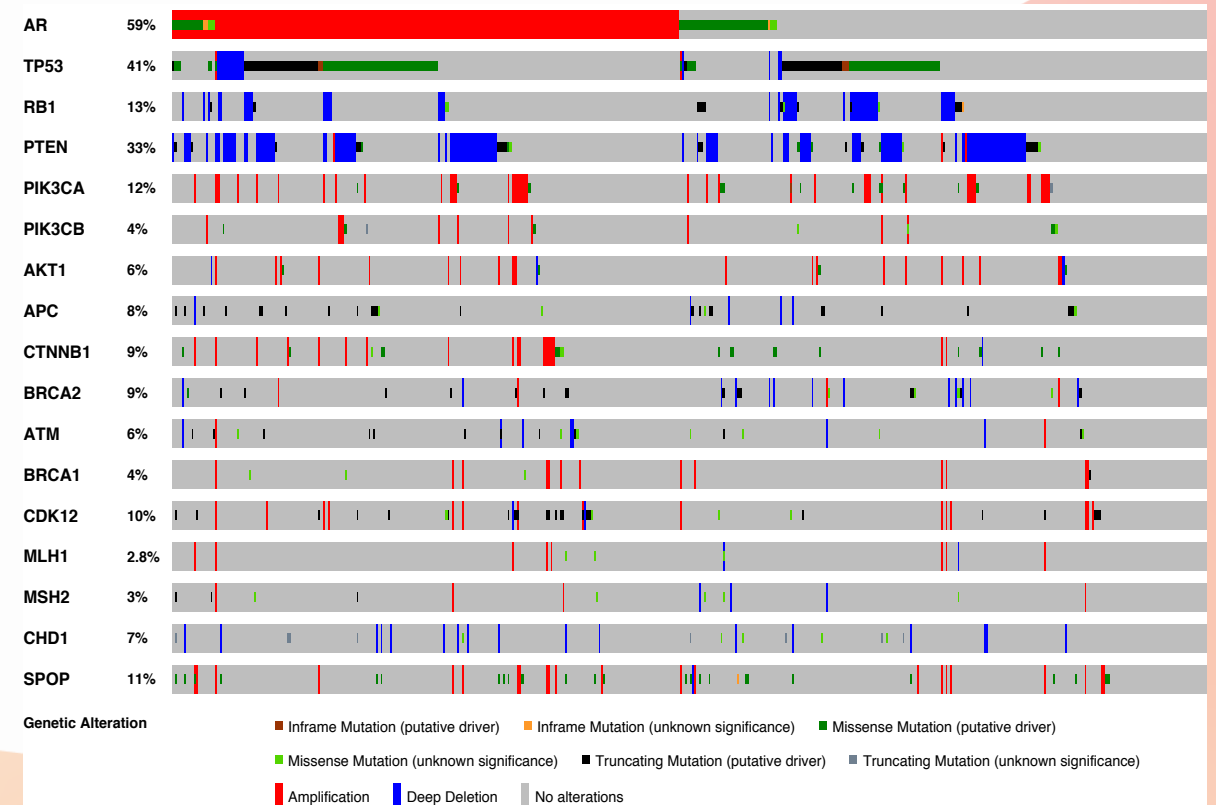


TCGA. Abehouse et al Cell 2015

333 PRIMARY TUMORS

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METASTATIC DISEASE

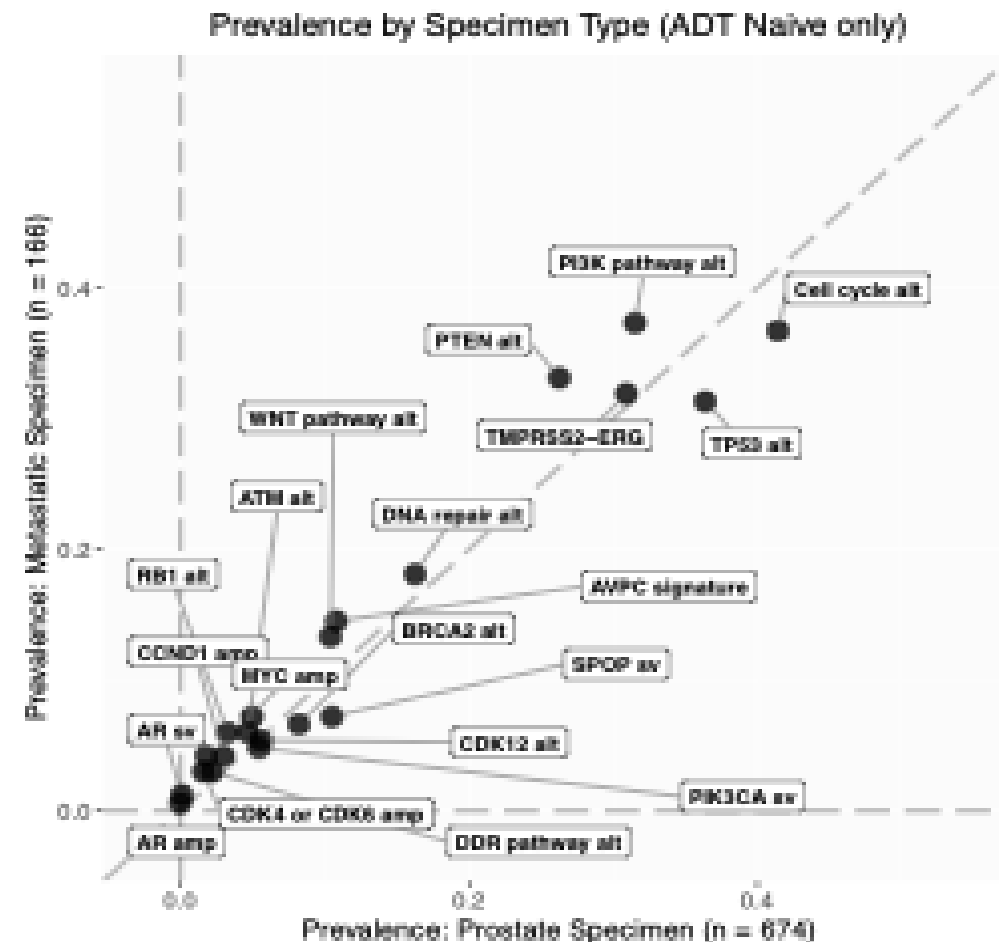
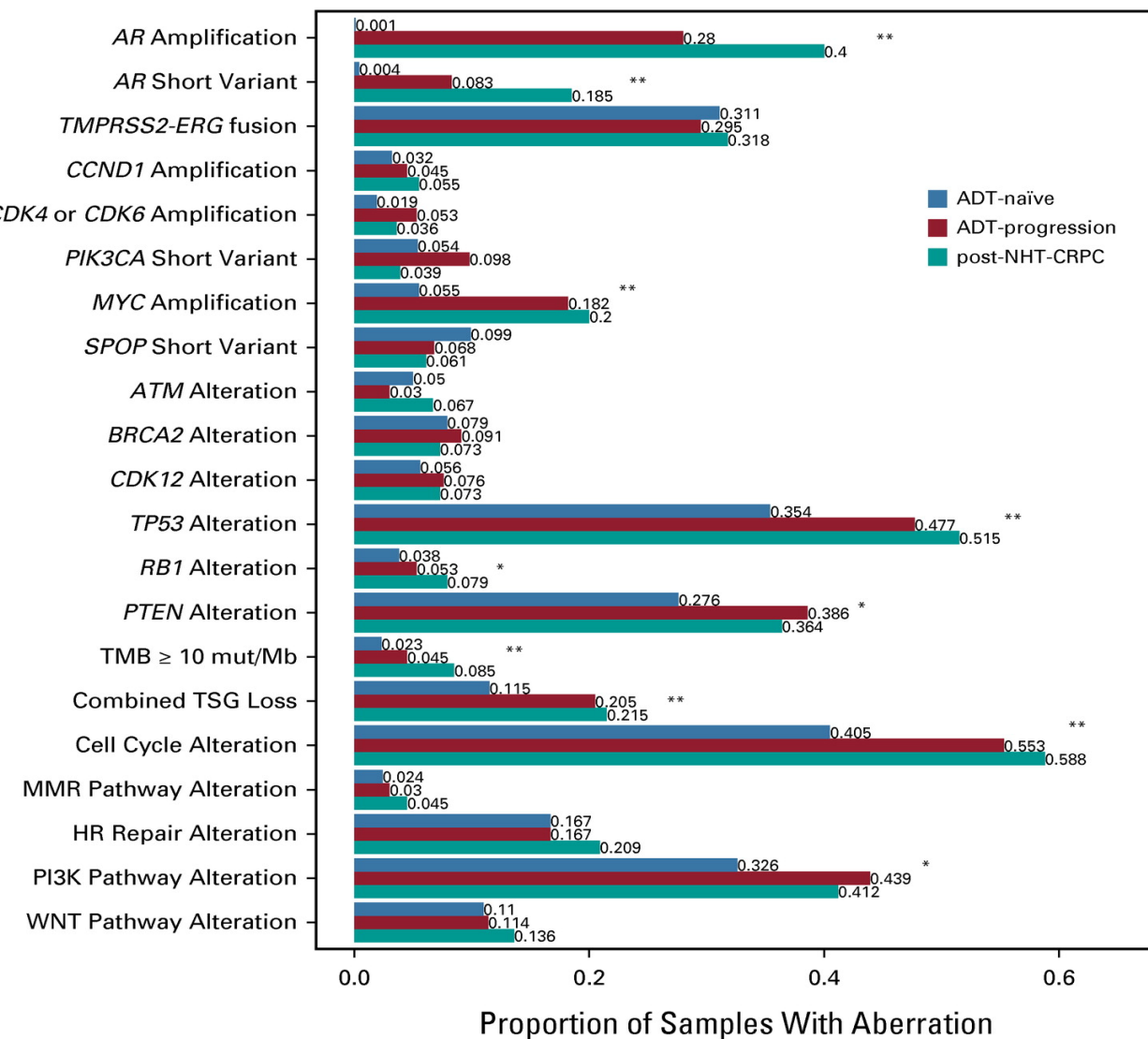


SU2C-PCF mCRPC Dream Team Study
n=432 (Abida et al, PNAS 2019)

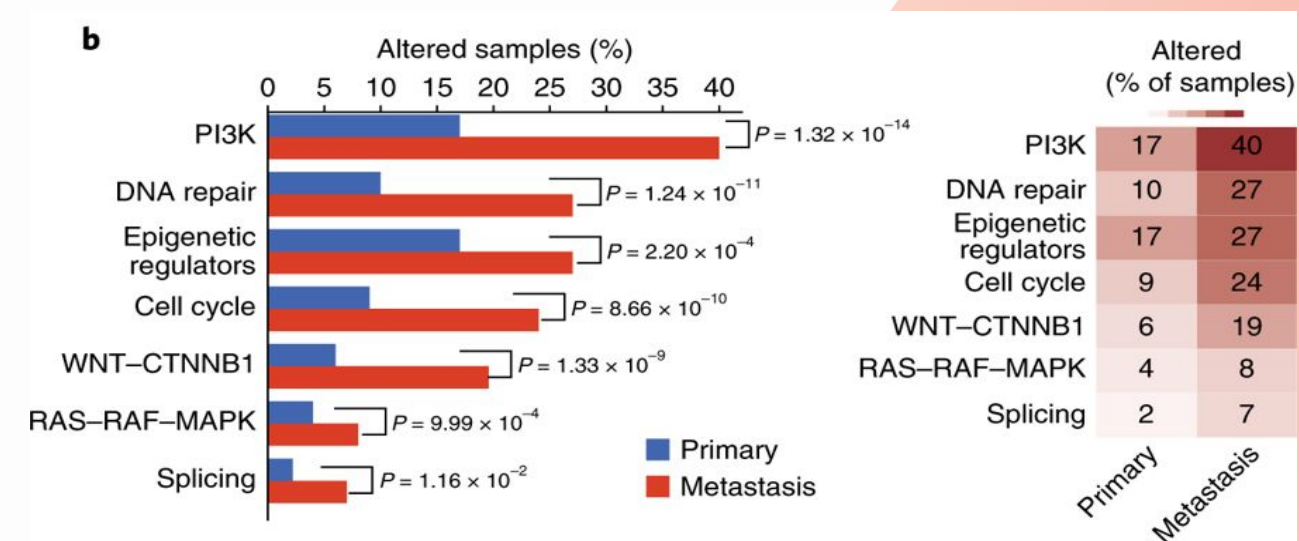
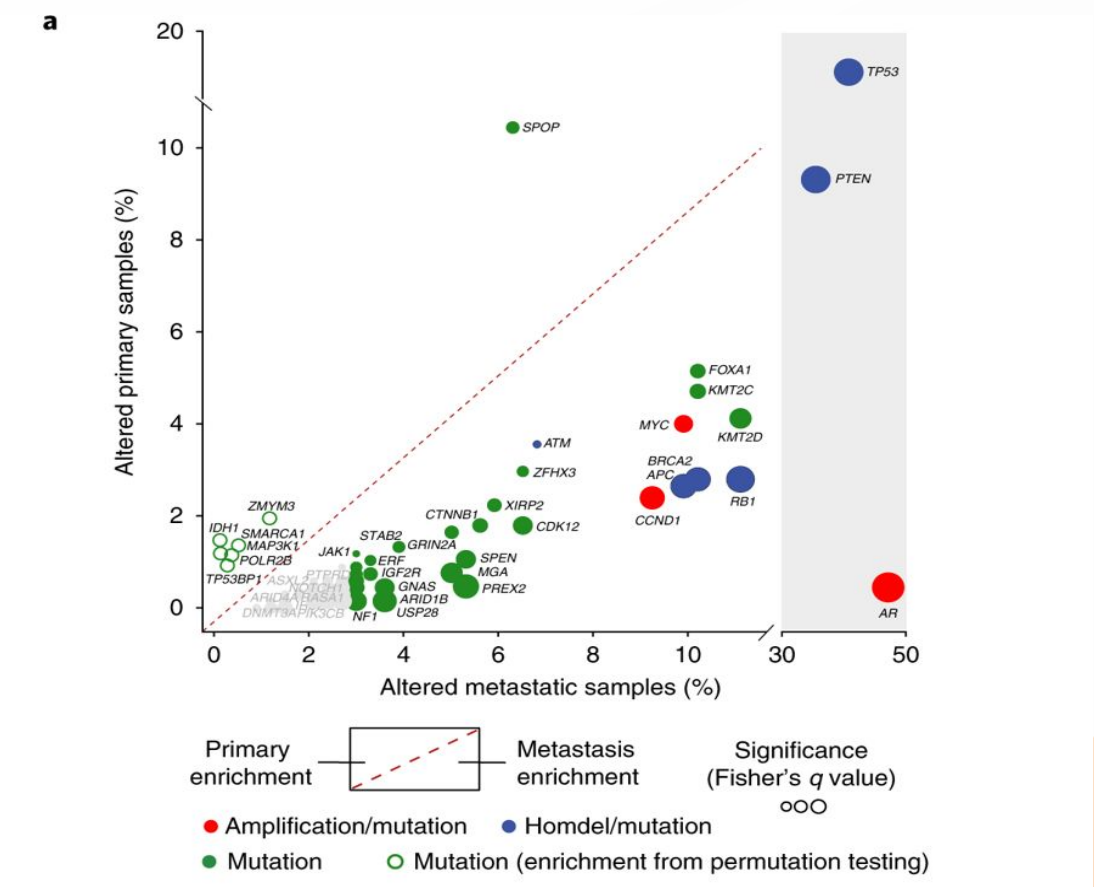
First published at Robinson et al, Cell 2015 (n=150)



Genomics of HSPC vs CRPC



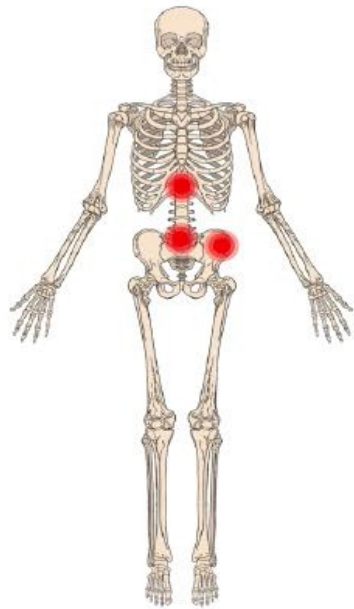
Genomics of locoregional vs lethal prostate cancer



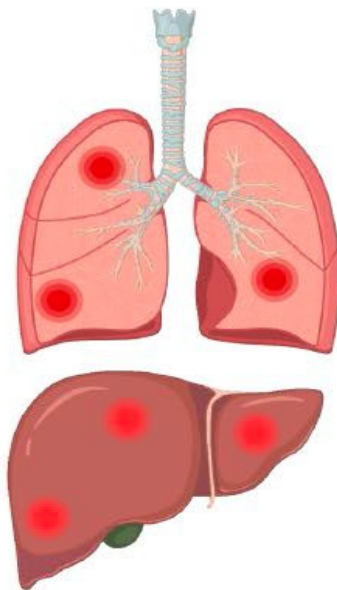
But...

Prognostic classification criterio of High-Risk/Volume M1 HSPC

High-risk Disease According to LATITUDE Study
(at least 2 of the following criteria)^[a]



≥ 3 bone mets

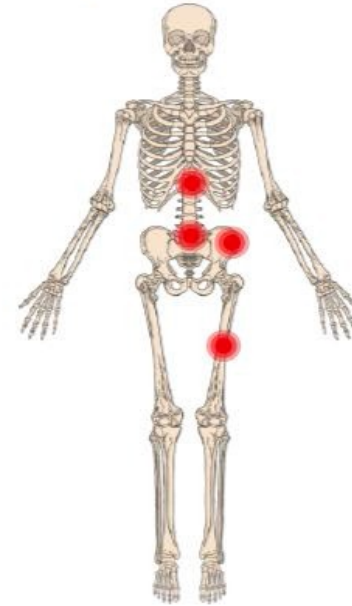


Visceral mets

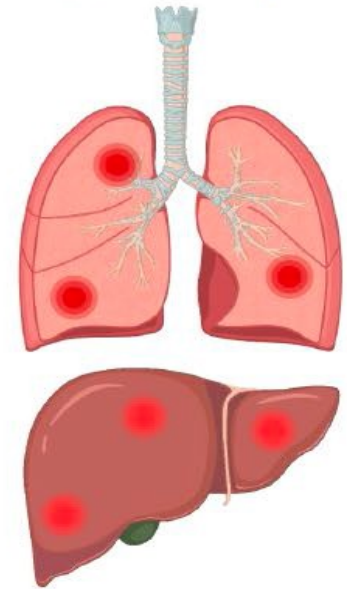
☐	Gleason score ≤ 6
☐	Gleason score 7 (3+4)
☐	Gleason score 7 (4+3)
☒	Gleason score 8 - 10

Gleason score ≥ 8

High-volume Disease According to
CHAARTED Study
(at least 1 of the following criteria)^[b]



≥ 4 bone mets (with ≥ 1
outside the pelvis/column)

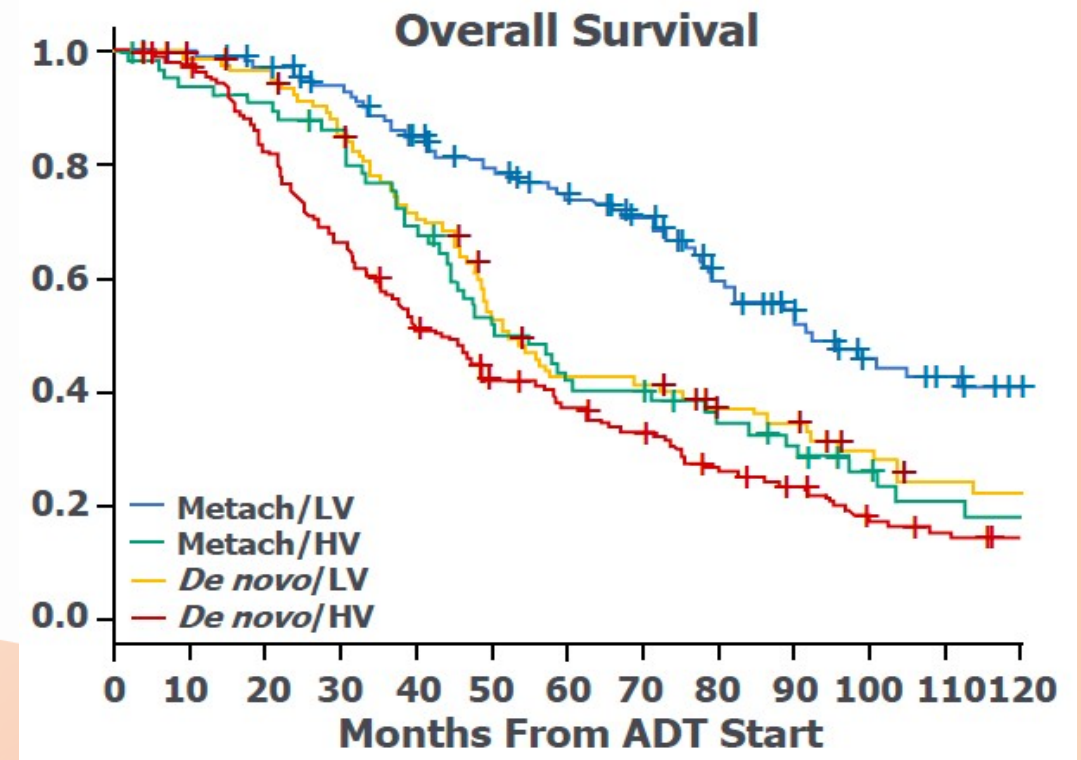


Visceral mets

Prognosis according to volume and presentation at diagnosis

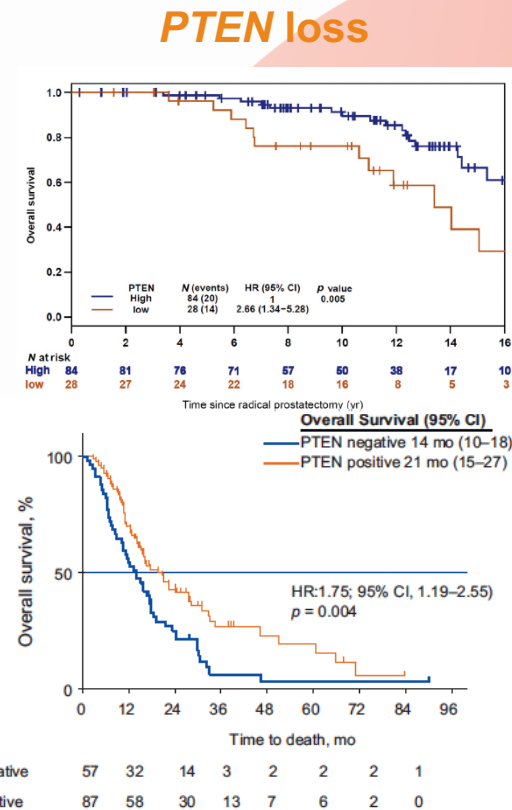
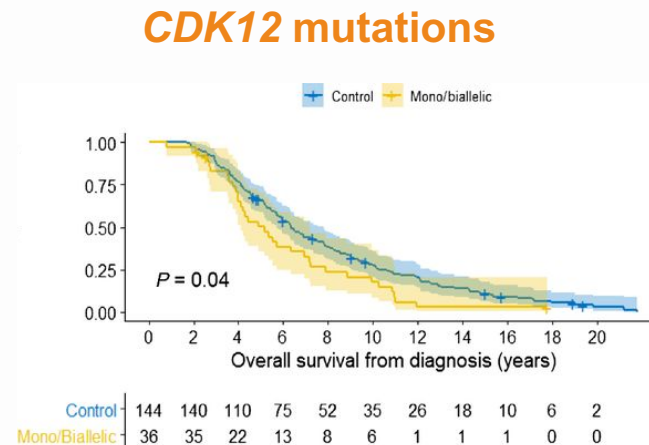
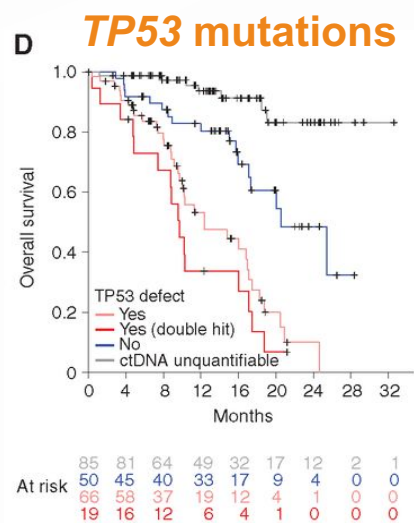
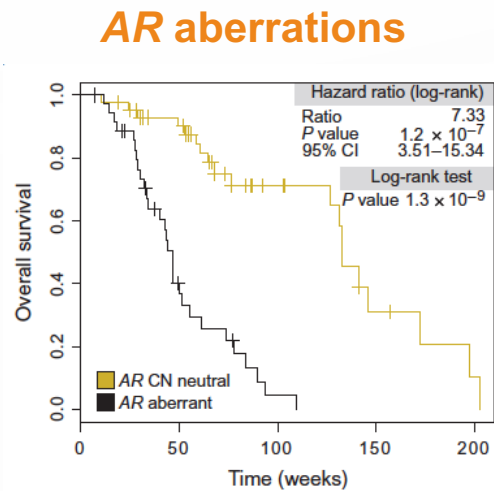
High-volumen de Novo metastatic diseases is associated with the poorest prognosis

Groups	N (% events)	mOS, years (95% CI)
Metach/ Low Vol	125 (50)	7.7 (6.7, 10.6)
Metach/ High Vol	67 (75)	4.6 (3.7, 6.7)
De novo/ Low Vol	96 (70)	4.3 (4.0, 6.5)
De novo/ High vol	148 (84)	3.6 (3.1, 4.7)

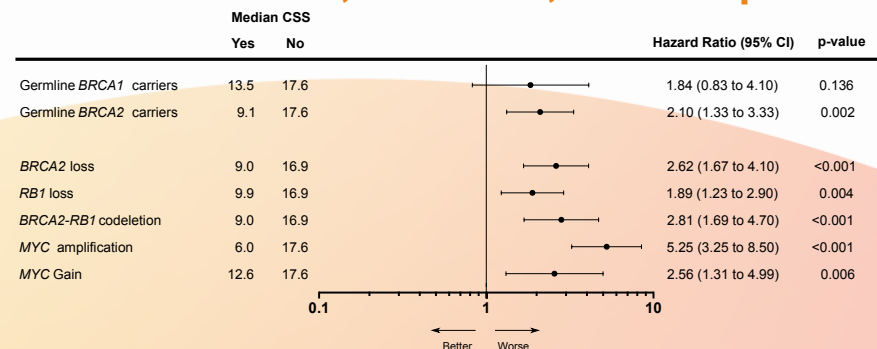


**Can genomics help us to select
different patient groups for
different treatments?**

Some genomic events are prognostic biomarkers



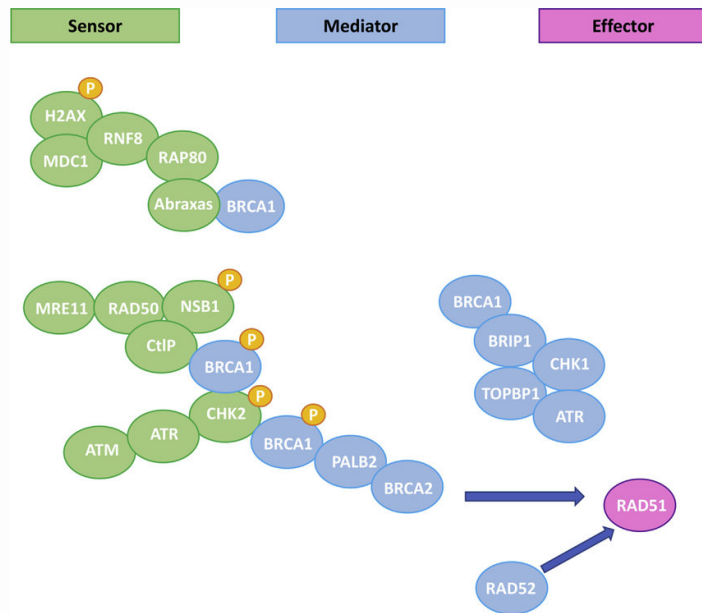
BRCA2 alterations, RB1 loss, MYC amplification



PARPi Monotherapy

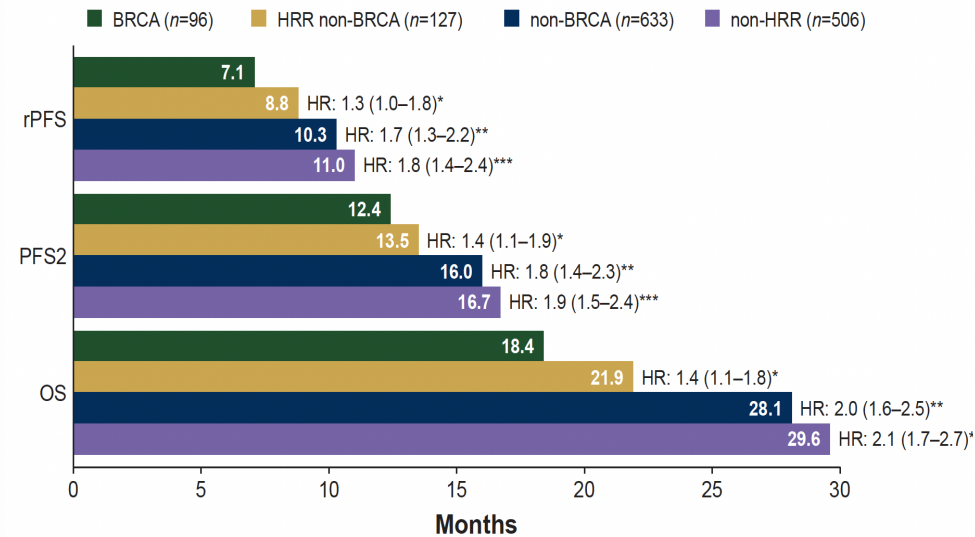
The HRR subgroup is heterogeneous

Different FUNCTIONS



Pellegrino et al, Translational Oncology, 2020

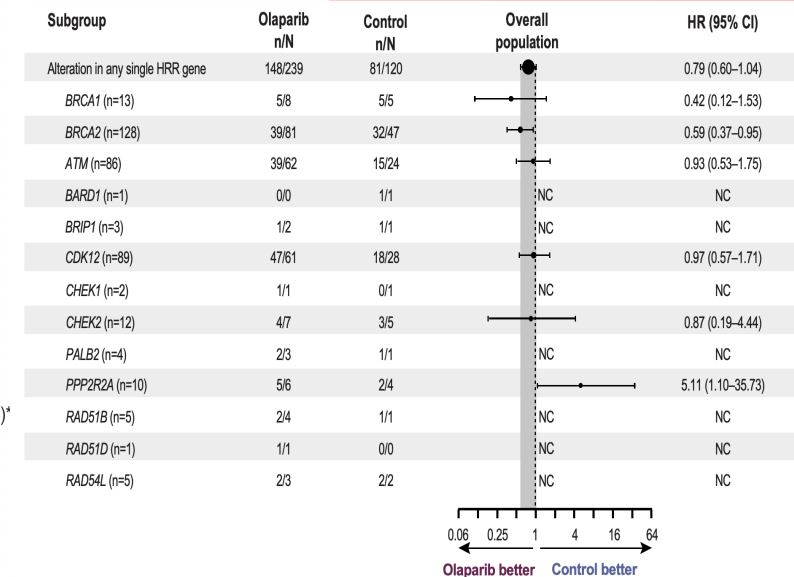
PROGNOSTIC implications



Unadjusted median survival outcomes presented; HRs adjusted for differences in baseline characteristics between subgroups
*HR comparing BRCA vs HRR non-BRCA; **HR comparing BRCA vs non-BRCA; ***HR comparing BRCA vs non-HRR

Olmos et al, Ann Oncol, 2024

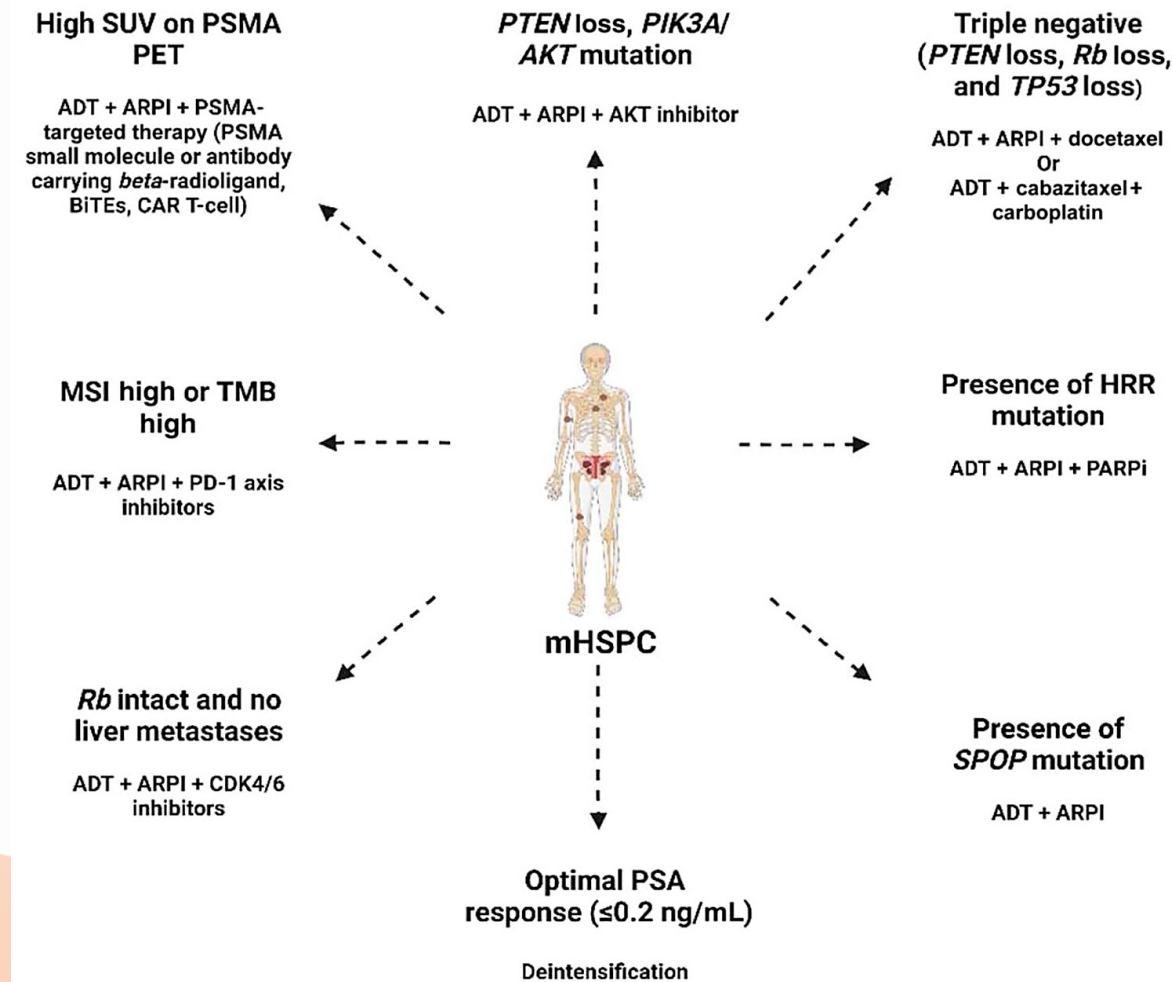
SENSITIVITY to PARPi



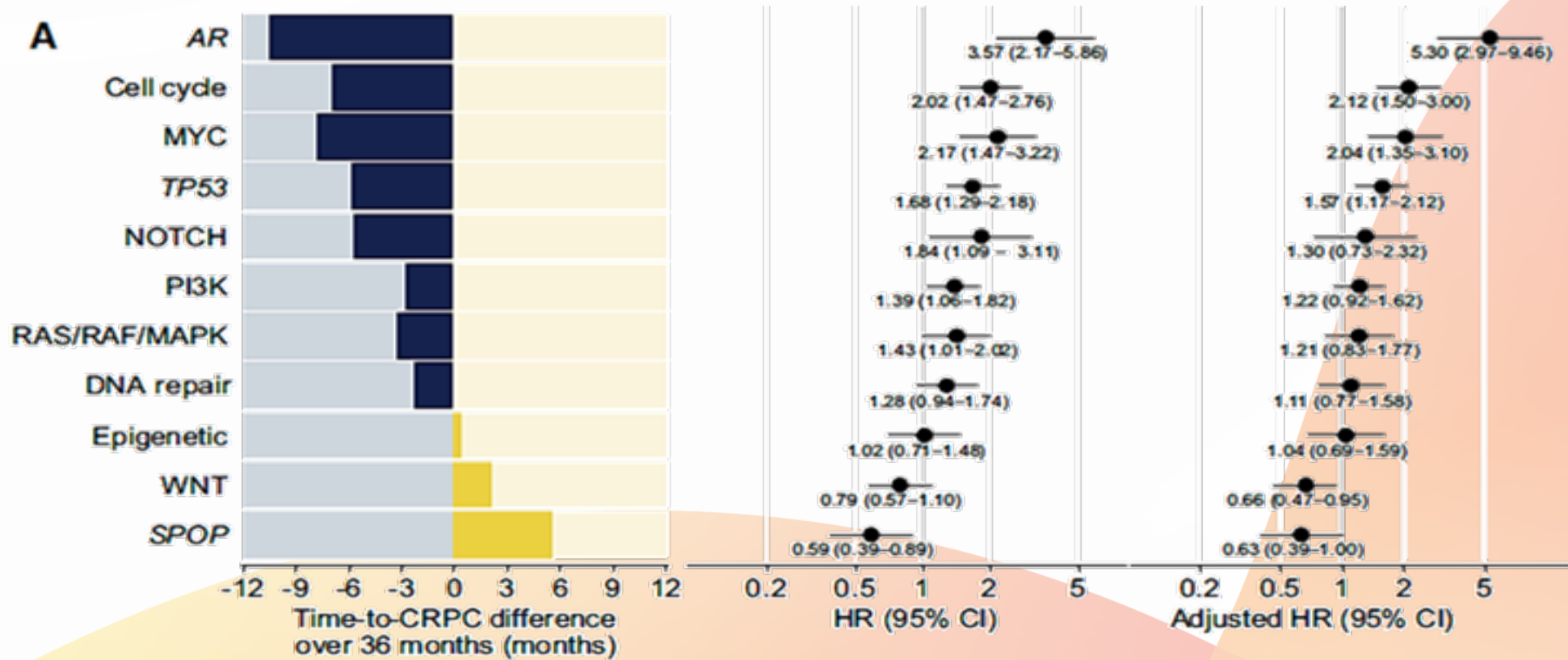
Hussain et al, NEJM, 2020



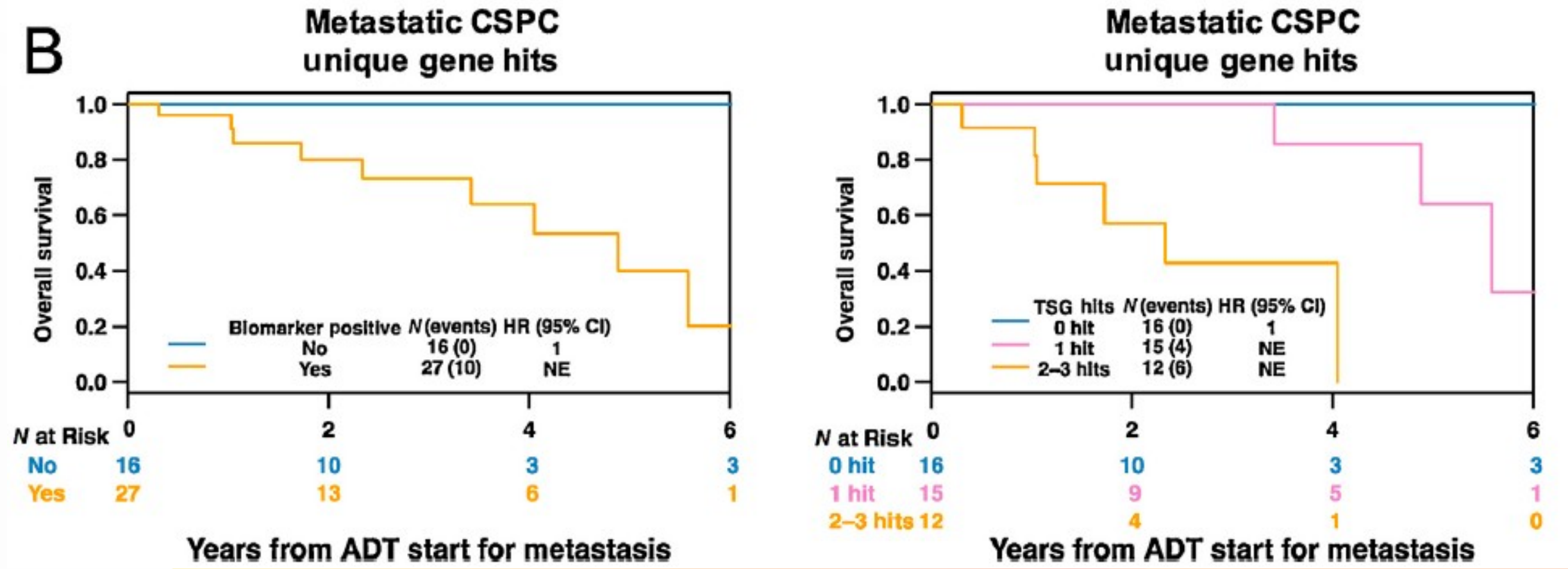
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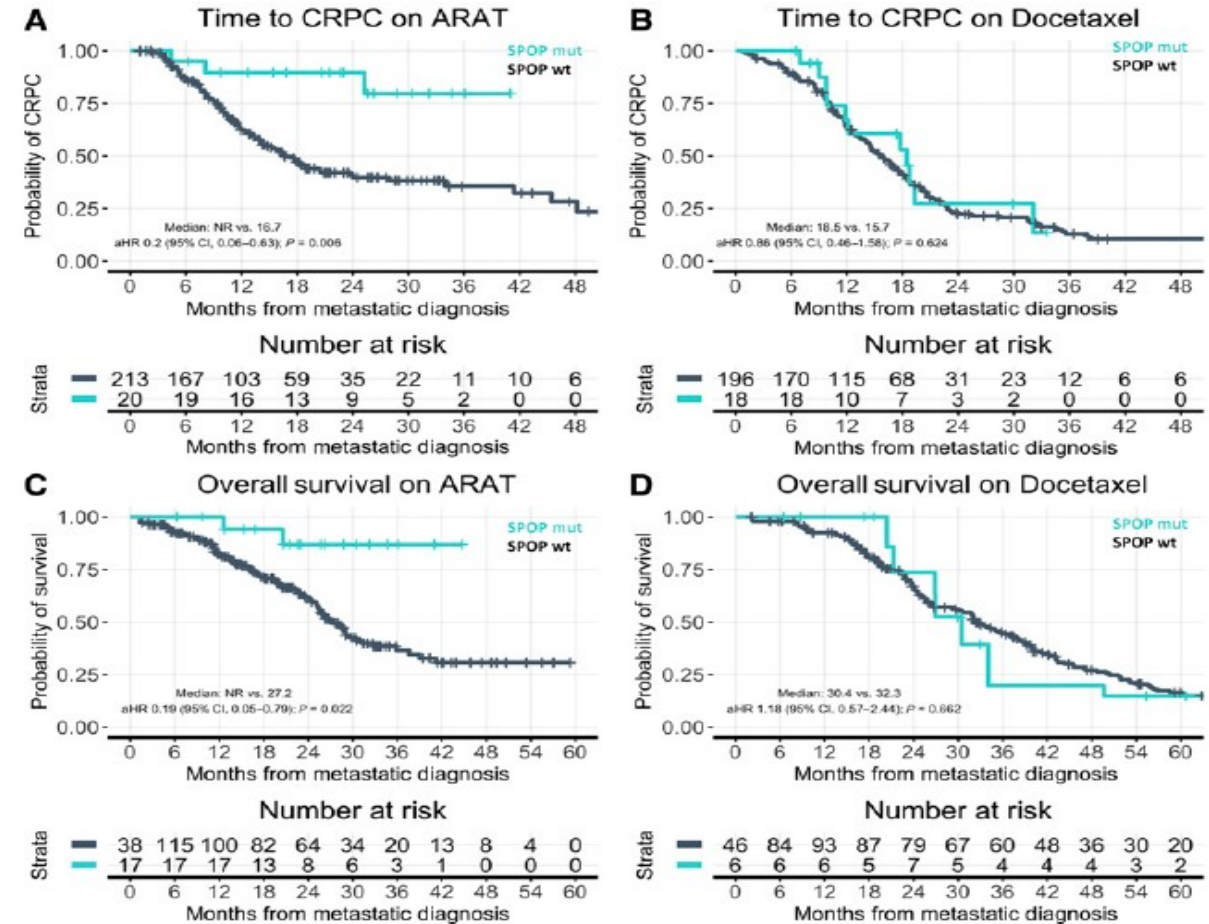
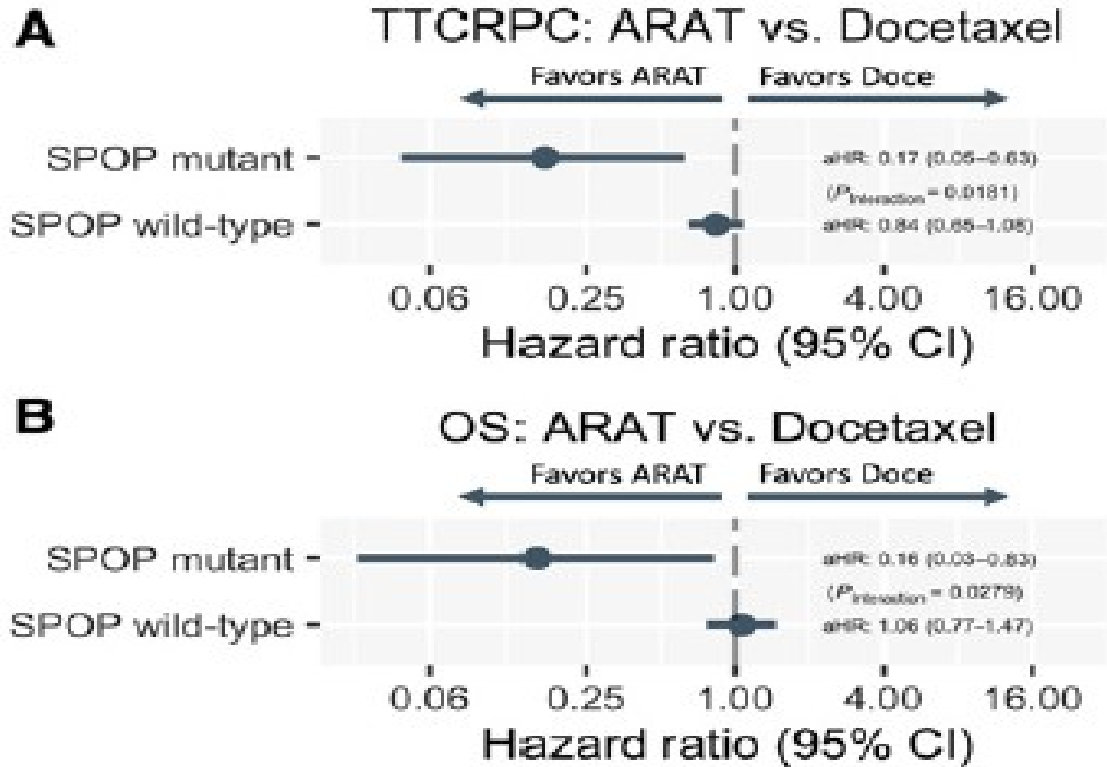
Oncogenic genomic alterations, clinical phenotypes and outcomes in mHSPC



Men with prostate tumours with compound tumour suppressor gene (TP53, PTEN and RB1) mutations have poorer outcomes



The association of SPOP mutation with outcomes in men with de novo mHSPC



Transcriptome classification of PTEN inactivation to predict survival benefit from docetaxel at start of androgen deprivation therapy (ADT) for metastatic prostate cancer (PC): an ancillary study of the STAMPEDE trials

Emily Grist*, Peter Dutey-Magni*, Marina A. Parry, Larissa Mendes, Ashwin Sachdeva, James A. Proudfoot, Anis A. Hamid, Mazlina Ismail, Lia DePaula, Oliveira Oluwademilade Dairo, Sharanpreet Lall, Claire L. Amos, Mahesh K.B. Parmar, Elai Davicioni, Tamara L. Lotan, Christopher J. Sweeney, Louise C. Brown, Noel W. Clarke, Nicholas D. James, Gerhardt Attard

Presented by: Dr. Emily Grist

ClinicalTrials.gov number, NCT00268476 & Current Controlled Trials number, ISRCTN78818544
Trial conducted by Medical Research Council Trials Unit at University College London, U.K.

105 UK trial sites participated in this study

CONQUER
CANCER[®]
THE ASCO FOUNDATION

MERIT AWARD

Eisai Inc. Endowed Merit Award

Supported by Eisai Inc.

STAMPEDE docetaxel and abiraterone phase 3 trials

Metastatic prostate cancer

≥ 1 metastases on bone / CT scan

High-risk localised (adjuvant)

Lymph node positive OR

≥ 2 high risk features:

T3/T4, PSA ≥40ng/ml, Gleason sum 8-10

3909 directly-randomised patients

- ADT versus ADT+ docetaxel+/-zoledronic acid
- ADT versus ADT+ abiraterone

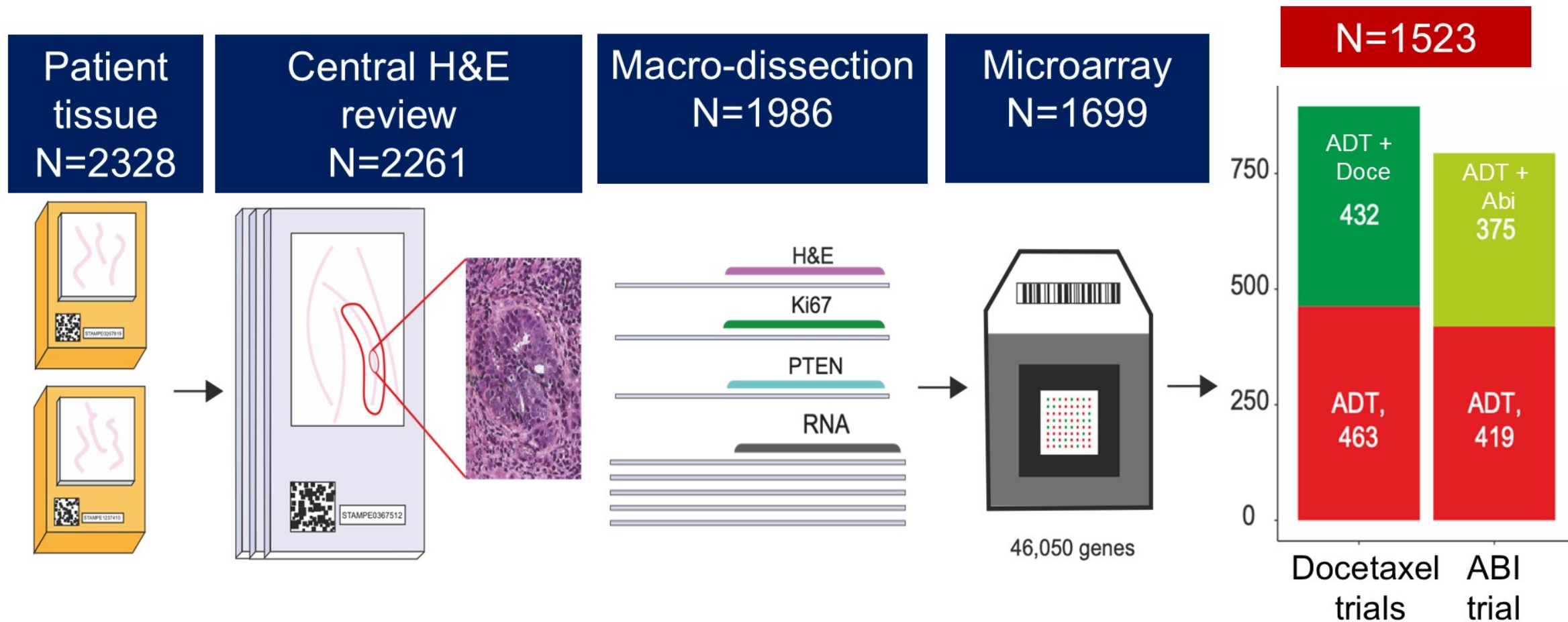
Aim: To link tumour multi-gene expression signatures to 14-year prospective follow-up for overall survival to identify prognostic and predictive biomarkers

STAMPEDE, Systemic Therapy in Advancing or Metastatic Prostate cancer: Evaluation of Drug Efficacy (MRC-PR08, NCT00268476) www.stampededtrial.org

STRATOSPHERE (STratification for RAtional Treatment-Oncomarker Pairings of STAMPEDE patients starting long-term Hormone treatment) protocol overseen by the STAMPEDE trial management groups and biological research group

95% synchronous M1

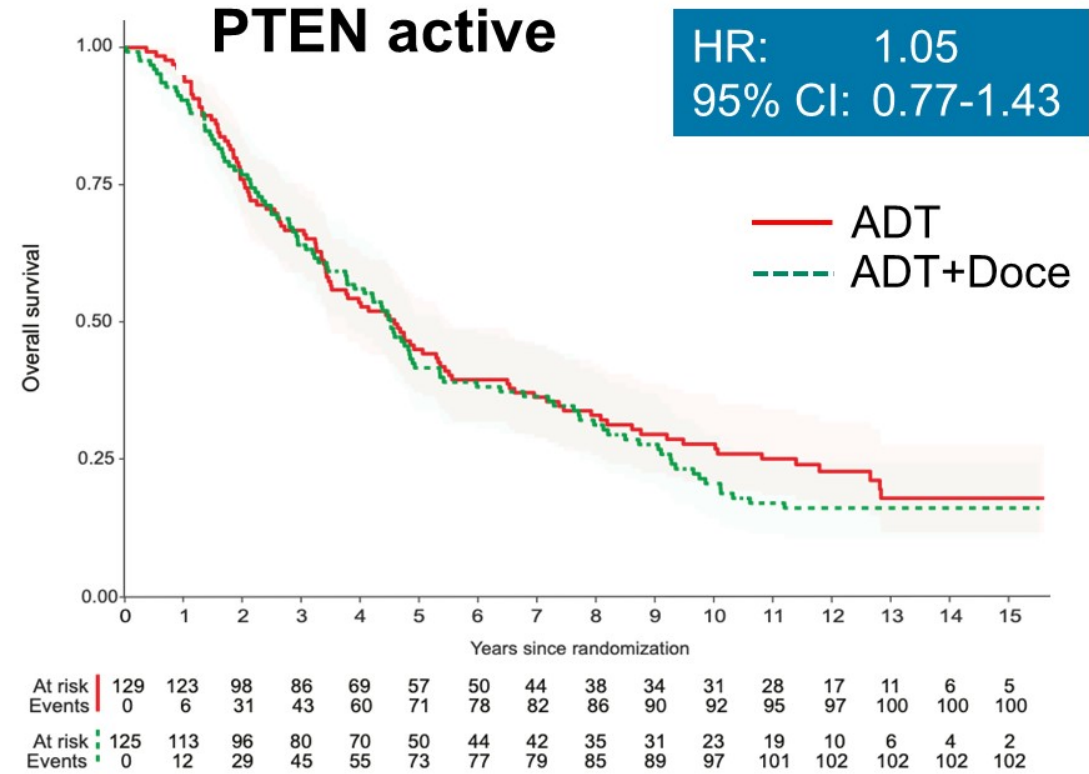
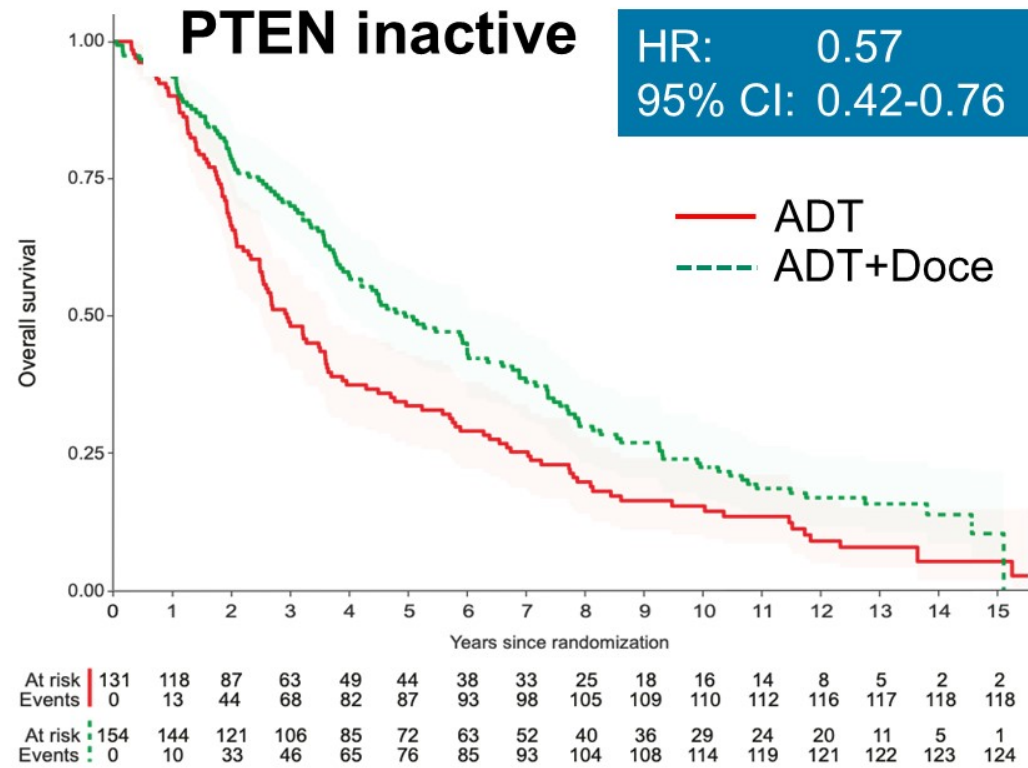
Linking of clinical and multi-omic data



Affymetrix Human Exon 1.0 ST microarray. 1.4 million genome-wide features

*166 overlapping controls

PTEN inactivation predicts docetaxel sensitivity



Tumour PTEN inactivity identifies metastatic patients most likely to benefit from docetaxel
Biomarker-treatment interaction effect p value= 0.002*

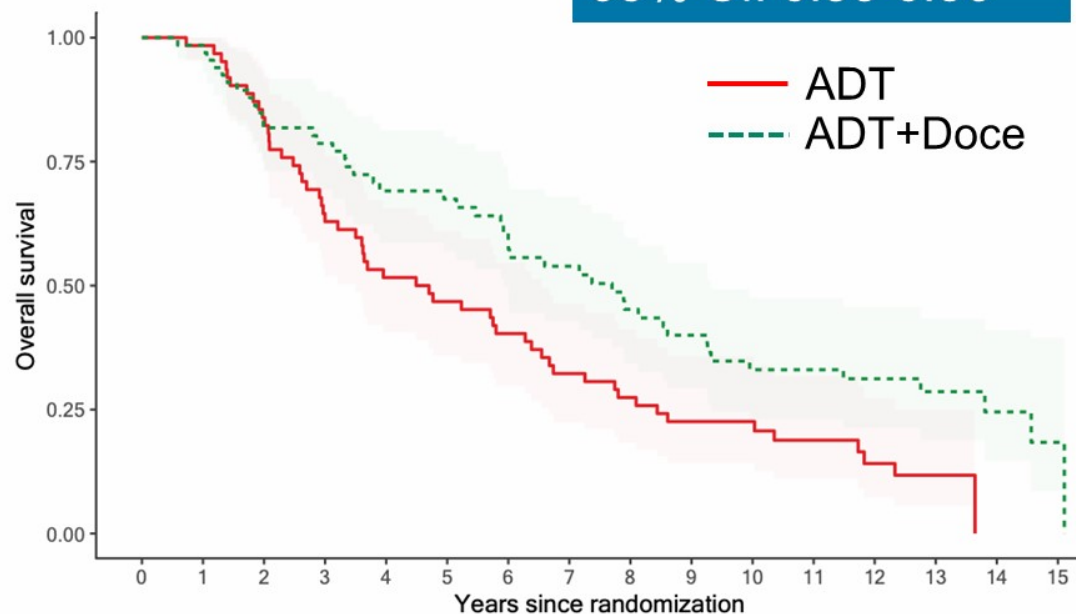
Treatment effect uniform in abiraterone comparison trial (adjusted HR):
 PTEN inactive HR 0.52, 95% CI 0.36-0.73; PTEN active HR 0.55, 95% CI 0.39-0.77; p=0.784
Direction of treatment effect is the same in CHAARTED biomarker cohort (adjusted HR):
 PTEN inactive HR 0.52, 95% CI 0.31-0.87; PTEN active cancers HR 0.62, 95% CI 0.30-1.30

Kaplan-Meier estimates with 95% CI in lighter shade. HR and interaction test from multivariable model adjusted for Gleason score, disease burden, age, pre-ADT PSA, WHO PS, nodal stage, tumour stage, NSAID/aspirin use, and metastatic volume
 PTEN score dichotomised around 0.3 based on bimodal distribution

Direction of treatment effect consistent in low volume

PTEN inactive

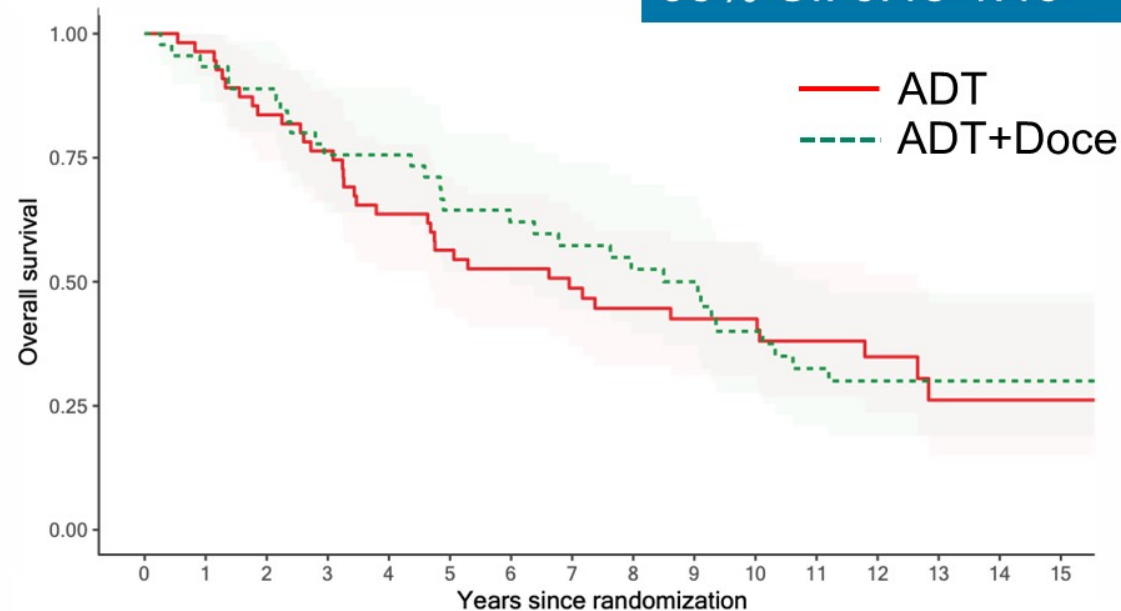
HR: 0.53
95% CI: 0.33-0.86



At risk	62	61	52	39	32	29	25	20	17	13	12	10	6	3	0	0
Events	0	1	10	23	30	33	37	42	45	48	48	50	52	53	54	54
At risk	66	64	54	50	42	40	35	31	26	23	19	19	17	8	5	1
Events	0	2	12	14	20	21	26	29	34	37	41	41	42	43	44	45

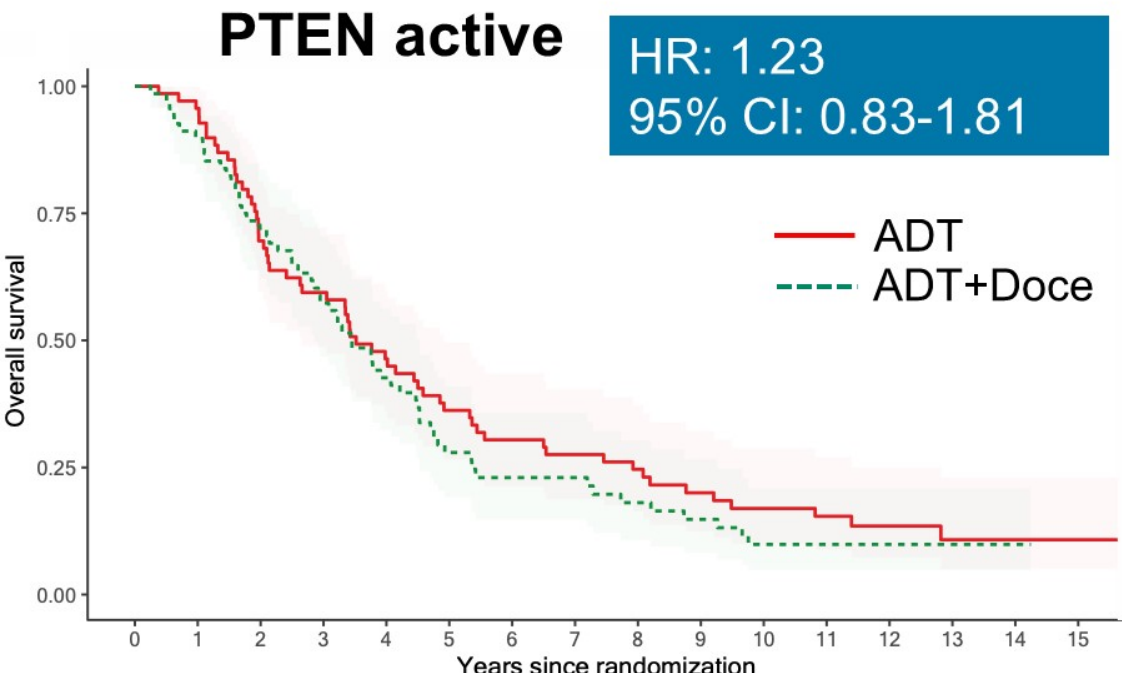
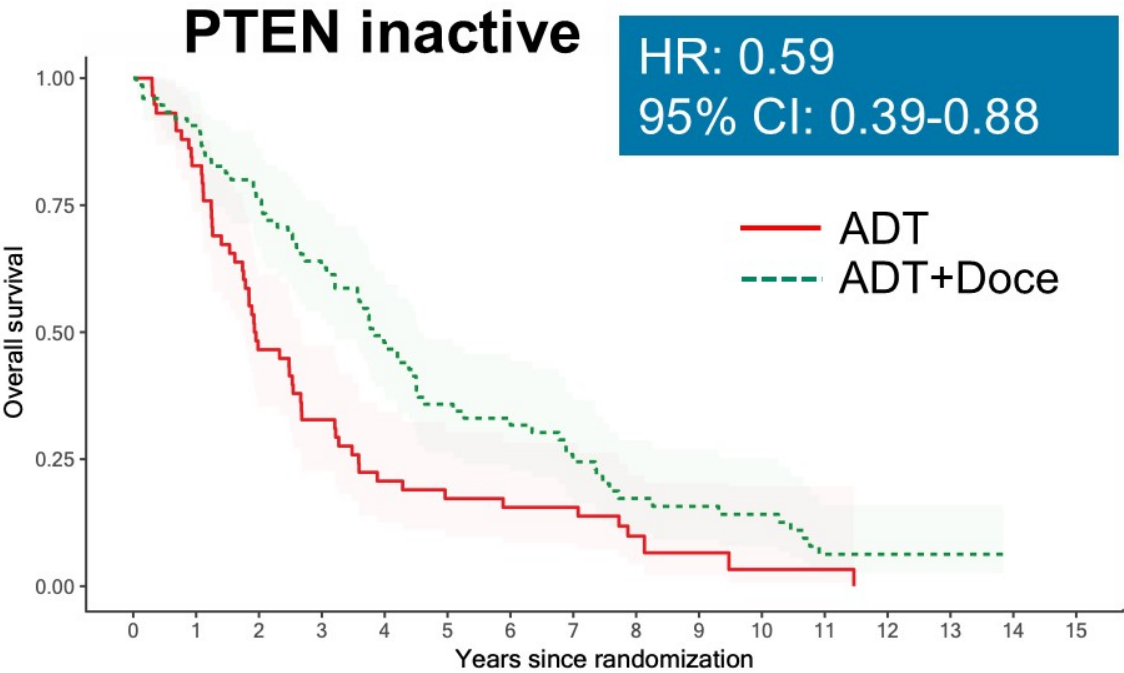
PTEN active

HR: 0.82
95% CI: 0.48-1.40



At risk	55	53	46	42	35	30	28	24	21	20	19	17	10	6	3	2
Events	0	2	9	13	20	24	26	28	30	31	31	33	34	36	36	36
At risk	45	42	40	34	34	28	26	24	21	20	16	13	6	4	2	2
Events	0	3	5	11	11	16	17	19	21	22	26	29	30	30	30	30

Direction of treatment effect consistent in high volume



At risk	58	48	27	19	12	10	9	9	5	2	1	1	0	0	0	0
Events	0	10	31	39	46	48	49	49	52	53	54	54	55	55	55	55
At risk	75	68	57	47	36	26	23	17	11	10	9	4	3	3	0	0
Events	0	7	18	28	39	48	51	56	61	62	63	68	68	68	68	68

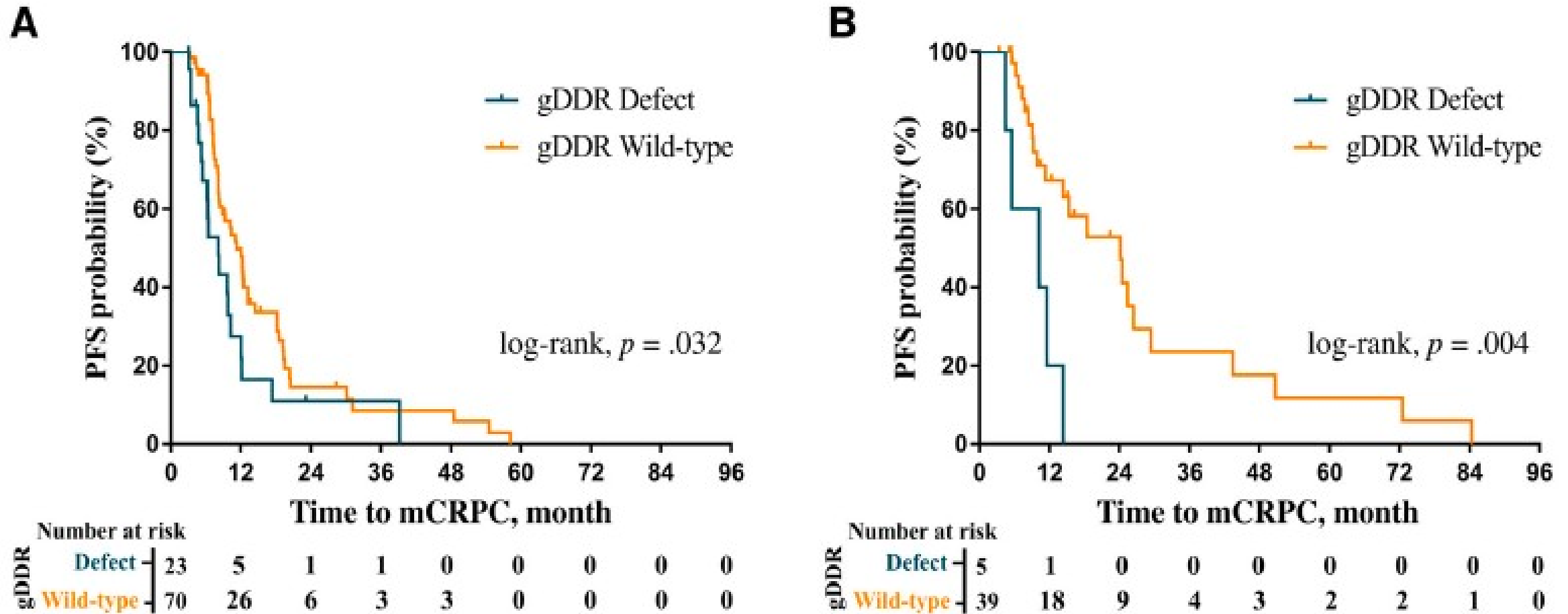
At risk	69	66	48	41	32	25	21	19	16	13	11	10	6	4	2	2
Events	0	3	21	28	37	44	48	50	52	55	57	58	59	60	60	60
At risk	68	61	49	39	29	18	14	14	11	9	6	6	4	2	2	0
Events	0	7	19	29	39	49	52	52	55	57	60	60	60	60	60	60

Truqap combination in PTEN-deficient metastatic hormone-sensitive prostate cancer demonstrated statistically significant and clinically meaningful improvement in radiographic progression-free survival in CAPItello-281 Phase III trial

PUBLISHED

25 November 2024

Prognostic value of Germline DNA repair gene mutations in de novo metastatic and castration-sensitive prostate cancer



Study design and population

Key Inclusion Criteria.

- Male ≥18 years.
- Histologically confirmed adenocarcinoma of the prostate without predominance of small-cell or neuroendocrine features (ASCO/CAP guidelines).
- High-volume metastatic disease documented on bone scan or CT/MRI scan.
- Life expectancy ≥ 12 months.
- Prior (neo)adjuvant ADT-based regimen is allowed if PD occurred while on non-castrate testosterone levels > 12 months after discontinuation.
- No prior treatment with enzalutamide, apalutamide, darolutamide or abiraterone acetate.
- PSA ≥ 4 ng/mL at diagnosis or before starting ADT therapy.
- No prior systemic therapy for metastatic prostate cancer.

PRIMARY ENDPOINT

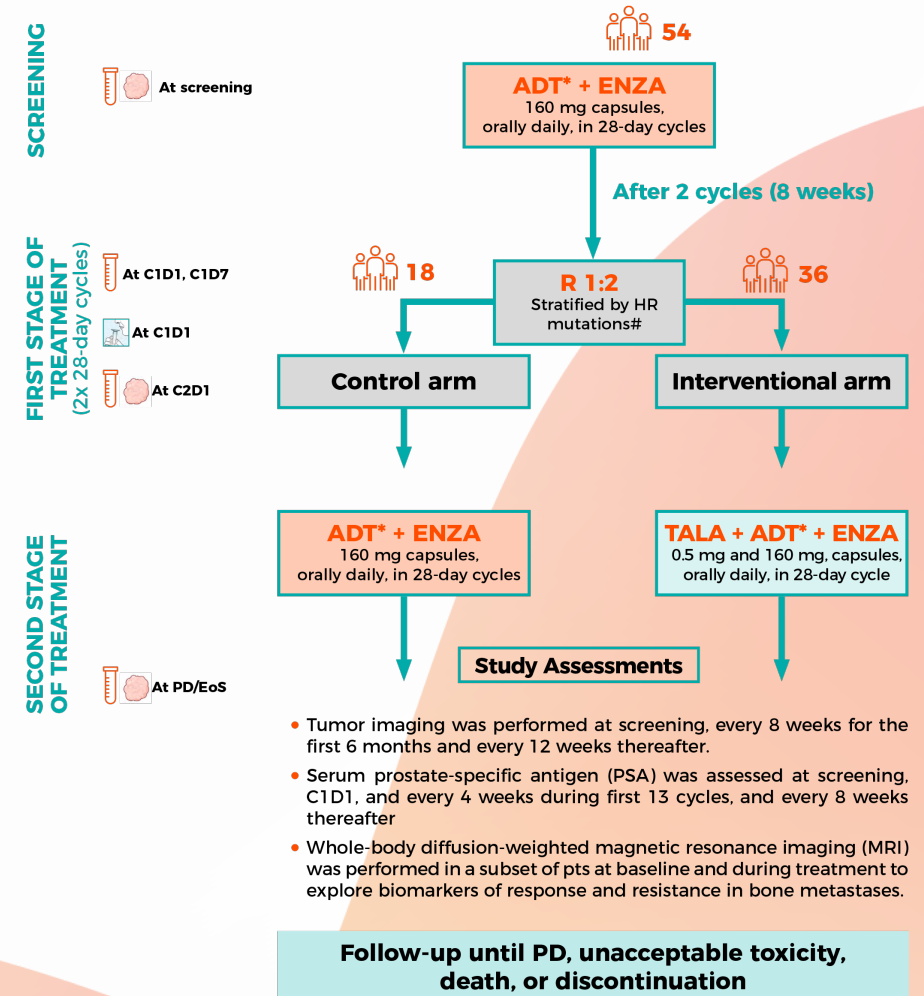
- PSA-complete response (PSA-CR) (PSA < 0.2 ng/mL) after 12 months of therapy in pts with mHNPc in the androgen deprivation therapy (ADT) + enzalutamide (ENZA) + talazoparib (TALA) arm.

H0: 20%; H1 ≥ 40%.

SECONDARY ENDPOINTS

- PSA-CR rate at any time point and at month 7 and 12.
- PSA progression-free survival (PSA-PFS)
- Radiologic PFS (rPFS) as per RECIST v.1.1/PCWG3
- Overall survival (OS)
- Safety and tolerability (CTCAE v.5.0).

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* Pts to continue treatment with ADT throughout the study (except for surgical orchiectomy).

#Randomization will be stratified based on HR gene alterations detected in the baseline biopsy (presence versus absence/unknown).

Primary endpoint

C13D1 PSA-CR in ENZA+TALA arm was 73% (95% CI, 55.9%-86.2%, $p < 0.001$),

C13D1 PSA-CR in ENZA arm was 64.7%

Key secondary endpoints

Figure 2. Radiologic PFS according to RECIST v.1.1.

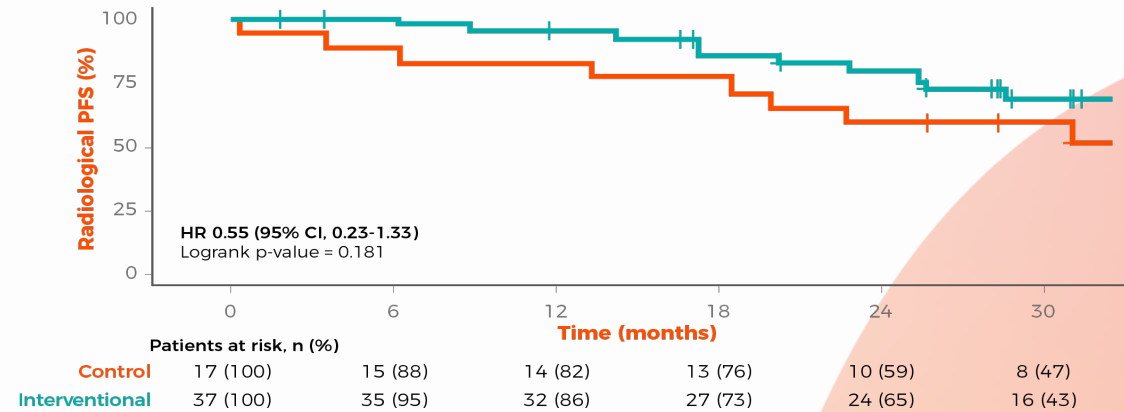
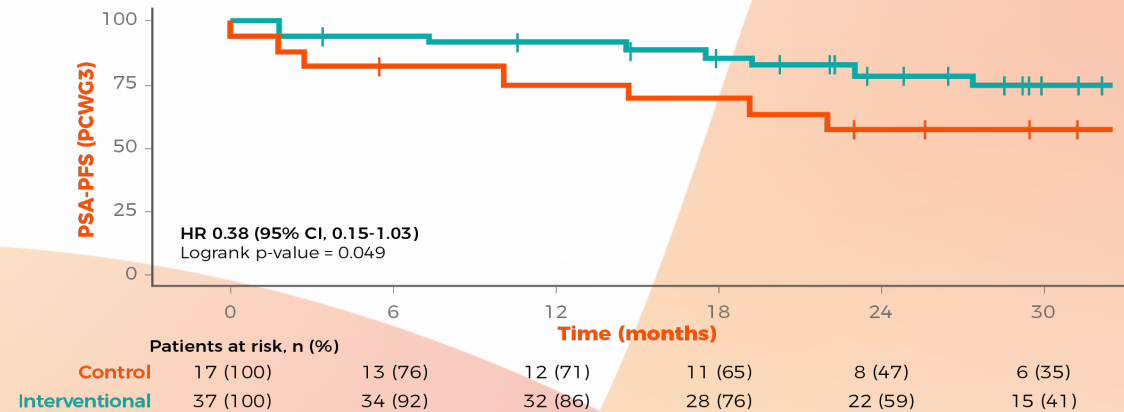


Figure 3. PSA-PFS according to PCWG3 criteria.



Phase 3 AMPLITUDE trial: Niraparib and abiraterone acetate plus prednisone for metastatic castration-sensitive prostate cancer patients with alterations in homologous recombination repair genes

Gerhardt Attard¹, Neeraj Agarwal², Julie N Graff^{3,4}, Shahneen Sandhu⁵, Eleni Efstathiou⁶, Mustafa Özgüroğlu⁷, Andrea J Pereira de Santana Gomes⁸, Karina Vianna⁹, Hong Luo¹⁰, Heather H Cheng^{11,12}, Won Kim¹³, Carly R Varela¹⁴, Daneen Schaeffer¹⁴, Shiva Dibaj¹⁵, Susan Li¹⁴, Fei Shen¹⁴, Suneel D Mundle¹⁶, David Olmos¹⁷, Kim N Chi¹⁸, Dana E Rathkopf¹⁹, on behalf of the AMPLITUDE investigators

¹Cancer Institute, University College London, London, UK; ²Huntsman Cancer Institute, University of Utah, Salt Lake City, UT, USA; ³Oregon Health & Science University and Knight Cancer Institute, Portland, OR, USA; ⁴Veterans Affairs Portland Health Care System, Portland, OR, USA; ⁵Peter MacCallum Cancer Centre, Melbourne, Australia; ⁶Houston Methodist Cancer Center, Houston, TX, USA; ⁷Istanbul University-Cerrahpaşa, Cerrahpaşa Faculty of Medicine, Istanbul, Turkey; ⁸Uga Norte Riegrandense Contra o Cancer, Natal, Brazil; ⁹Centro Integrado de Oncologia de Curitiba, Curitiba, Brazil; ¹⁰Chongqing University Cancer Hospital, Chongqing, China; ¹¹University of Washington, Seattle, WA, USA; ¹²Fred Hutchinson Cancer Center, Seattle, WA, USA; ¹³Johnson & Johnson, Los Angeles, CA, USA; ¹⁴Johnson & Johnson, Spring House, PA, USA; ¹⁵Johnson & Johnson, San Diego, CA, USA; ¹⁶Johnson & Johnson, Raritan, NJ, USA; ¹⁷Biomedical Research Institute, Hospital Universitario 12 de Octubre, Madrid, Spain; ¹⁸BC Cancer – Vancouver Center, University of British Columbia, Vancouver, BC, Canada; ¹⁹Memorial Sloan Kettering Cancer Center and Weill Cornell Medicine, New York, NY, USA

AMPLITUDE: Randomized, Double-Blind, Placebo-Controlled Trial in HRRm mCSPC

First and final rPFS analysis and first interim analysis of time to symptomatic progression and overall survival. Median follow-up: 30.8 months

Key inclusion criteria:

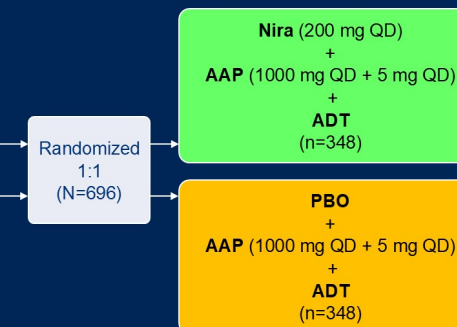
- mCSPC^a
- Alteration in ≥1 HRR eligible gene: *BRCA1, BRCA2, BRIP1, CDK12, CHEK2, FANCA, PALB2, RAD51B, RAD54L*^b
- ECOG PS 0-2

Key exclusion criteria:

- Any prior
- PARPi
- ARPI other than AAP

Prior allowed treatments in mCSPC:

- ADT ≤6 months
- Docetaxel ≤6 cycles^c
- AAP ≤45 days
- Palliative RT



Stratification factors:

- *BRCA2* vs *CDK12* vs all other alterations
- Prior docetaxel (yes vs no)
- Disease volume (high vs low)

Primary end point

- rPFS by investigator review

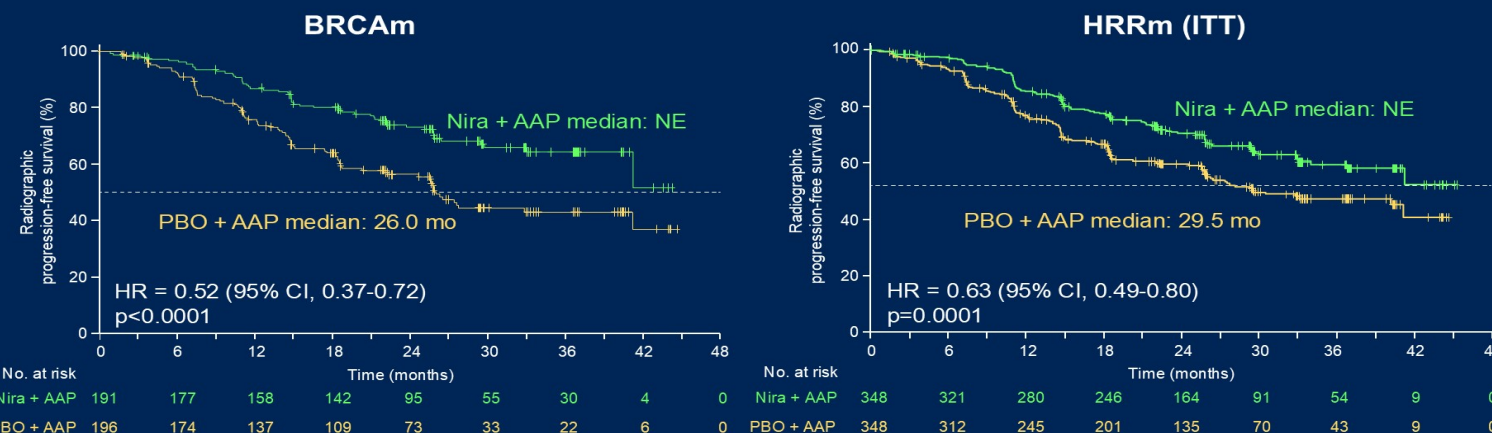
Key secondary end points

- Time to symptomatic progression
- OS
- Safety

Clinical data cutoff: January 7, 2025

^aPatients with lymph node-only disease are not eligible. ^bHRR gene panel was fixed prior to trial initiation based on MAGNITUDE trial and external data from the published literature. ^cLast dose ≤3 months prior to randomization. ECOG PS, Eastern Cooperative Oncology Group performance status; Nira, niraparib; OS, overall survival; PBO, placebo; RT, radiotherapy; QD, once daily.

Primary End Point: Radiographic Progression-Free Survival

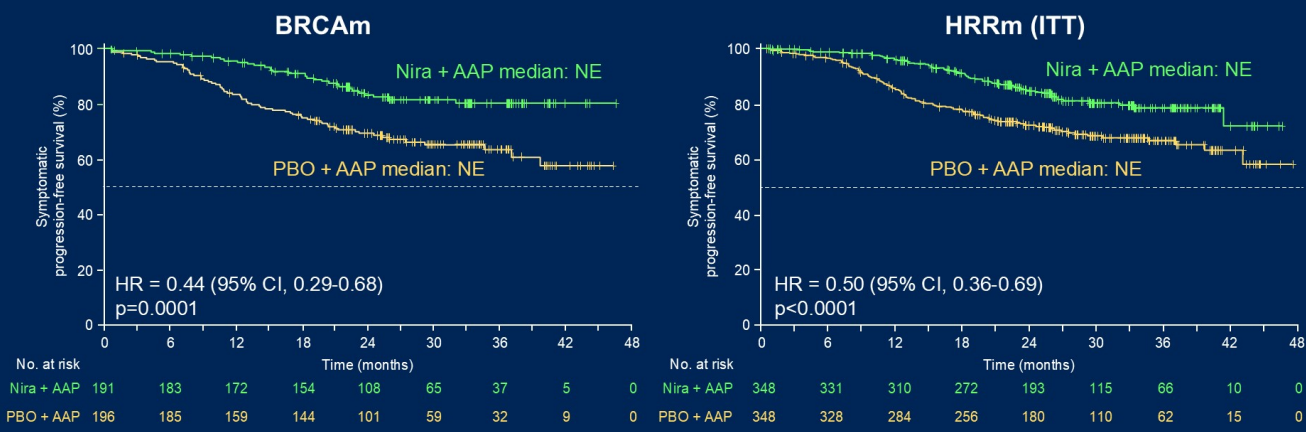


AMPLITUDE met the primary end point: Nira + AAP significantly reduced the risk of radiographic progression^a or death by 48% in BRCAm group and by 37% in HRRm population

^arPFS by investigator review; rPFS improvement by blinded independent central review was as large: HR = 0.51 (95% CI, 0.37-0.72) for BRCAm group and 0.61 (95% CI, 0.47-0.79) for HRRm group. NE, not estimable

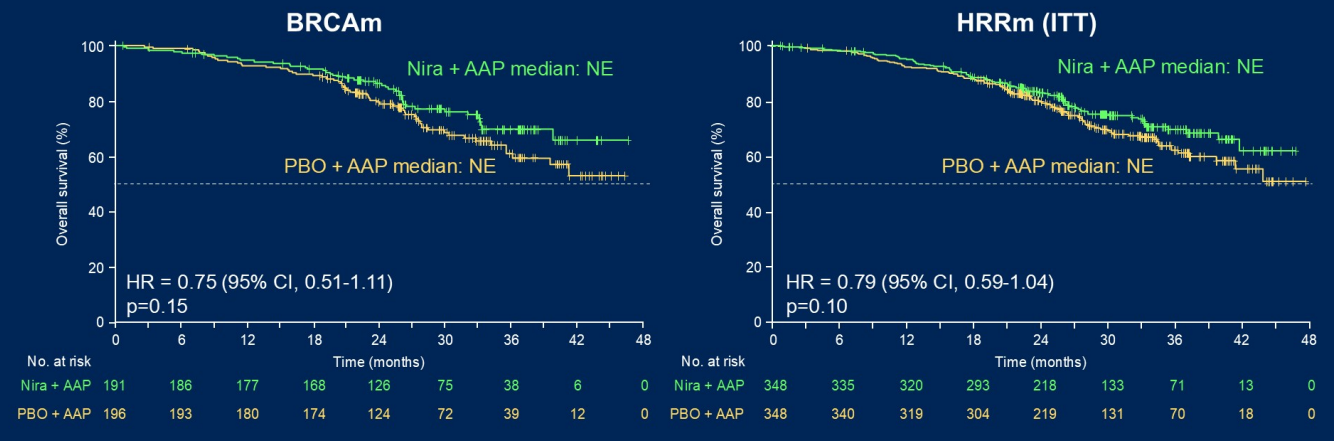
#guardsymposium2025
X @GuardConsortium

Secondary End Point: Time to Symptomatic Progression



Nira + AAP significantly reduced the risk of symptomatic progression by 56% in BRCAm group and by 50% in HRRm population

Secondary End Point: Overall Survival (First Interim Analysis)



This first interim analysis (≈50% of total needed events) estimates show Nira + AAP reduced risk of death by 25% in BRCAm group and by 21% in HRRm population

*The first interim analysis for OS was conducted when 193 patients had died (of a target of 389, an information fraction of 50%), 85 of 348 (24%) in the Nira + AAP arm and 108 of 348 (31%) in the PBO + AAP arm.

There are several mHSPC Trials implementing molecular biomarkers that either recruiting already or being planned

- *BRCA2*/DRD: **AMPLITUDE** (NCT037486641), **TALAPRO-3** (NCT04821622), and **STAMPEDE** (NCT00268476)
- *PTEN* loss: **CAPItello-281** (NCT04493853)
- PSMA positive: **PSMAddition** (NCT04720157)
- Cell cycle: **CYCLONE 3** testing abiraterone + prednisone +/- LY2835219 (NCT05288166)

Can we improve the results with a better selection?

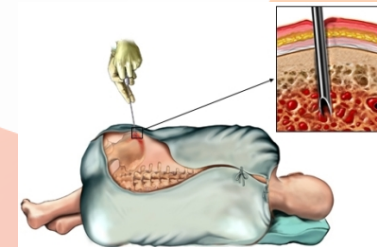
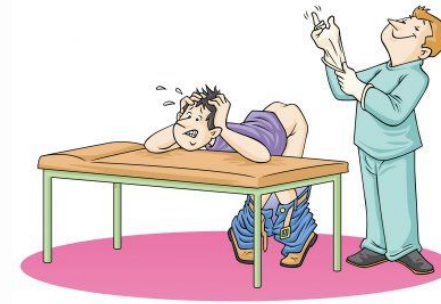
How to perform all these studies?

Primary Tumor

Liquid Biopsy

- CTCs
- cfDNA
- Exosomes

CT Guided Bone Marrow Biopsy



Different diagnostics strategies can be considered to assess for HRR alterations

	Advantages	Disadvantages
Tumour tissue testing	Gold standard (High clinical sensitivity) Fresh or archival tumour samples can be used (but older samples can have lower success rates) Can detect both germline and somatic mutations	High failure rate, especially for older samples Tissues for sampling may be in locations that are not safe or amenable to biopsy Single-site biopsies do not capture intra-individual heterogeneity (across metastases in an individual or changes over time or with disease progression)
Plasma ctDNA testing	Non-invasive, safer, serial analysis Can detect both germline and somatic mutations Useful where no tissue is available or when re-biopsy is undesirable Capture relative contribution of metastases in different anatomical sites	Low levels of tumour fraction can lead to false negative results CHIP may lead to false positives Blood collection must be timed in order to evaluate progressive disease Relative sensitivity at a prospective cohort level is unknown (clinical validation in PC still limited)
Germline testing (Blood or saliva)	Assess familial risk Easy to obtain samples from blood, saliva or buccal swabs	Misses alterations of somatic origin ($\approx$ 50% of HR alterations)

BRCA 1/2 and other DDR alterations are likely early events

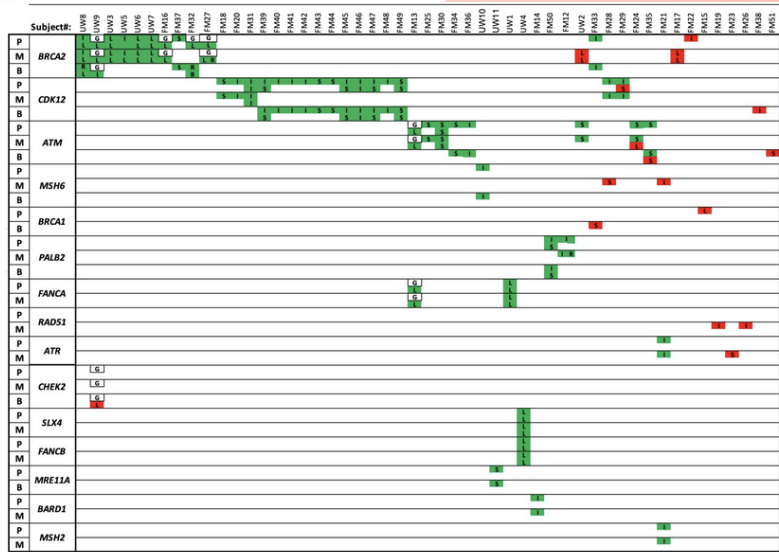
High concordance in DDR mutational status between primary prostate and metastatic tissue/ctDNA

	HHR gene alteration prevalence %
All patients	27.9
All primary tumors	27
Archived primary	27
Newly collected primary	26.5
All metastatic tumors	32.3
Archived metastatic	33.9
Newly collected metastatic	29.7

BRCA1/2: 99% Overall concordance

Table 1. Patients with BRCA mutation in primary tumor			
Pt #	BRCAm primary	Interval	BRCAm cfDNA 1
1	Detected	3.13 months	Not Detected
2	Detected	0.93 months	Detected
3	Detected	0.2 months	Detected
4	Detected	97.93 months	Not Detected
5	Detected	40.77 months	Detected

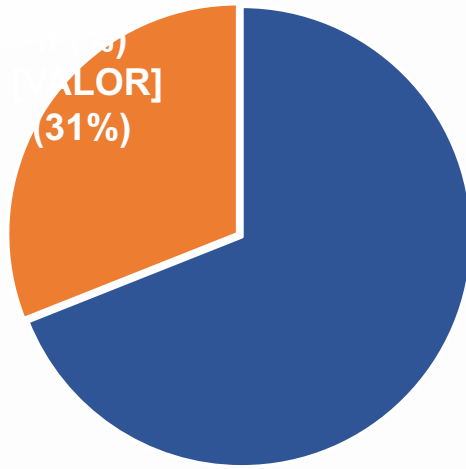
Table 2. Patients with no BRCA mutation in primary tumor			
Matched CGP	Median (range)	New BRCA1	New BRCA2
Primary test to 1 st cfDNA (n=191)	23.6 months (0.1 - 232)	None	None
Primary test to 2 nd cfDNA (n=27)	58.9 months (7.23 - 211)	None	None
Primary test to 3 rd cfDNA (n=2)	65.5 months (21.9 - 109)	None	None



BRCA and other DDR:
84% concordance

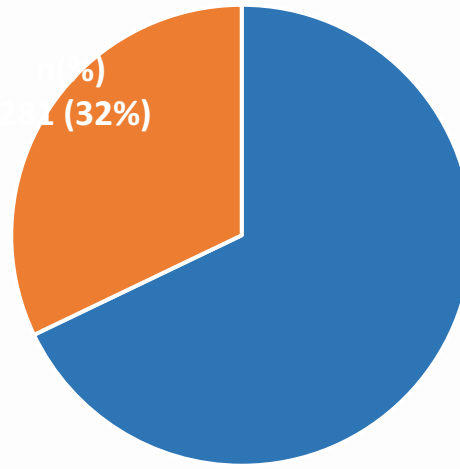
TISSUE is the ISSUE

PROfound¹
N = 4047 samples



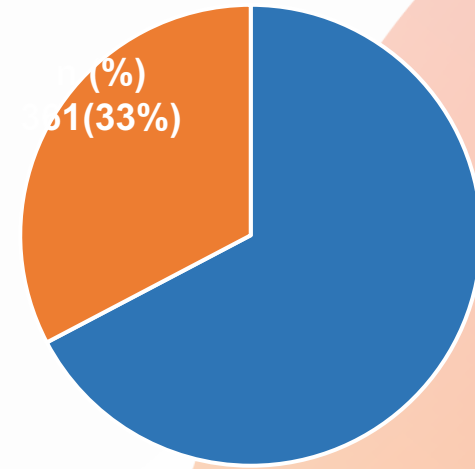
■ Successful
■ Failed

TRITON2^{2*}
N = 875 samples



■ Successful
■ Failed

IPATential150³
N = 1104 samples



■ Evaluable
■ Not evaluable

**Sample selection and optimisation of tissue collection is critical,
since 30–50% of prostate cancer samples fail NGS^{1–3}**

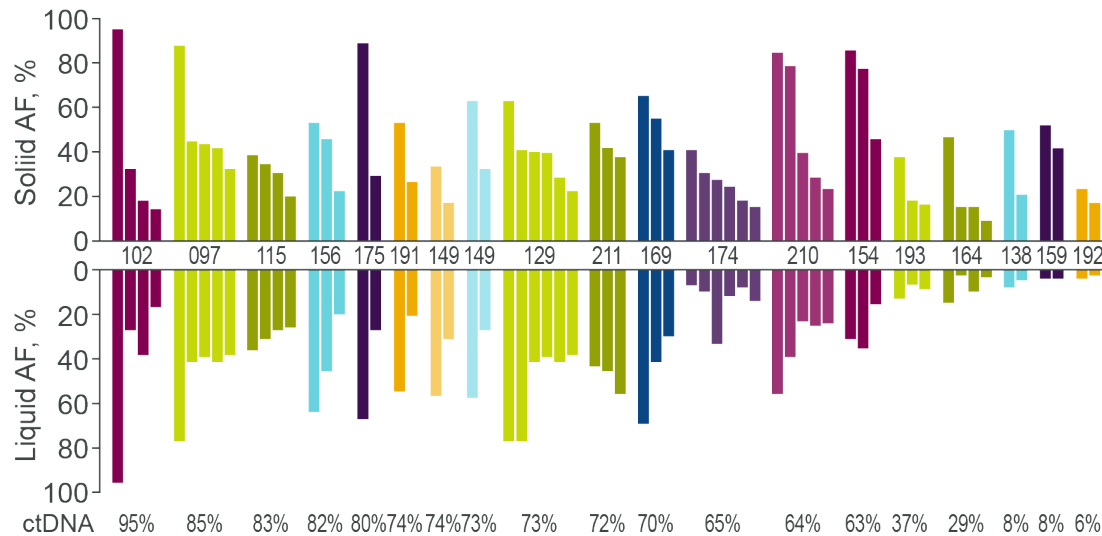
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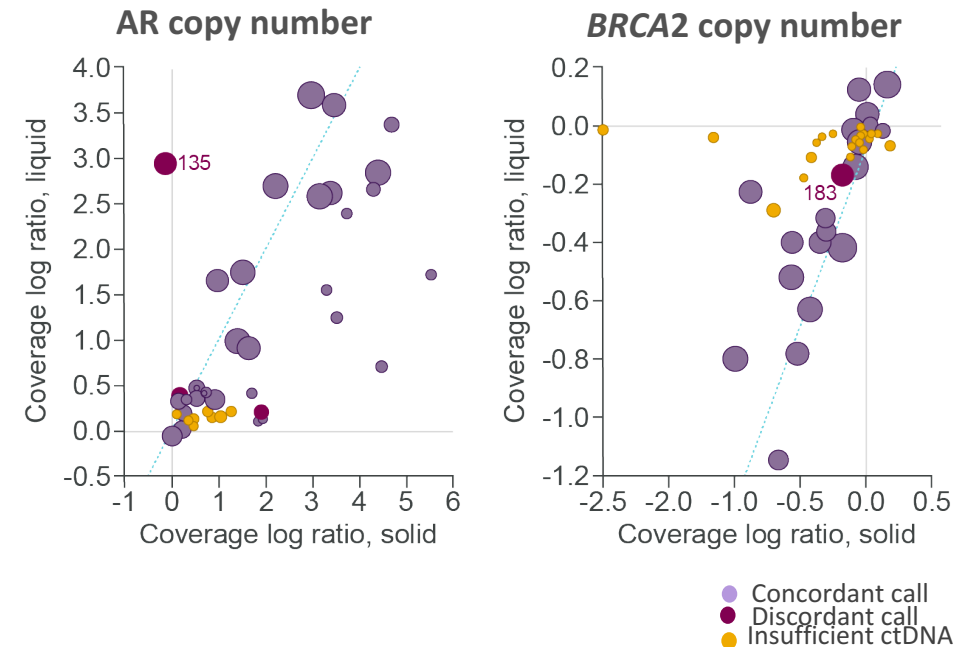
Assessment of genomic alterations of tumor in ctDNA

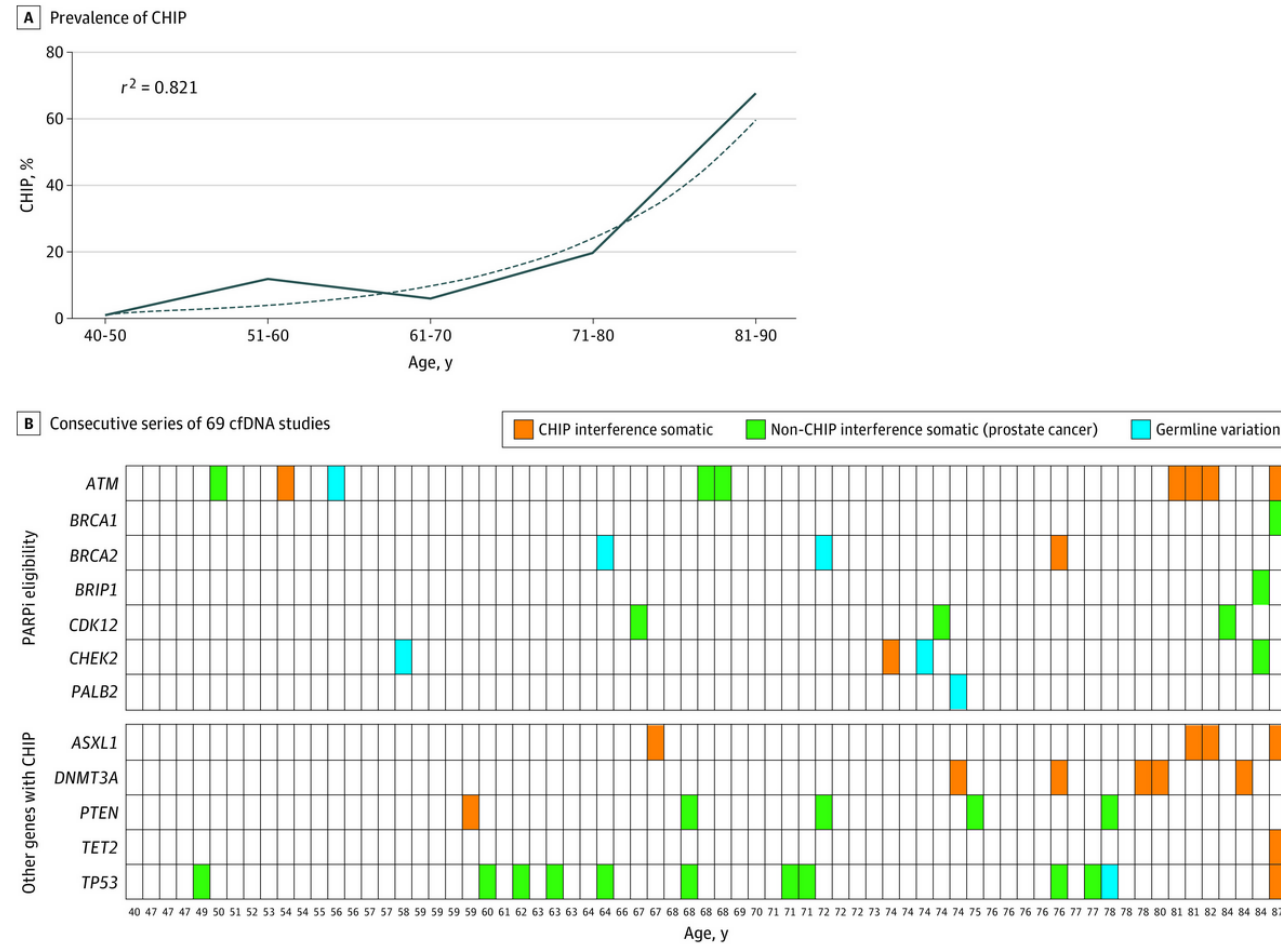
Concordance between biopsies and ctDNA is high

Similar mutation profiles

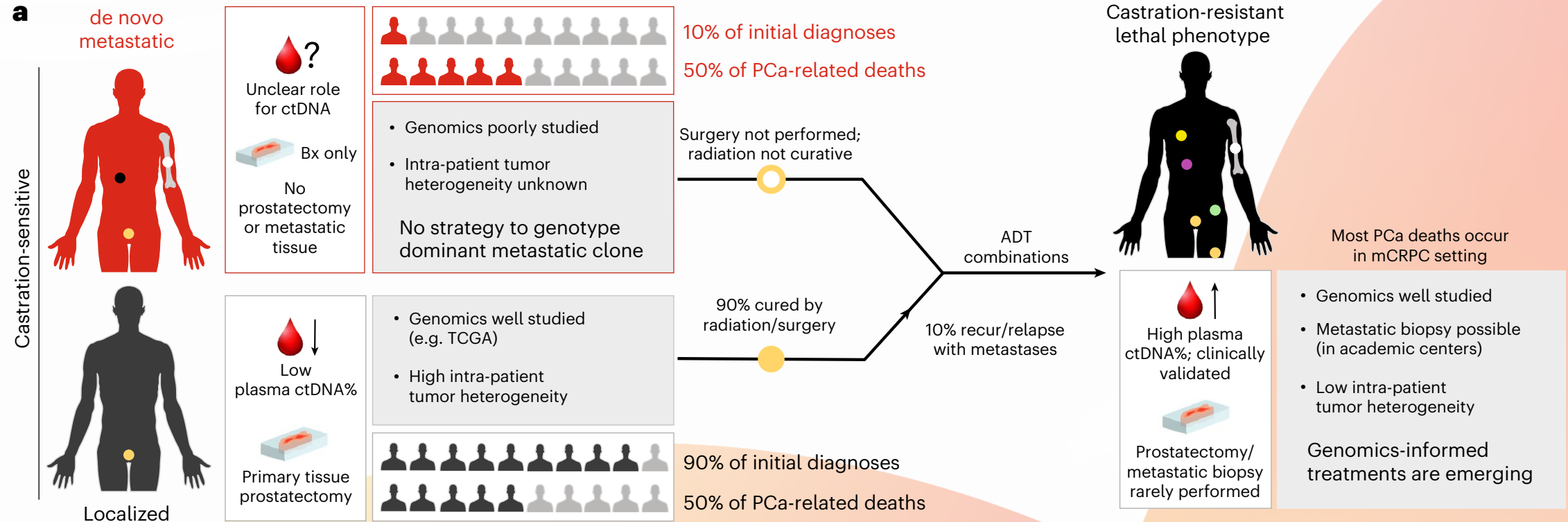


Similar gene copy numbers





The biological and clinical challenge of the novo mCSPC



Why should we think about the de-escalation?

Living Longer



- But with more side-effects
- No significant improvement in HRQoL
- A substantial increase in cost

*A tale of Efficacy vs. value for the Patients
and the health care system*

Why should we think about de-escalation?



IT'S ALL
ABOUT THE
VALUE

For patients

- To live better and longer, avoid burdensome further treatment, and improve quality of life.

For payers

- Is it acceptable cost-wise? Can we afford it?
- Incremental cost-effectiveness ratio (ICER)

Conclusiones

- A mi juicio todavía es pronto para afirmar que hemos entrado en la época de la implementación de la medicina de precisión en la enfermedad hormonosenible metastásica.
- Si bien es cierto que los resultados presentados este año nos permiten decidir / intuir el mejor de los tratamientos para nuestros enfermos.
- La intensificación terapéutica ha permitido mejorar los resultados globales de nuestros enfermos, sin embargo, ahora tenemos un problema que es seleccionar aquellos que nos podemos permitir desescalarlos.

¡Gracias!

