

# **PARP Inhibition in the Management of Prostate Cancer — Where We Are and Where We're Headed**

**Thursday, June 23, 2022  
5:00 PM – 6:00 PM ET**

## **Faculty**

**Johann S de Bono, MB ChB, MSc, PhD, FMedSci  
Fred Saad, MD**

## **Moderator**

**Neil Love, MD**

# Faculty



**Johann S de Bono, MB ChB, MSc, PhD, FMedSci**  
Regius Professor of Cancer Research  
Professor of Experimental Cancer Medicine and  
Honorary Consultant in Medical Oncology  
Head of Clinical Studies Division  
Director of Drug Development Unit  
Head of the Prostate Cancer Targeted Therapy Group  
The Institute of Cancer Research and  
The Royal Marsden NHS Foundation Trust  
London, United Kingdom



**Fred Saad, MD**  
Professor and Chief of Urology  
Director of GU Oncology  
Raymond Garneau Chair in Prostate Cancer  
University of Montreal Hospital Center (CHUM)  
Director, Prostate Cancer Research  
Montreal Cancer Institute/CRCHUM  
Montréal, Québec, Canada



**MODERATOR**  
**Neil Love, MD**  
Research To Practice

## Commercial Support

This activity is supported by educational grants from AstraZeneca Pharmaceuticals LP and Merck.

## Dr Love — Disclosures

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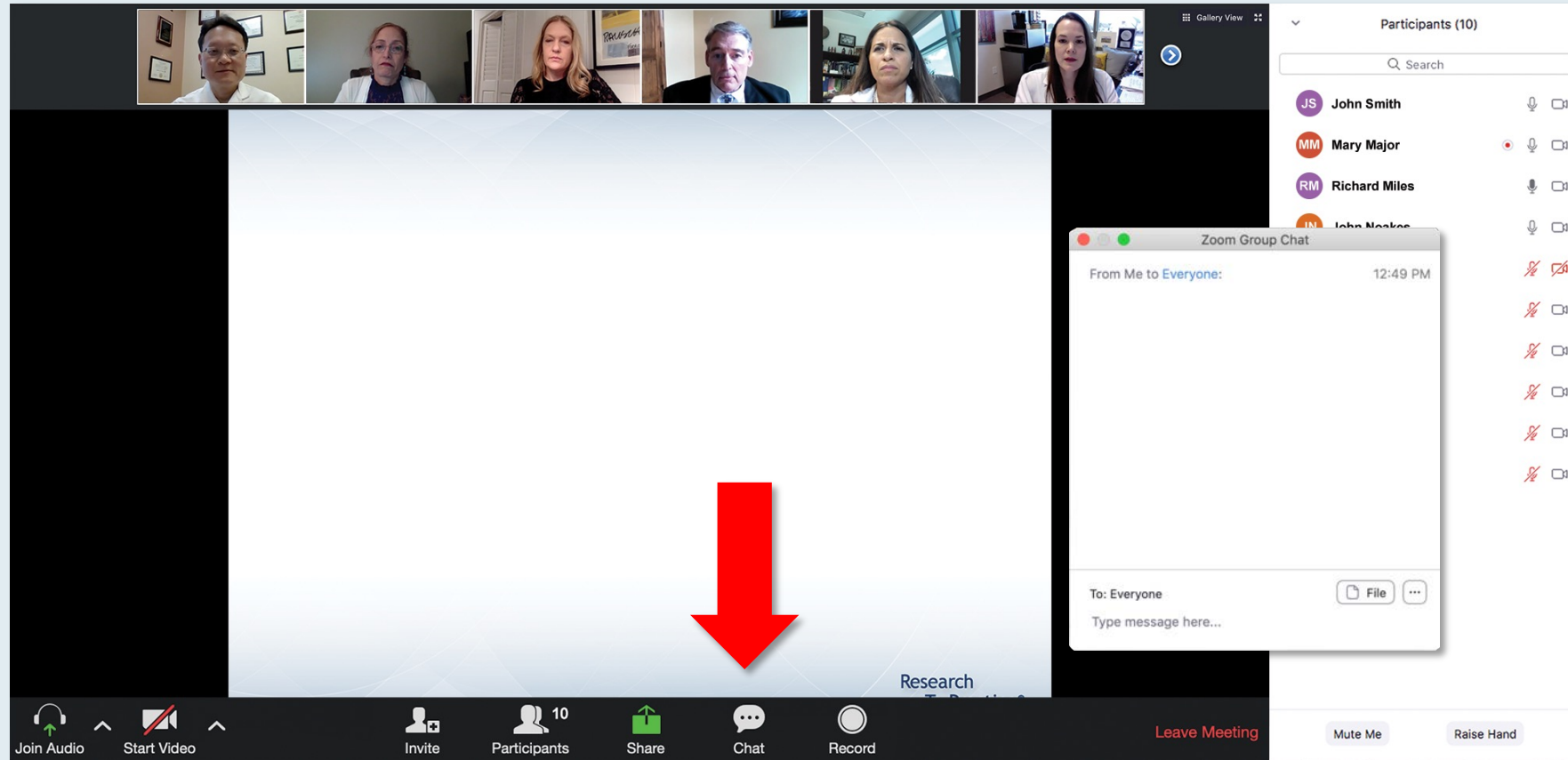
# Prof de Bono — Disclosures

No relevant conflicts of interest to disclose

## Dr Saad — Disclosures

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# We Encourage Clinicians in Practice to Submit Questions



Feel free to submit questions now before the program begins and throughout the program.

# Familiarizing Yourself with the Zoom Interface

## Expand chat submission box

The screenshot displays a Zoom meeting interface. At the top, there's a header bar with participant names: RTP Coordinat..., Kirsten Miller, RTP Mike Rivera, and Lisa Suarez. Below this, a slide titled "Meet The Professor Program Participating Faculty" is shown. The slide lists six faculty members with their photos and titles:

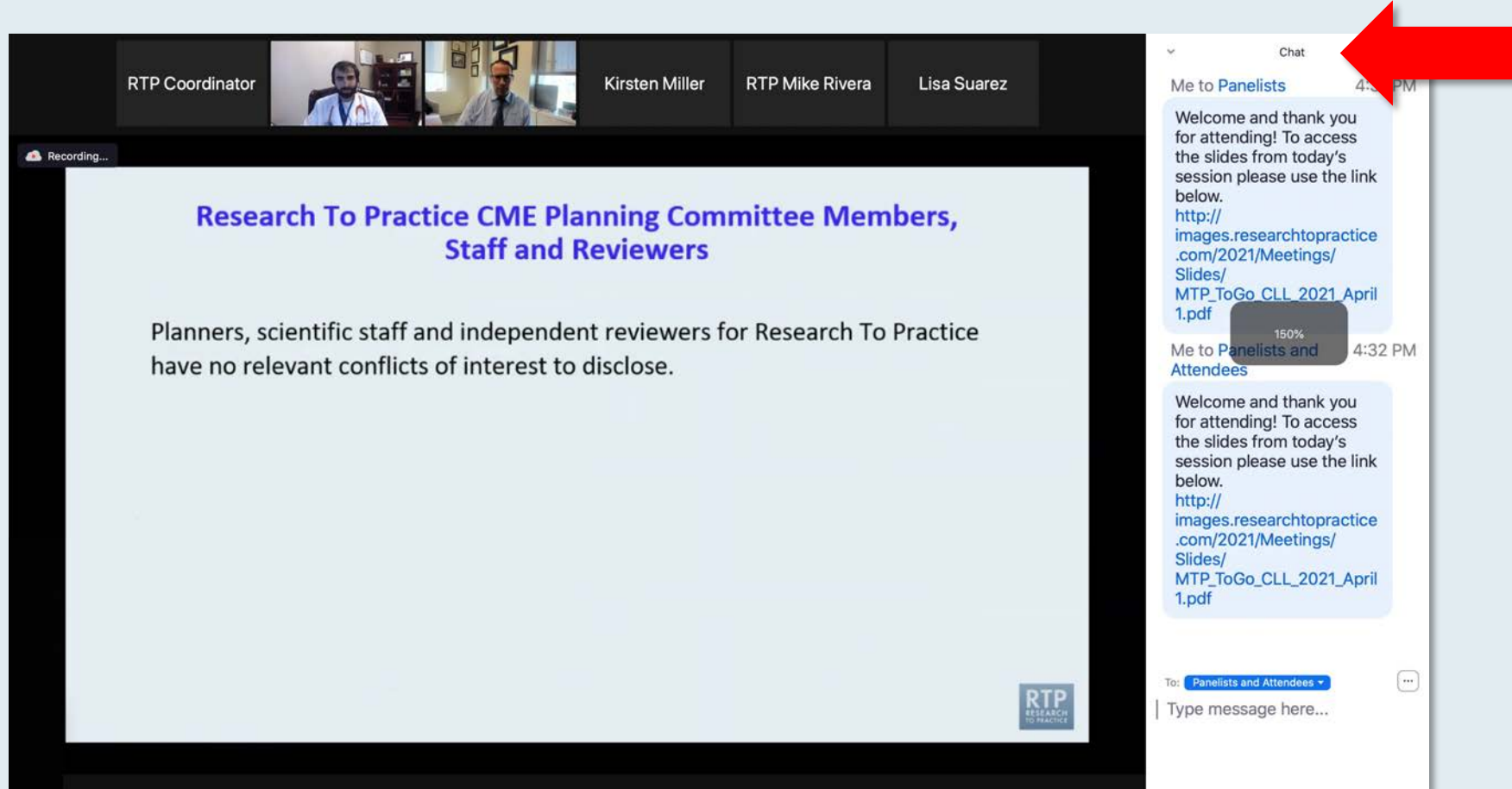
- Nancy L Bartlett, MD**  
Professor of Medicine  
Koman Chair in Medical Oncology  
Washington University School of Medicine  
St Louis, Missouri
- Jonathan W Friedberg, MD, MMSc**  
Samuel E Durand Professor of Medicine  
Director, James P Wilmot Cancer Institute  
University of Rochester  
Rochester, New York
- Carla Casulo, MD**  
Associate Professor of Medicine  
Division of Hematology/Oncology  
Director, Hematology/Oncology Fellowship Program  
University of Rochester  
Wilmot Cancer Institute  
Rochester, New York
- Brian T Hill, MD, PhD**  
Director, Lymphoid Malignancy Program  
Cleveland Clinic Taussig Cancer Institute  
Cleveland, Ohio
- Christopher R Flowers, MD, MS**  
Chair, Professor  
Department of Lymphoma/Myeloma  
The University of Texas MD Anderson Cancer Center  
Houston, Texas
- Brad S Kahl, MD**  
Professor of Medicine  
Washington University School of Medicine  
Director, Lymphoma Program  
Siteman Cancer Center  
St Louis, Missouri

On the right side, a chat window is open. It shows two messages from "Me to Panelists" and "Me to Panelists and Attendees" at 4:31 PM and 4:32 PM respectively. The messages contain a welcome message and a link to a PDF file: [http://images.researchtopractice.com/2021/Meetings/Slides/MTP\\_ToGo\\_CLL\\_2021\\_April1.pdf](http://images.researchtopractice.com/2021/Meetings/Slides/MTP_ToGo_CLL_2021_April1.pdf). At the bottom of the chat window, there's a "To:" dropdown menu set to "Panelists and Attendees" and a text input field labeled "Type message here...". A red arrow points to the white line above the text input field, indicating where to drag to expand the box.

Drag the white line above the submission box up to create more space for your message.

# Familiarizing Yourself with the Zoom Interface

## Increase chat font size



**Press Command (for Mac) or Control (for PC) and the + symbol.  
You may do this as many times as you need for readability.**

# ONCOLOGY TODAY

WITH DR NEIL LOVE

## Novel Agents and Strategies for the Treatment of Metastatic Castration-Resistant Prostate Cancer



DR EVAN YU

FRED HUTCHINSON CANCER RESEARCH CENTER



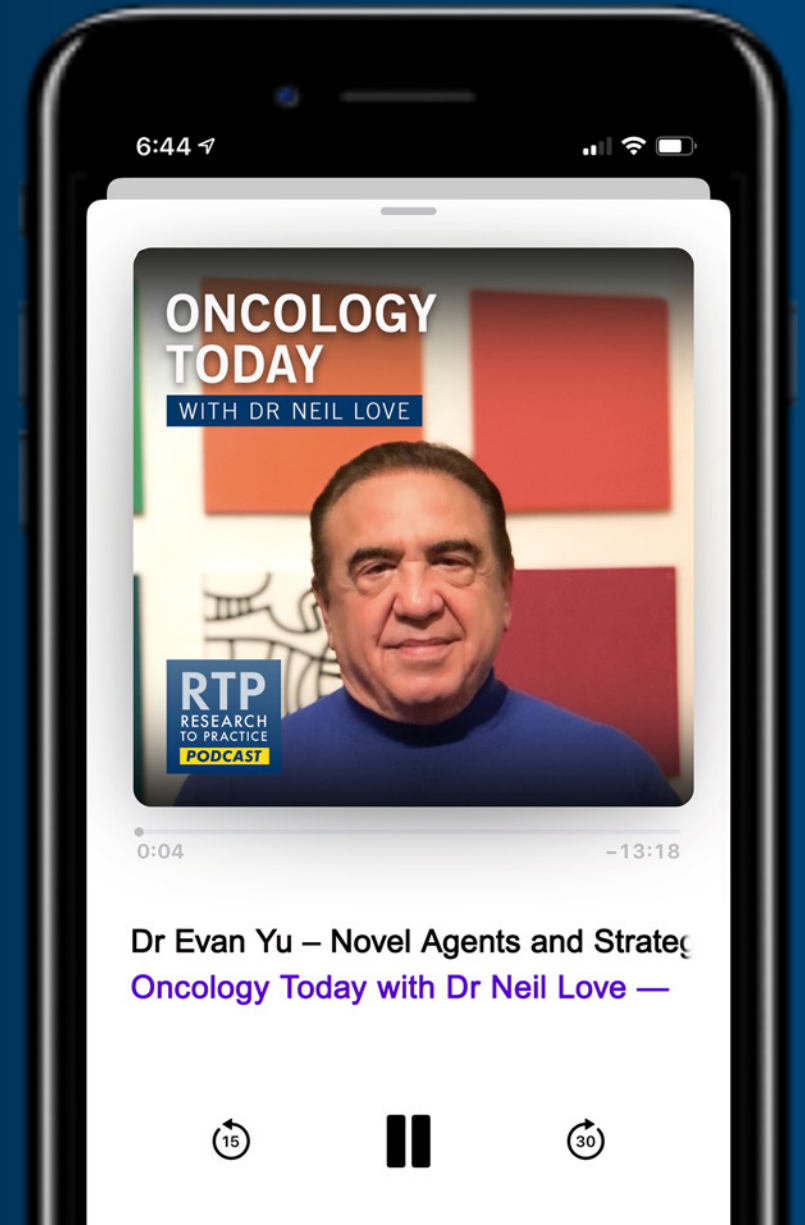
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# ***Meet The Professor***

## **Optimizing the Management of Chronic Myeloid Leukemia**

**Tuesday, June 28, 2022  
5:00 PM – 6:00 PM ET**

**Faculty**

**Jorge E Cortes, MD**

**Moderator**

**Neil Love, MD**

# ***Meet The Professor***

## **Current and Future Management of Non-Small Cell Lung Cancer with an EGFR Mutation**

**Thursday, June 30, 2022  
5:00 PM – 6:00 PM ET**

### **Faculty**

**Joel W Neal, MD, PhD**

### **Moderator**

**Neil Love, MD**

# *Meet The Professor*

## Optimizing the Management of Ovarian Cancer

Wednesday, July 6, 2022  
5:00 PM – 6:00 PM ET

**Faculty**

**Ursula Matulonis, MD**

**Moderator**

**Neil Love, MD**

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## **Optimizing the Management of Hepatobiliary Cancers**

**Thursday, July 7, 2022  
5:00 PM – 6:00 PM ET**

**Faculty**

**Ghassan Abou-Alfa, MD, MBA**

**Moderator**

**Neil Love, MD**

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## **Optimizing the Management of Gastroesophageal Cancers**

**Tuesday, July 12, 2022  
5:00 PM – 6:00 PM ET**

**Faculty**

**Samuel J Klempner, MD**

**Moderator**

**Neil Love, MD**

# Management of Acute Myeloid Leukemia and Myelodysplastic Syndromes – A Review of the 2022 ASCO Annual Meeting and EHA Congress

Wednesday, July 13, 2022  
5:00 PM – 6:00 PM ET

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Richard M Stone, MD

**Moderator**

Neil Love, MD

***Thank you for joining us!***

***CME and MOC credit information will be emailed to each participant within 5 business days.***

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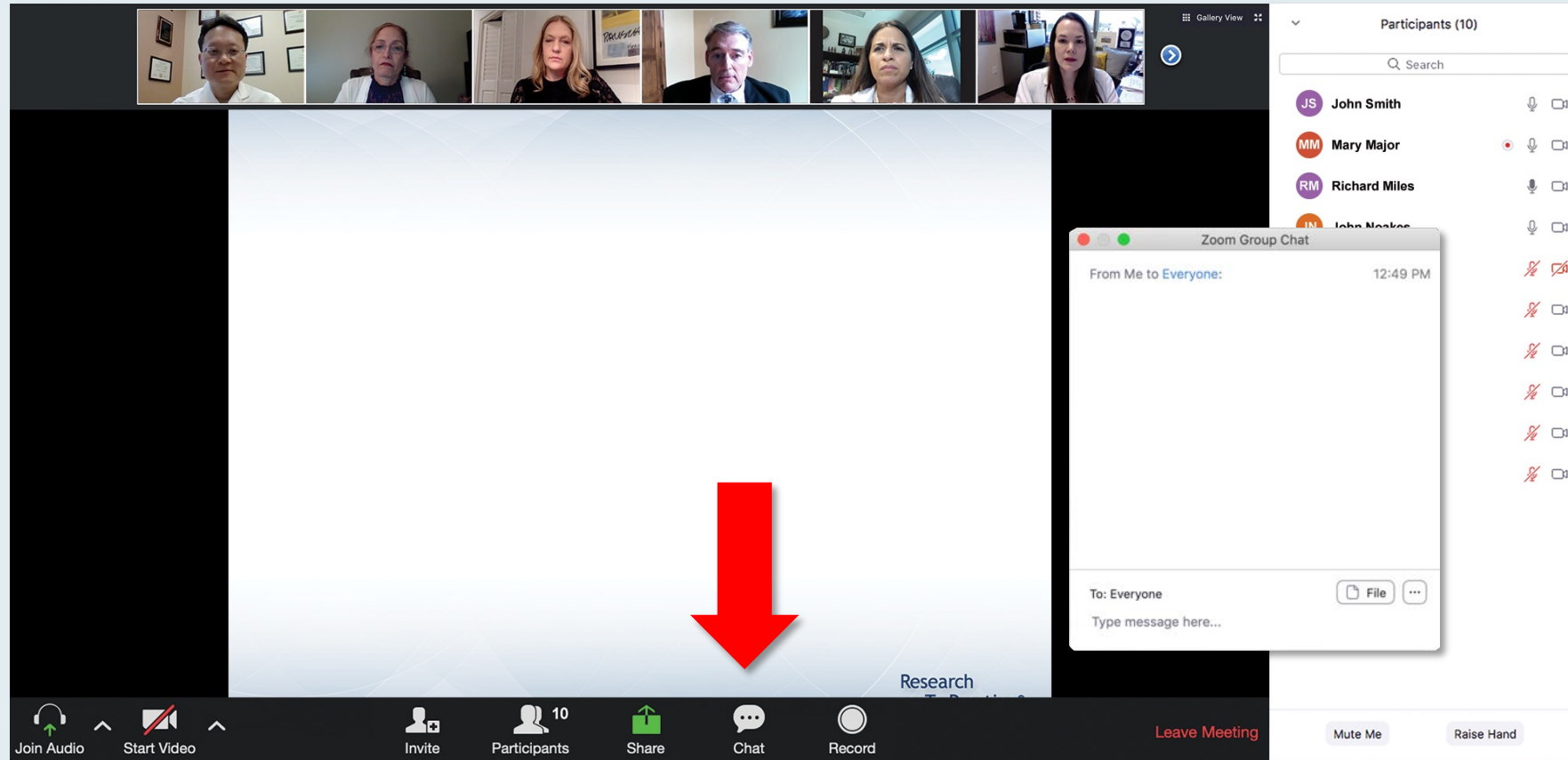


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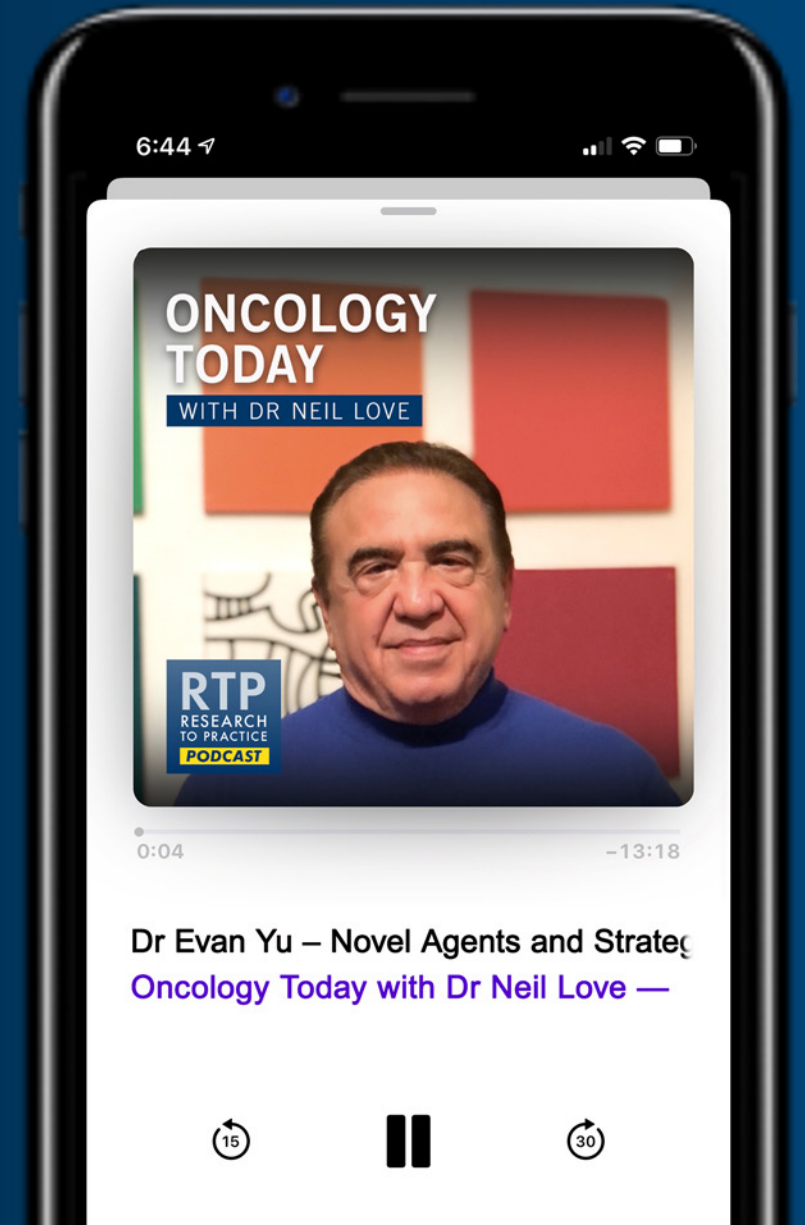
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## PARP inhibition for Prostate Cancer

Johann Sebastian de Bono

Regius Professor, Head of the Drug Development Unit,  
The Institute of Cancer Research and Royal Marsden Hospital,  
London, United Kingdom

## Opening the door for PARPi treatment: What lies ahead?

Fred Saad MD FRCS

Professor and Chairman of Urology  
Director of GU Oncology  
Raymond Garneau Chair in Prostate Cancer  
University of Montreal Hospital Center  
Montreal, QC, Canada



# Dabrafenib/Trametinib Combination Granted Accelerated Approval for a Tumor-Agnostic Indication for Solid Tumors with BRAF V600E Mutations

## Press Release – June 23, 2022

“...the US Food and Drug Administration (FDA) granted accelerated approval for dabrafenib + trametinib for the treatment of adult and pediatric patients 6 years of age and older with unresectable or metastatic solid tumors with BRAF V600E mutation who have progressed following prior treatment and have no satisfactory alternative treatment options. In accordance with the Accelerated Approval Program, continued approval for this indication may be contingent upon verification and description of clinical benefit in a confirmatory trial(s).

The FDA approval was based on clinical efficacy and safety demonstrated in three clinical trials. In the Phase II ROAR (Rare Oncology Agnostic Research) basket study and the NCI-MATCH Subprotocol H study, dabrafenib + trametinib resulted in overall response rates of up to 80% in patients with BRAF V600E solid tumors, including high- and low-grade glioma, biliary tract cancer and certain gynecological and gastrointestinal cancers. An additional study (Study X2101) demonstrated the clinical benefit and acceptable safety profile of dabrafenib + trametinib in pediatric patients.

The safety profile of dabrafenib + trametinib observed in these studies was consistent with the known safety profile in other approved indications.”

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# *Meet The Professor*

## Optimizing the Management of Ovarian Cancer

**Shannon N Westin, MD, MPH**

Associate Professor

Director, Early Drug Development

Department of Gynecologic Oncology and Reproductive Medicine

The University of Texas MD Anderson Cancer Center

Houston, Texas



# A Randomized, Phase III Trial to Evaluate Rucaparib Monotherapy as Maintenance Treatment in Patients With Newly Diagnosed Ovarian Cancer (ATHENA–MONO/GOG-3020/ENGOT-ov45)

Bradley J. Monk, MD<sup>1</sup>; Christine Parkinson, MD<sup>2</sup>; Myong Cheol Lim, MD, PhD<sup>3</sup>; David M. O'Malley, MD<sup>4</sup>; Ana Oaknin, MD, PhD<sup>5</sup>; Michelle K. Wilson, MD<sup>6</sup>; Robert L. Coleman, MD<sup>7</sup>; Domenica Lorusso, MD, PhD<sup>8</sup>; Paul Bessette, MD<sup>9</sup>; Sharad Ghamande, MD<sup>10</sup>; Athina Christopoulou, MD, PhD<sup>11</sup>; Diane Provencher, MD<sup>12</sup>; Emily Prendergast, MD<sup>13</sup>; Fuat Demirkiran, MD<sup>14</sup>; Olga Mikheeva, MD<sup>15</sup>; Oladapo Yeku, MD, PhD<sup>16</sup>; Anita Chudecka-Glaz, MD, PhD<sup>17</sup>; Michael Schenker, MD, PhD<sup>18</sup>; Ramey D. Littell, MD<sup>19</sup>; Tamar Safra, MD<sup>20</sup>; Hung-Hsueh Chou, MD<sup>21,22</sup>; Mark A. Morgan, MD<sup>23</sup>; Vít Drochýtek, MD<sup>24</sup>; Joyce N. Barlin, MD<sup>25</sup>; Toon Van Gorp, MD<sup>26</sup>; Fred Ueland, MD<sup>27</sup>; Gabriel Lindahl, MD<sup>28,29</sup>; Charles Anderson, MD<sup>30</sup>; Dearbhaile C. Collins, MBBCh, MA, PhD<sup>31</sup>; Kathleen Moore, MD<sup>32</sup>; Frederik Marme, MD, PhD<sup>33</sup>; Shannon N. Westin, MD, MPH<sup>34</sup>; Iain A. McNeish, MD, PhD<sup>35</sup>; Danny Shih, BA<sup>36</sup>; Kevin K. Lin, PhD<sup>37</sup>; Sandra Goble, MS<sup>38</sup>; Stephanie Hume, PhD<sup>39</sup>; Keiichi Fujiwara, MD, PhD<sup>40</sup>; and Rebecca S. Kristeleit, MD, PhD<sup>41</sup>

*J Clin Oncol* 2022;[Online ahead of print].

# FDA Advises Manufacturer Not to Submit First-Line Maintenance sNDA for Rucaparib Until OS Survival Data from the ATHENA-MONO Trial Are More Mature

June 17, 2022

“In consultation with the FDA, [the manufacturer of rucaparib] recently was advised not to file a supplemental new drug application based on data from a cohort of the Phase III ATHENA study until the study’s overall survival data mature.

In the 8-K, [the manufacturer] said the FDA has accepted a request for a pre-NDA meeting and noted that the ATHENA-MONO portion of the Phase III study has met its primary endpoint of progression-free survival compared to placebo. OS is a secondary endpoint for ATHENA-MONO and the data are approximately 25% mature at present. [The manufacturer] said the FDA urged it to hold off filing for supplemental approval until the OS data reach 50% maturity, and indicated an advisory committee review would likely be necessary if the data were filed earlier than that point.

In a statement to *Scrip*, the firm said that although it cannot anticipate the outcome of the pre-NDA meeting, ‘we are encouraged that the FDA is willing to have a dialogue.’ [They] estimate the ATHENA-MONO OS data will reach 50% maturity in approximately two years.”

# ***Meet The Professor***

## **Optimizing the Management of Gastroesophageal Cancers**

**Eric Van Cutsem, MD, PhD**

Professor of Medicine

Digestive Oncology

University Hospitals Leuven

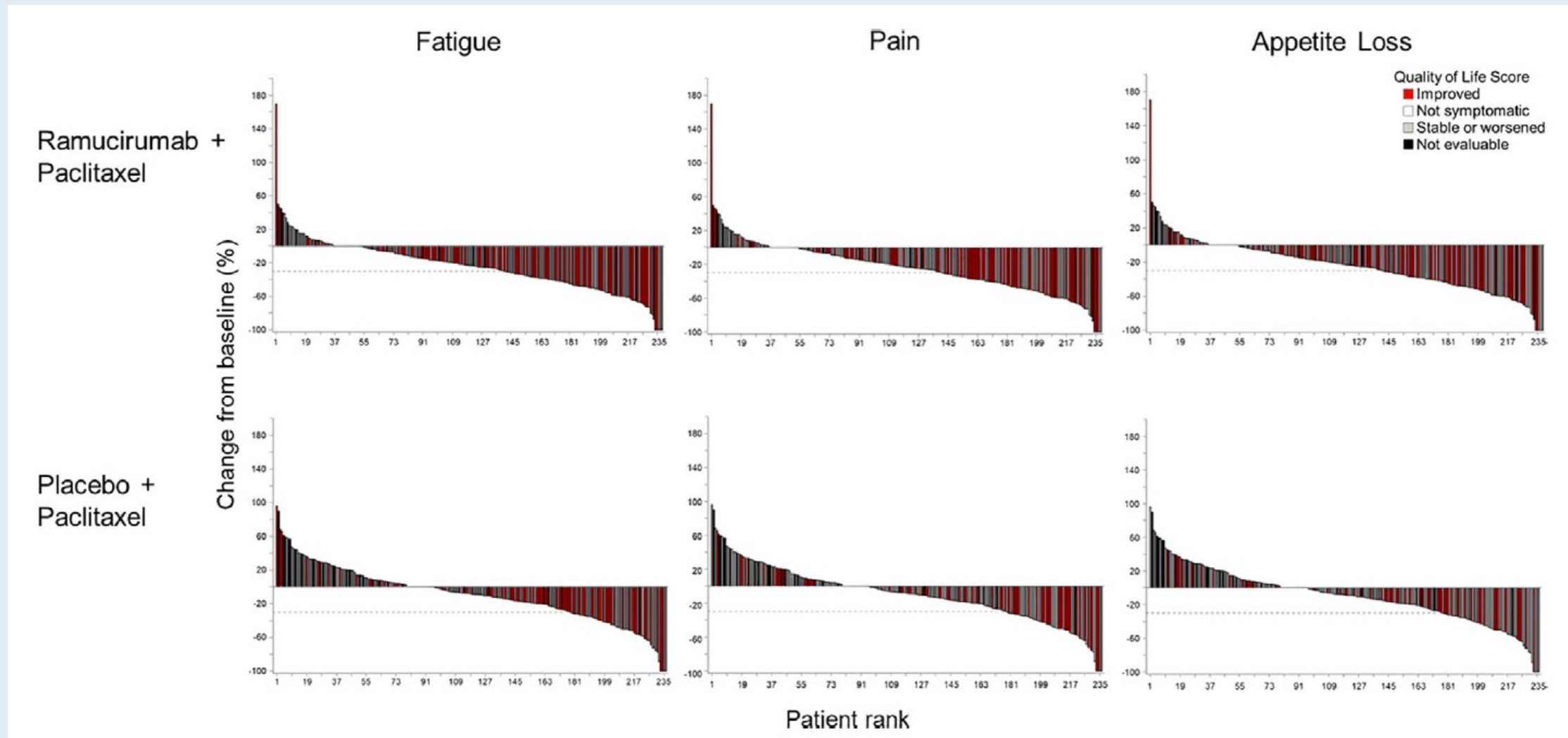
Leuven, Belgium



# Tumor Response and Symptom Palliation from RAINBOW, a Phase III Trial of Ramucirumab Plus Paclitaxel in Previously Treated Advanced Gastric Cancer

STEFANO CASCINU <sup>a</sup>, GYÖRGY BODOKY <sup>b</sup>, KEI MURO <sup>c</sup>, ERIC VAN CUTSEM <sup>d</sup>, SANG CHEUL OH <sup>e</sup>, GUNNAR FOLPRECHT <sup>f</sup>,  
SUMITRA ANANDA,<sup>g</sup> GUSTAVO GIROTTO,<sup>h</sup> ZEV A. WAINBERG <sup>i</sup>, MARIA LUISA LIMON MIRON,<sup>j</sup> JAFFER AJANI <sup>k</sup>, RAN WEI,<sup>l</sup> ASTRA M. LIEPA <sup>m</sup>,  
ROBERTO CARLES <sup>m</sup>, MICHAEL EMIG,<sup>m</sup> ATSUSHI OHTSU<sup>n</sup>

# Association of Best Percent Change in Tumor Size with Best Improvement in Selected Symptoms



# Agenda

**Introduction: This Week on RTP**

**MODULE 1: PARP Inhibitors in Prostate Cancer – Top 10 List**

**MODULE 2: Optimal Integration of PARP Inhibitor Monotherapy into the Management of Metastatic Castration-Resistant Prostate Cancer (mCRPC) – Prof de Bono**

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Consider how you felt when you got up this morning (eg, energy level, acute or chronic health issues) and compare that to how you generally felt 2 months ago on scale of 1 to 10, with 1 being much worse today and 10 being much better today.

1. 1 – much worse

2. 2

3. 3

4. 4

5. 5 – status quo

6. 6

7. 7

8. 8

9. 9

10. 10 – much better

# PARP Inhibitors in Prostate Cancer

## Top Ten List

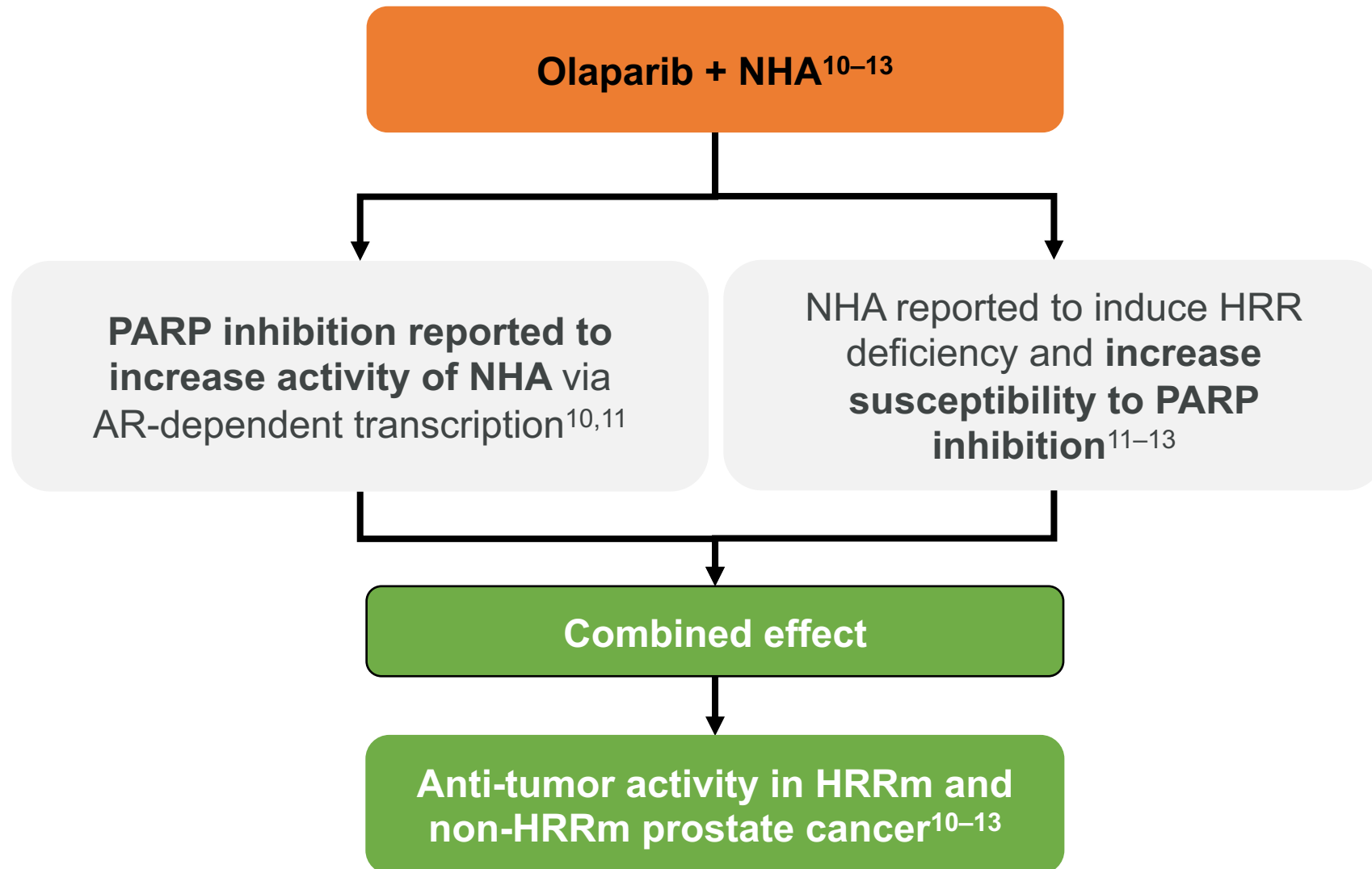
1. Genomic workup: Metastatic disease?
2. Role of liquid biopsy?
3. BRCA 1 vs BRCA 2? Other germline mutations?
4. Somatic mutations?
5. LOH, HRD scores?
6. Use of platinum agents
7. PARP inhibitors: First-line therapy for mCRPC (PROPEL, MAGNITUDE)
8. PARP inhibitors: Second-line and beyond
9. Prevention and management of toxicity/side effects
10. Resistance mechanisms; PARP inhibitor rechallenge

Last but not least in light of the PROpel and MAGNITUDE trials:  
Is there any rationale for PARPi to work in Pca without DDR?

**My** opinion:

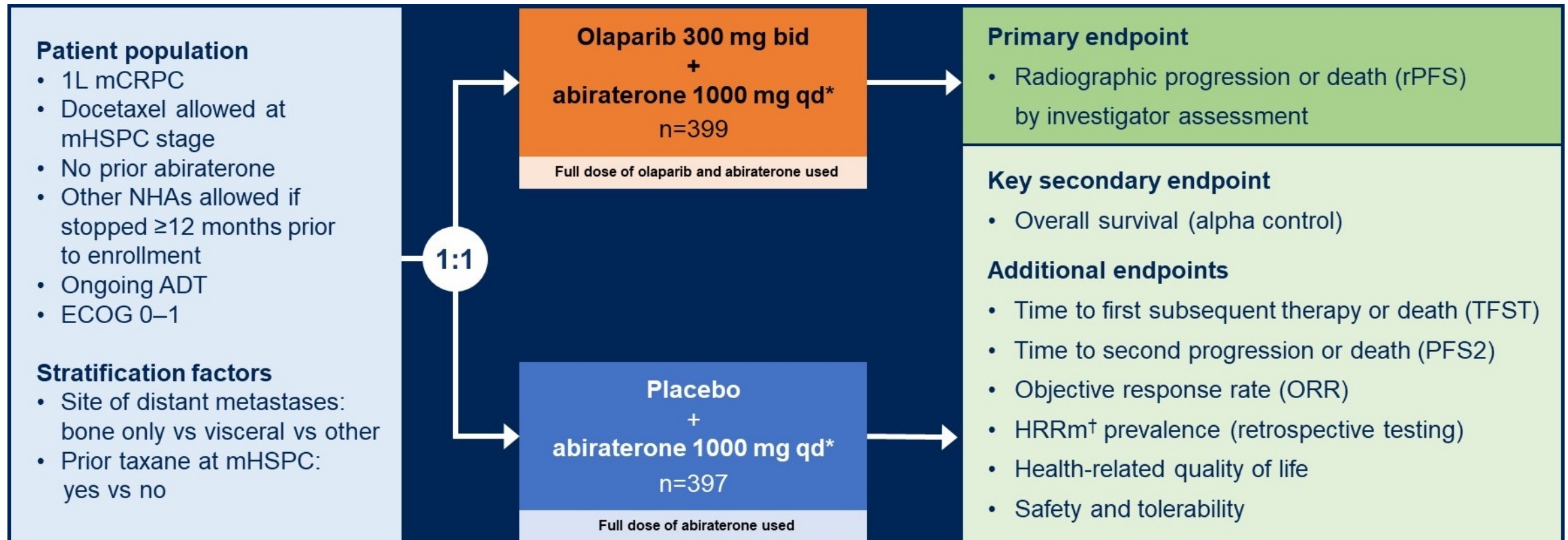
- Does PARPi block AR signaling?
  - If it did PSA falls would have been seen in non-DDR Pca pts.
- Does AR blockade downregulate HRD and sensitize to PARPi?
  - If it did Abi/enza would hugely increase PARPi RR
- Is there some other MOA?
  - **Possibly**; suggestions of an impact on immune response? STING?
  - Clearance of emerging neuroendocrine clones (RB1/RNASEH2B/BRCA2 lost)
  - Off target effects?

# Rationale for combining PARP inhibitors and NHAs



# PROpel

Randomized, double-blind, placebo-controlled Phase III trial



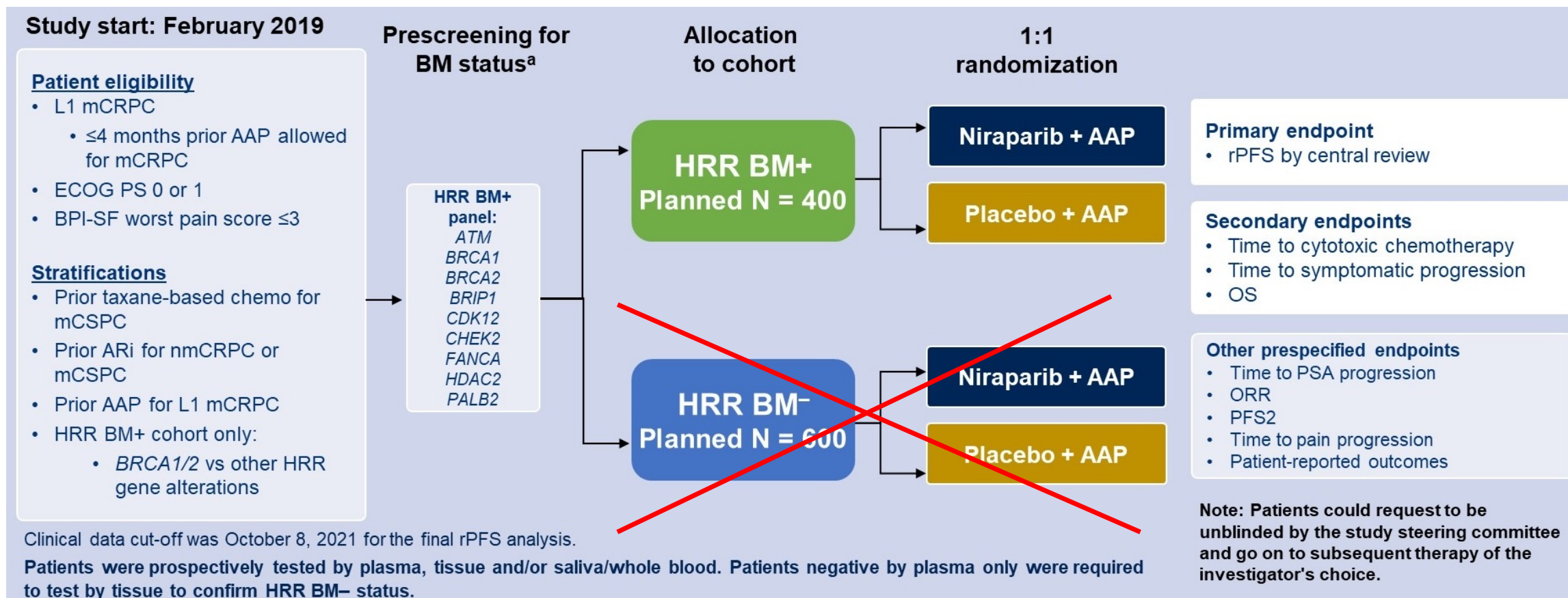
**Baseline demographics:**  
**HRRm status**

HRRm status <sup>†</sup>		
HRRm	111 (27.8)	115 (29.0)
Non-HRRm	279 (69.9)	273 (68.8)
HRRm unknown	9 (2.3)	9 (2.3)

Courtesy of Fred Saad, MD

# MAGNITUDE

## Randomized, double-blind, placebo-controlled Phase III trial



# PARP Inhibitors in Prostate Cancer

## Top Ten List

1. Genomic workup: Metastatic disease?
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# PARP inhibition for Prostate Cancer

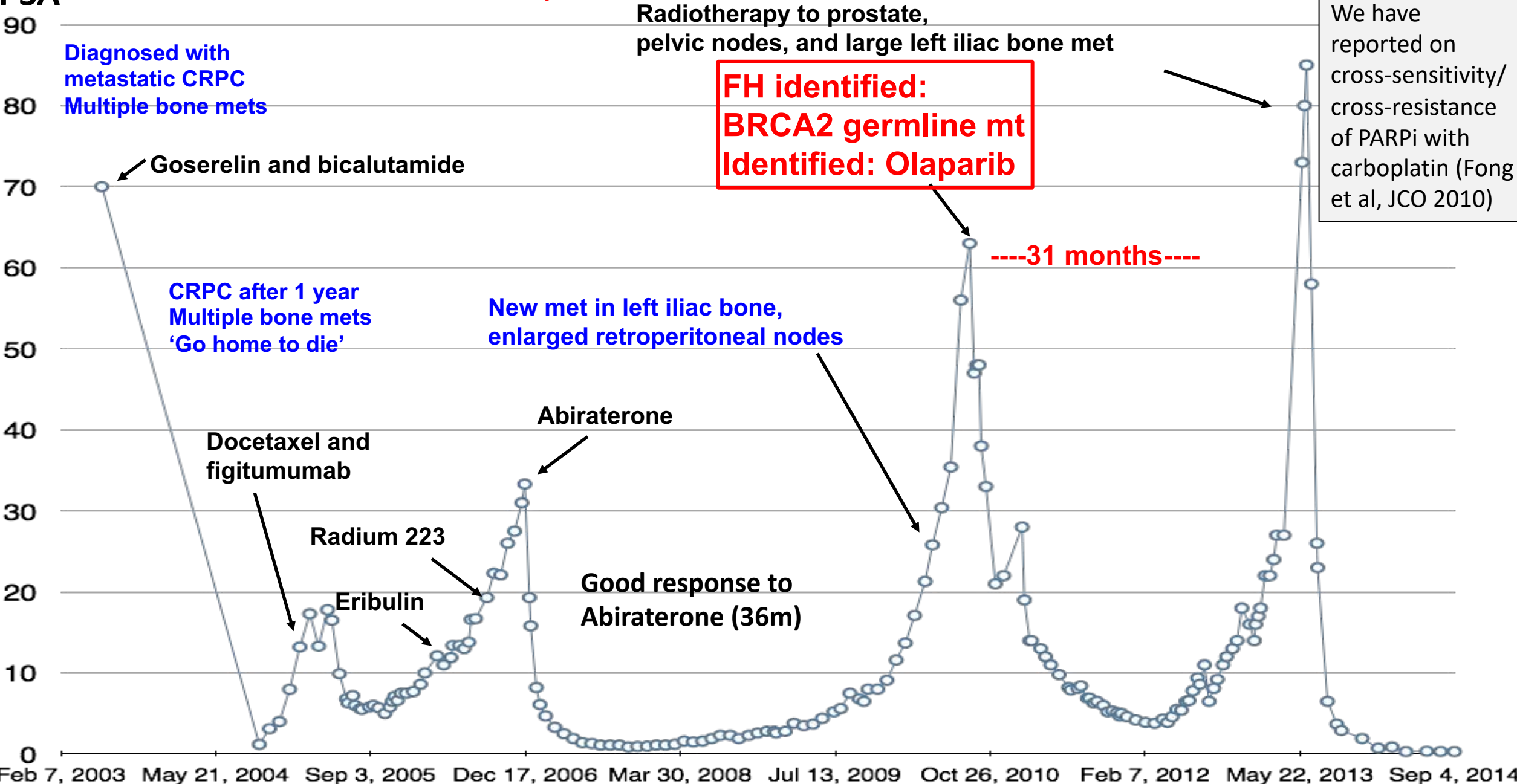
Johann Sebastian de Bono

Regius Professor, Head of the Drug Development Unit,  
The Institute of Cancer Research and Royal Marsden Hospital,  
London, United Kingdom

# Conclusions

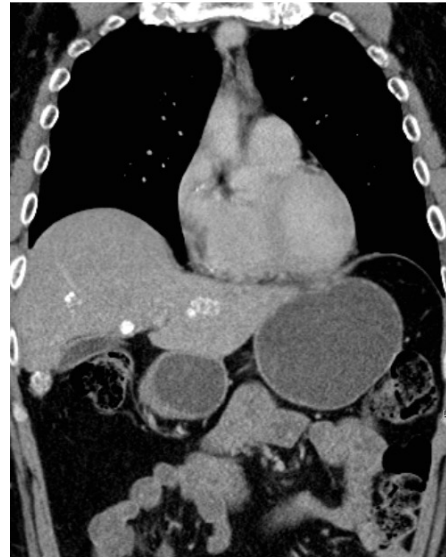
- Synthetic lethality strategies can change prostate cancer care
  - PARP inhibitors and platinum cross-resistant
- Germline DDR testing now a standard of care
  - And family cascade testing
  - Please remember to take a family history
- Increasingly complex predictive biomarkers
  - **Biallelic loss necessary to sensitize** to PARPi/platinum
  - BRCA2 homozygous deletions result in longer responses than BRCA2 mutations
  - ATM loss does sensitize to PARPi
  - MMRd and PD-1/PD-L1 targeting ICI
- Beware risks of plasma ctDNA NGS
  - Median tumour fraction 10-30% (ie 70-90% of DNA not tumor DNA)
  - Can miss (BRCA2) HOMDELs (super responders)
  - Can also mistake clonal hemopoietic (CHIP) mutations for tumor mutations

PSA Case Presentation – Prof de Bono: 65-year-old man



# Case Presentation – Prof de Bono HRD and carboplatin response

Almost complete  
resolution of liver  
metastases with residuum  
calcified abnormality



Healing lytic  
Bone metastasis



Treatment?



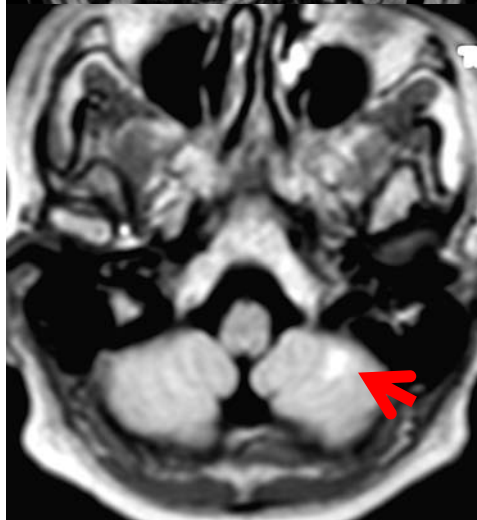
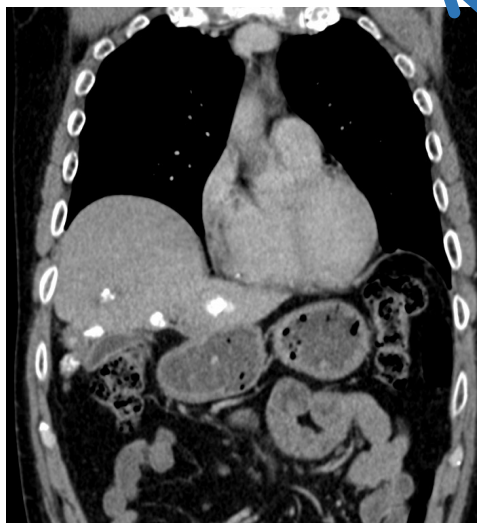
March 2015

Dying man.  
Age 44  
**Strong FH.**  
LFTs↑  
Referred  
post-abi,  
enza,  
docetaxel,  
cabazitaxel

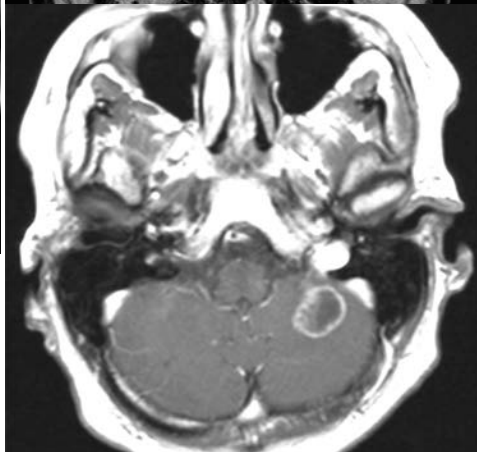
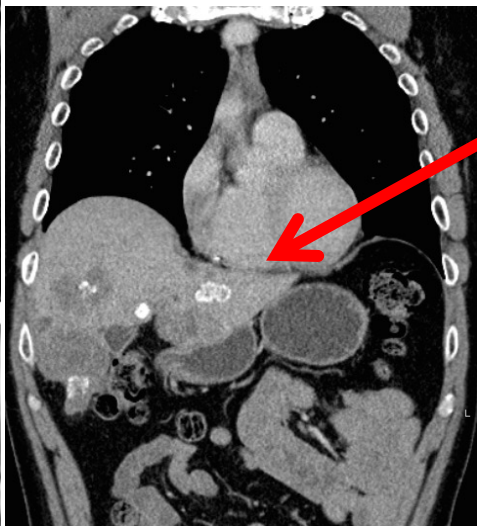
February 2017

Retreated with  
carbo AUC6

Relapse  
after 8  
months

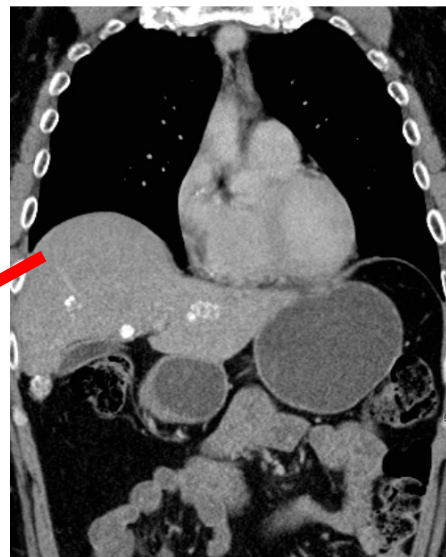


Cyberknife planning  
MRI



New solitary cerebellar  
metastasis

Almost complete  
resolution of liver  
metastases with residuum  
calcified abnormality



Healing lytic  
Bone metastasis

Very high HRD score  
on exome NGS

Courtesy of Johann S de Bono, MB ChB, MSc, PhD, FMedSci

Carboplatin  
AUC6 q21d



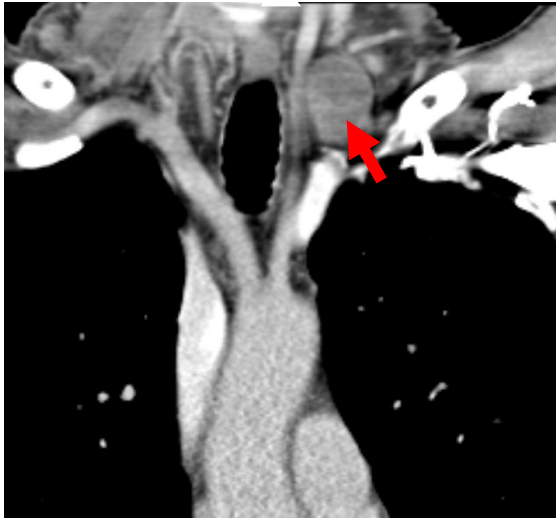
March 2015

Dying man.  
M1 at diagnosis  
**Strong FH.**  
Referred post-  
abi, enza,  
docetaxel,  
cabazitaxel.  
LFTs↑

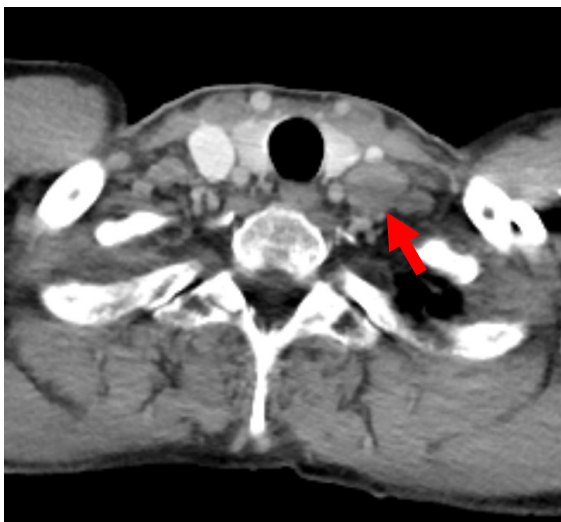
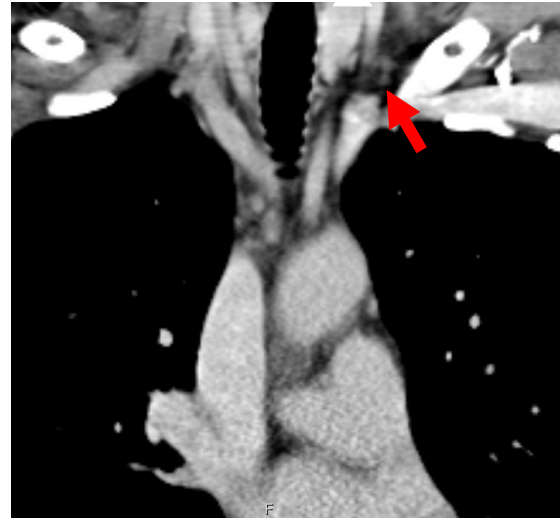
4-year long remission!

# PALB2 altered mCRPC responding patient on TOPARP-B

Baseline



Best response



29.05.18

29.07.19

Coronal and Axial Contrast Enhanced CT images at baseline and during treatment: Complete response (PR) of left supraclavicular lymphadenopathy (arrows). Patient also had very good response at the sites of small volume lymphadenopathy. This response lasted > 1 year in late stage mCRPC.

Patient had bi-allelic PALB2 loss.

# Agenda

**Introduction: This Week on RTP**

**MODULE 1: PARP Inhibitors in Prostate Cancer – Top 10 List**

**MODULE 2: Optimal Integration of PARP Inhibitor Monotherapy into the Management of Metastatic Castration-Resistant Prostate Cancer (mCRPC) – Prof de Bono**

**MODULE 3: Available Data with, Ongoing Investigation of and Potential Future Role for PARP Inhibitor-Based Combination Strategies – Dr Saad**

# Opening the door for PARPi treatment: What lies ahead?

Fred Saad MD FRCS

Professor and Chairman of Urology

Director of GU Oncology

Raymond Garneau Chair in Prostate Cancer

University of Montreal Hospital Center

Montreal, QC, Canada



# Conclusion

- Survival of men with mCRPC in the real world remains a problem
- Good first line options but early resistance/progression is a challenge
- Second line options are available **but** many patients do not get more than 1 line of effective therapy in the real world
- Less than half the men with prostate cancer will receive chemotherapy before dying from prostate cancer
- Building on effective first line options for mCRPC is critically needed
- PARP/NHT combination fulfills an unmet need of effective and tolerable first line combinations
  - In all patients? Only in HRR mutated?

# Successful phase 3 trials in mCRPC

Study	Agents	N	Indication	HR	ΔOS (mo)
<b>TAX-327<sup>1</sup></b>	DOC / P vs mito / P	1006	mCRPC, symptomatic or not	0.76	+2.9
<b>COU-AA-302<sup>2</sup></b>	ABI / P vs P	1088	mCRPC (pre-DOC), mild / no symptoms No visceral metastases	0.81	+4.4
<b>COU-AA-301<sup>3</sup></b>	ABI / P vs P	1195	mCRPC (post-DOC)	0.74	+4.6
<b>PREVAIL<sup>4</sup></b>	ENZ vs PBO	1717	mCRPC (pre-DOC), mild / no symptoms	0.77	+4.0
<b>AFFIRM<sup>5</sup></b>	ENZ vs PBO (or P)	1199	mCRPC (post-DOC)	0.63	+4.8
<b>TROPIC<sup>6</sup></b>	CABA / P vs mito / P	755	mCRPC (post-DOC)	0.70	+2.4
<b>ALSYMPCA<sup>7</sup></b>	Radium-223 vs PBO	921	mCRPC (post-DOC or unfit for DOC)	0.70	+3.6
<b>PROfound<sup>8</sup></b>	Olaparib vs NHT	245	mCRPC post-NHT (with HRRm)	0.69	+4.4
<b>VISION<sup>9</sup></b>	Lu-PSMA vs NHT	831	mCRPC post-NHT (with PSMA+) and chemo	0.62	+4.0

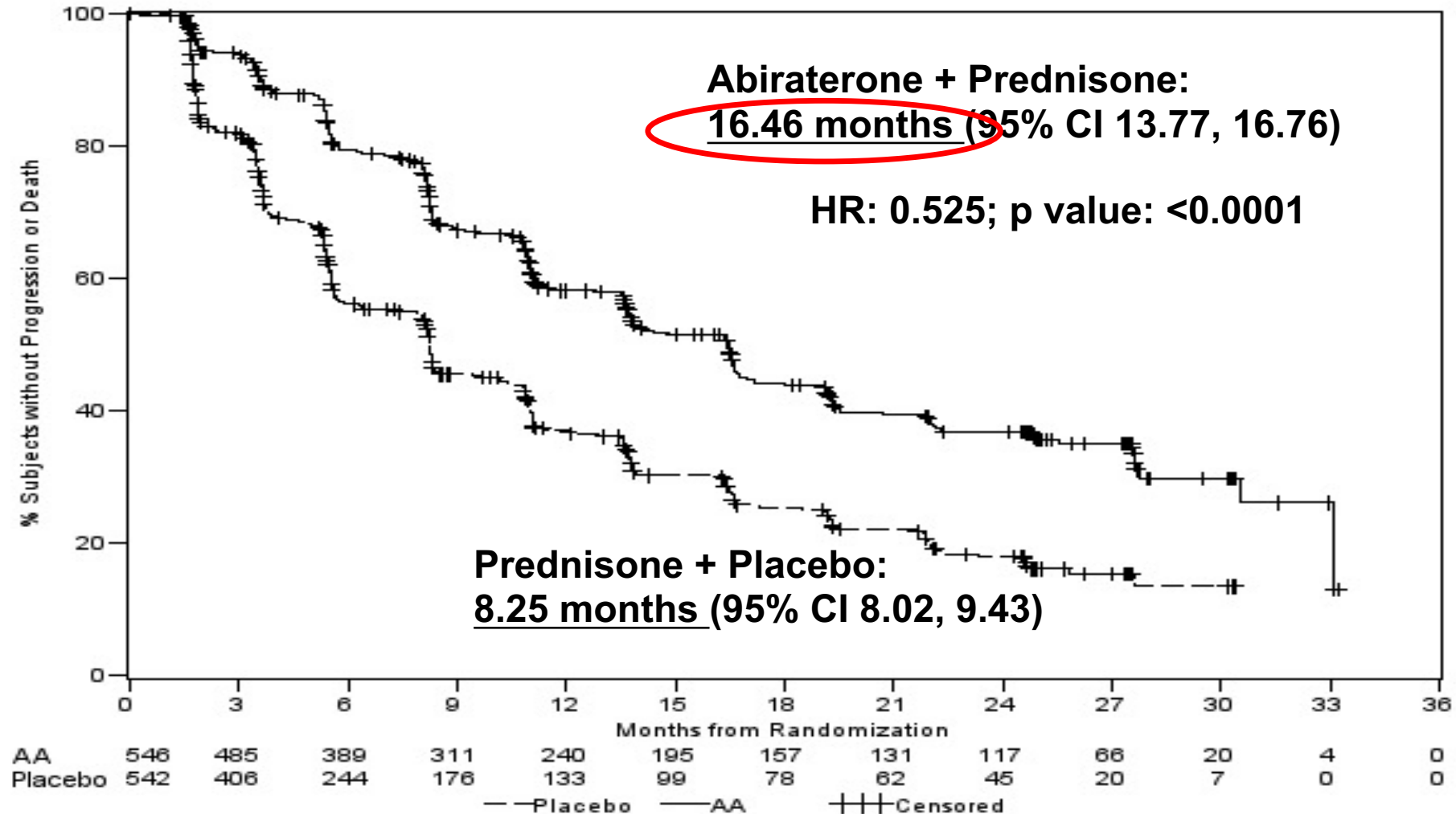
**All studies had a non life-prolonging control arm**

Courtesy of Fred Saad, MD

ABI, abiraterone; CABA, cabazitaxel; chemo, chemotherapy; DOC, docetaxel; ENZ, enzalutamide; HR, hazard ratio; HRRm, homologous recombination repair gene mutation; Lu-PSMA, Lutetium-177 prostate-specific membrane antigen; mCRPC, metastatic castration-resistant prostate cancer; mito, mitoxantrone; mo, months; NHT, neoadjuvant hormonal therapy; OS, overall survival; P, prednisone; PBO, placebo

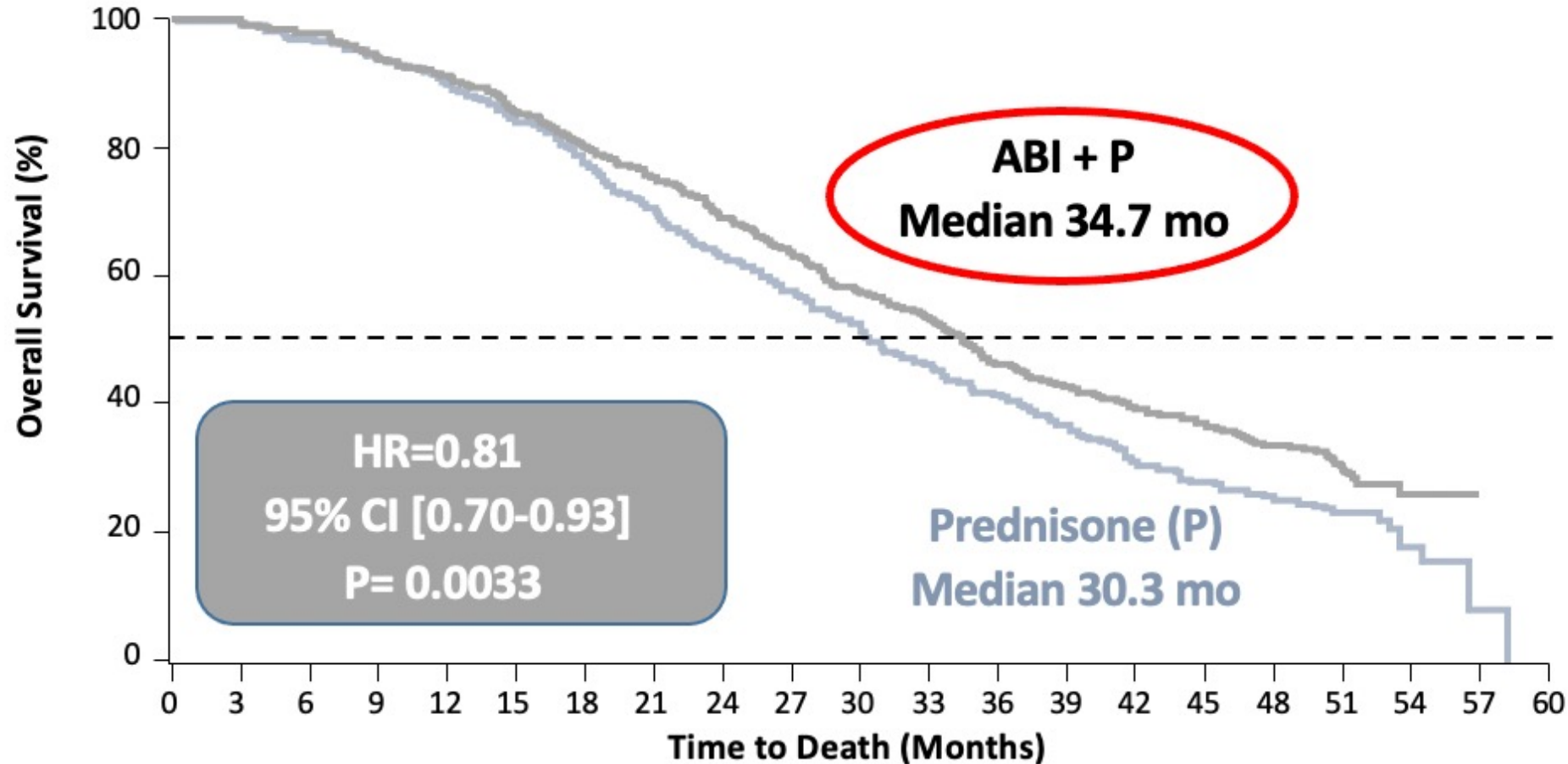
1. Tannock IF, et al. *N Engl J Med* 2004;351:1502–1512; 2. Ryan CJ, et al. *Lancet Oncol* 2015;16:152–160; 3. Rathkopf DE, et al. *Eur Urol* 2014;66:815–825; 4. Beer TM, et al. *Eur Urol* 2017;71:151–154; 5. Armstrong AJ, et al. *Cancer* 2017;123:2303–2311; 6. de Bono JS, et al. *Lancet* 2010;376:1147–1154; 7. Hoskin P, et al. *Lancet Oncol* 2014;15:1397–1406; 8. Hussain M, et al. *N Engl J Med* 2020;383:2345–2357; 9. Sartor O, et al. Online ahead of print. *N Engl J Med* 2021

# Standard of care Abiraterone: rPFS



Courtesy of Fred Saad, MD

# Abiraterone First Line – Overall Survival

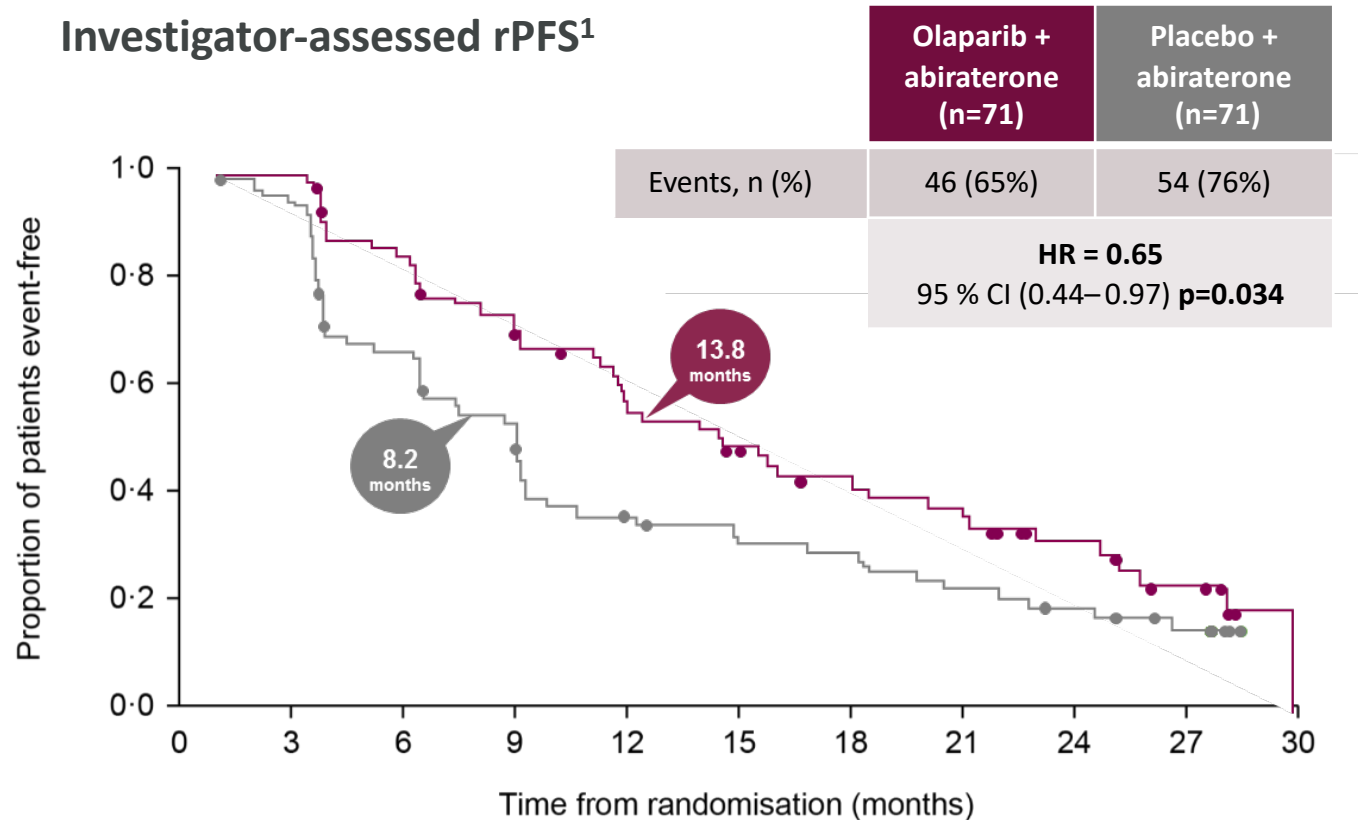


<b>ABI</b>	546	538	525	504	483	453	422	394	359	330	296	273	235	218	202	189	118	59	15	0	0
<b>P</b>	542	534	509	493	466	438	401	363	322	292	261	227	201	176	148	132	84	42	10	1	0

# Phase 2 study

Olaparib + abiraterone significantly prolonged rPFS vs. placebo + abiraterone in patients irrespective of HRRm status<sup>1,2</sup>

*A 35% decrease in the risk of disease progression or death was seen in the olaparib + abiraterone arm<sup>1</sup>*

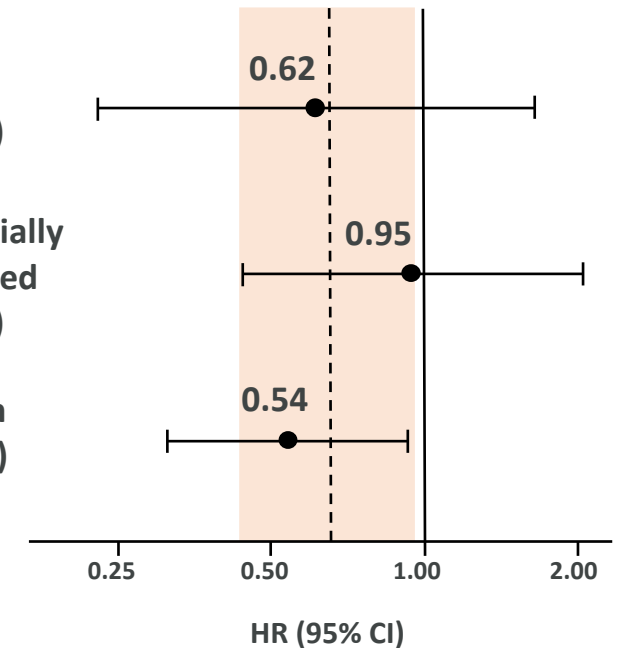


## rPFS by HRRm subgroup<sup>2\*</sup>

HRRm  
n=23 (16%)

HRRm partially  
characterized  
n=46 (32%)

Non-HRRm  
n=73 (51%)



\*Dashed line and shaded area show HR and 95% CI, respectively, for the intent to treat population

CI=confidence interval; HR=hazard ratio; HRRm=homologous recombination repair gene mutation; rPFS=radiographic progression free survival

1. Clarke N. et al. *Lancet Oncol* 2018;19(7):975–986; 2. Carr TH, et al. *Cancers* 2021;13(22):5830.

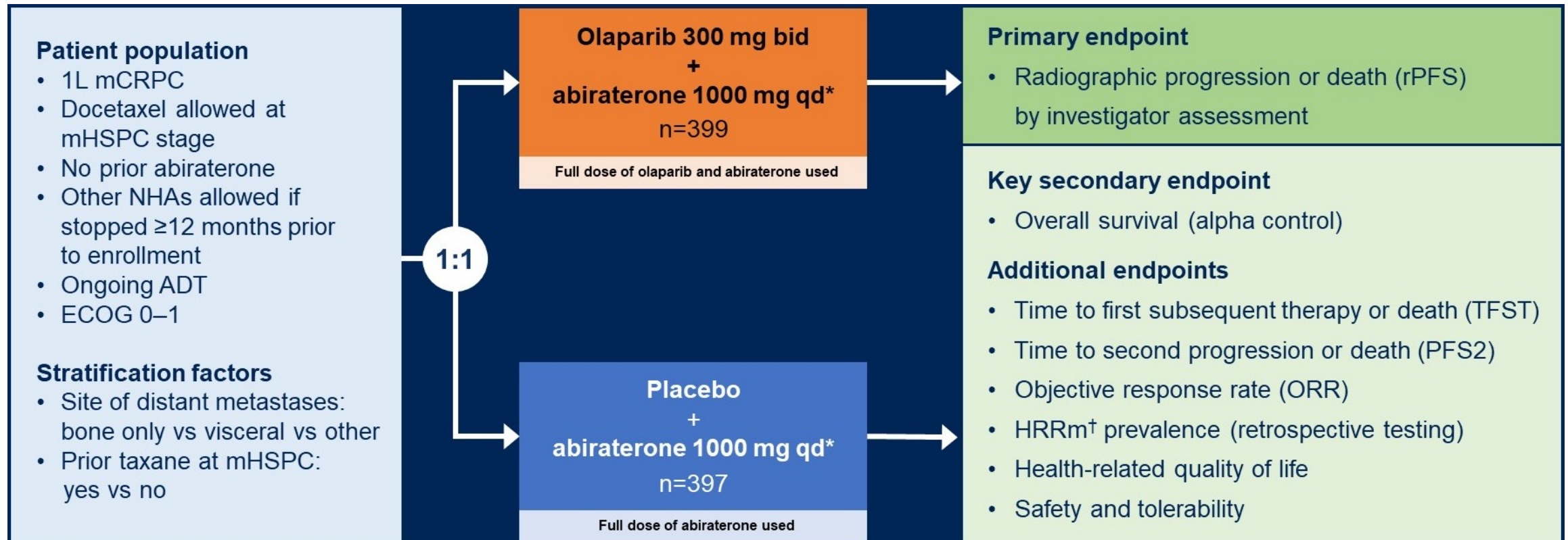
ORIGINAL ARTICLE

# Abiraterone and Olaparib for Metastatic Castration-Resistant Prostate Cancer

Noel W. Clarke, M.B.B.S., Ch.M., F.R.C.S.,<sup>1</sup> Andrew J. Armstrong, Sc.M., M.D.,<sup>2</sup> Antoine Thiery-Vuillemin, M.D., Ph.D.,<sup>3</sup> Mototsugu Oya, M.D.,<sup>4</sup> Neal Shore, M.D.,<sup>5</sup> Eugenia Loreda, M.D.,<sup>6</sup> Giuseppe Procopio, M.D.,<sup>7</sup> Juliana de Menezes, M.D.,<sup>8</sup> Gustavo Girotto, M.D.,<sup>9</sup> Cagatay Arslan, M.D.,<sup>10</sup> Niven Mehra, M.D., Ph.D.,<sup>11</sup> Francis Parnis, F.R.A.C.P.,<sup>12</sup> Emma Brown, M.D.,<sup>13</sup> Friederike Schlürmann, M.D.,<sup>14</sup> Jae Y. Joung, M.D., Ph.D.,<sup>15</sup> Mikio Sugimoto, M.D., Ph.D.,<sup>16</sup> Juan A. Virizuela, M.D., Ph.D.,<sup>17</sup> Urban Emmenegger, M.D.,<sup>18</sup> Jiri Navratil, M.D.,<sup>19</sup> Gary L. Buchsacher, Jr., M.D., Ph.D.,<sup>20</sup> Christian Poehlein, M.D.,<sup>21</sup> Elizabeth A. Harrington, Ph.D.,<sup>22</sup> Chintu Desai, Ph.D.,<sup>23</sup> Jinyu Kang, M.D.,<sup>24</sup> Fred Saad, M.D., F.R.C.S.,<sup>25</sup> for the PROpel Investigators\*

# PROpel

Randomized, double-blind, placebo-controlled Phase III trial



**Baseline demographics:**  
**HRRm status**

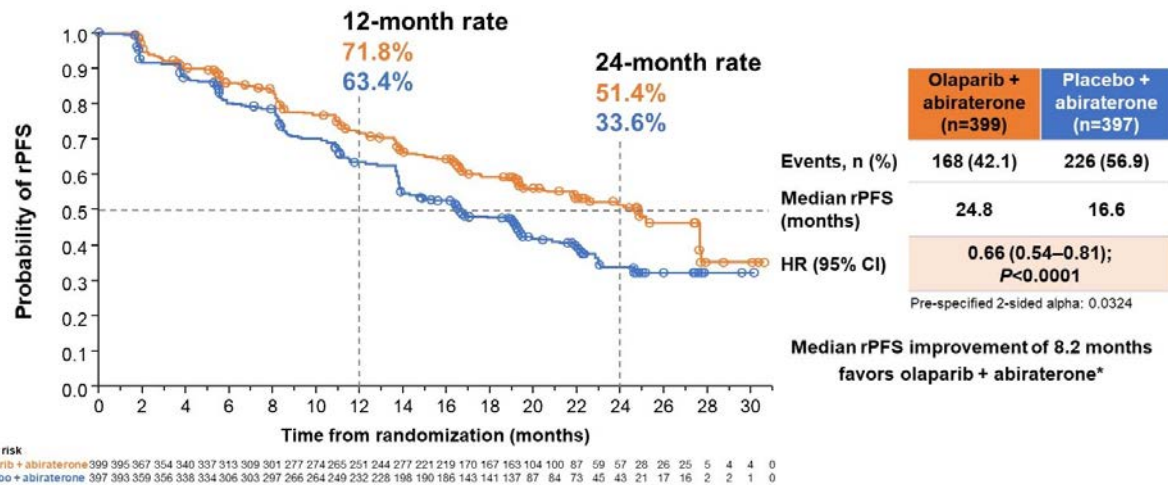
HRRm status <sup>†</sup>		
HRRm	111 (27.8)	115 (29.0)
Non-HRRm	279 (69.9)	273 (68.8)
HRRm unknown	9 (2.3)	9 (2.3)

Courtesy of Fred Saad, MD

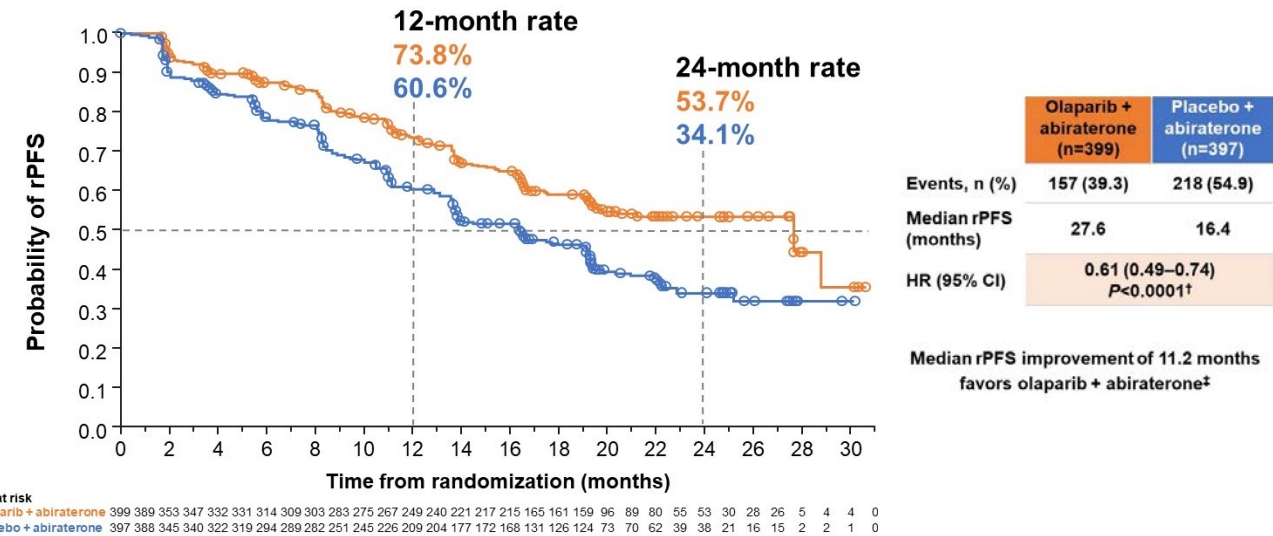
# PROpel

## Primary endpoint

### rPFS by investigator assessment



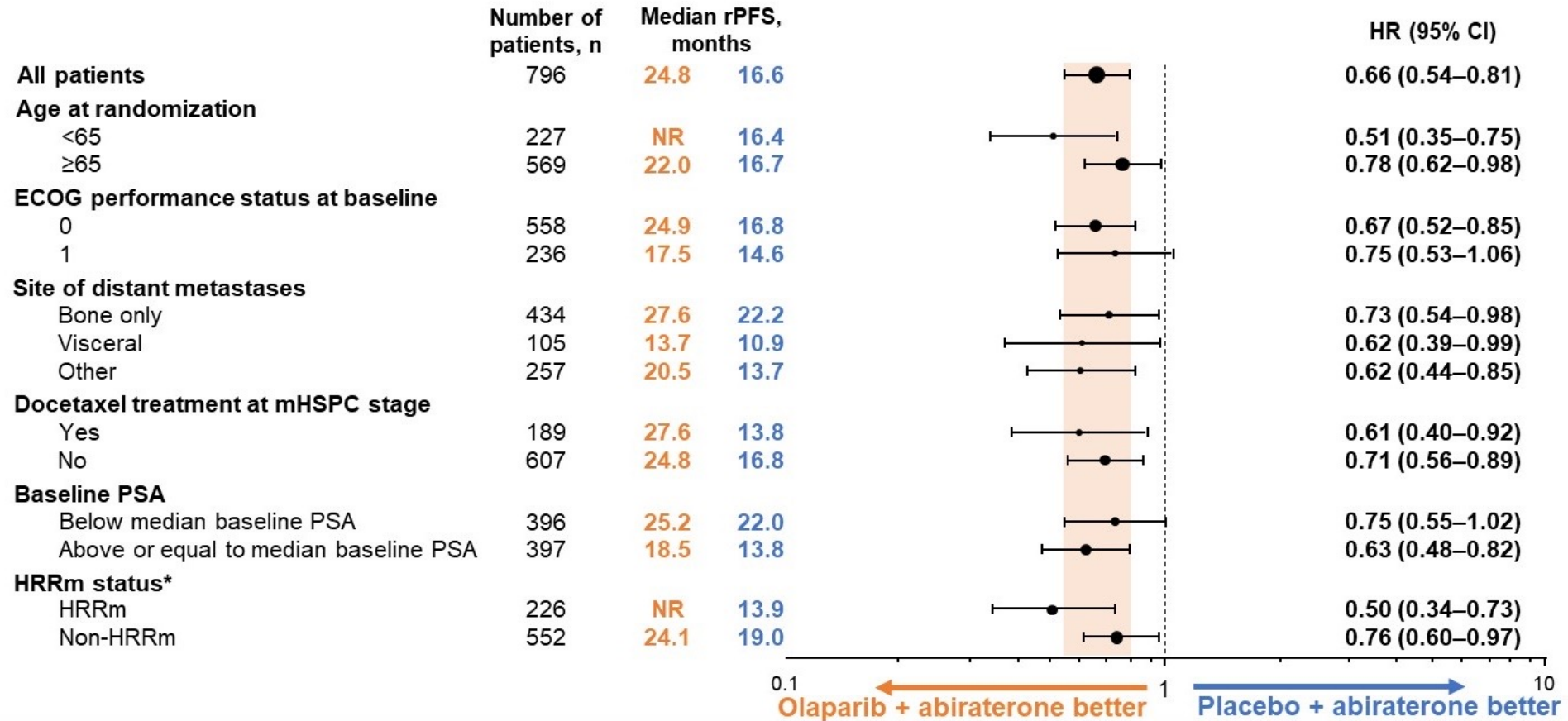
### rPFS by blinded independent central review^



- 34% risk reduction for progression or death with olaparib + abiraterone (HR 0.66; 95% CI 0.54–0.81;  $P < 0.0001$ )

# PROpel

## rPFS subgroup analysis

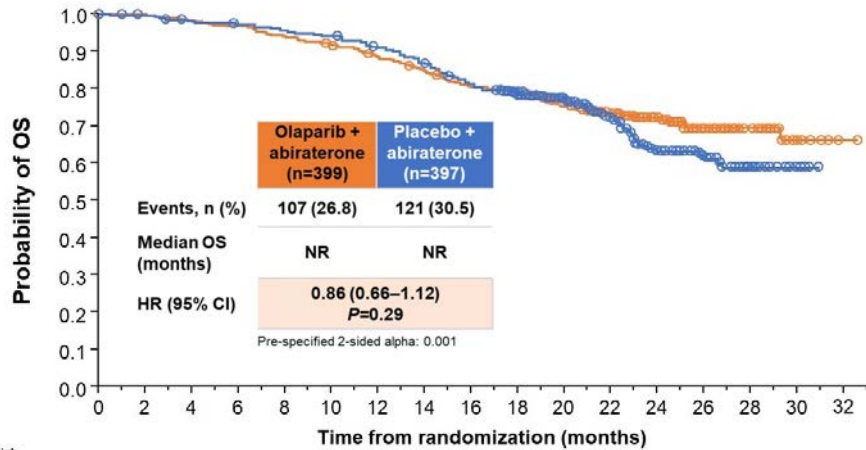


- rPFS benefit observed across all pre-specified subgroups

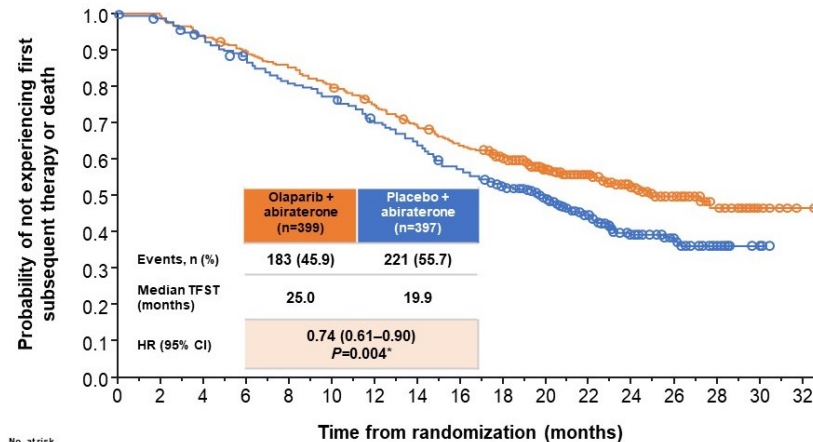
# PROpel

## Key secondary endpoints

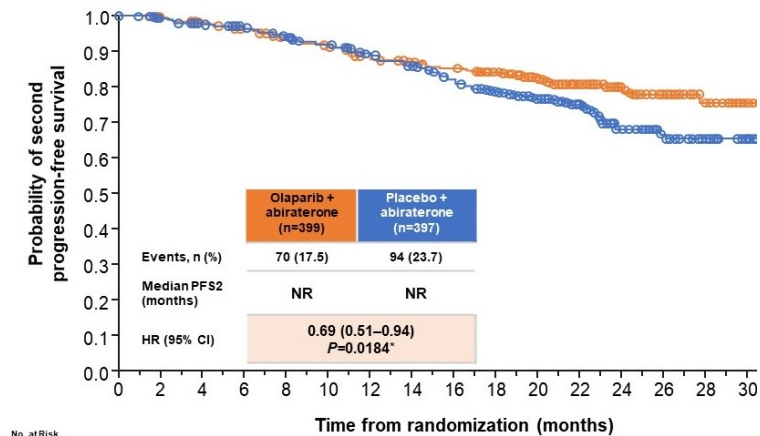
### Overall survival



### Time to first subsequent therapy or death (TFST)



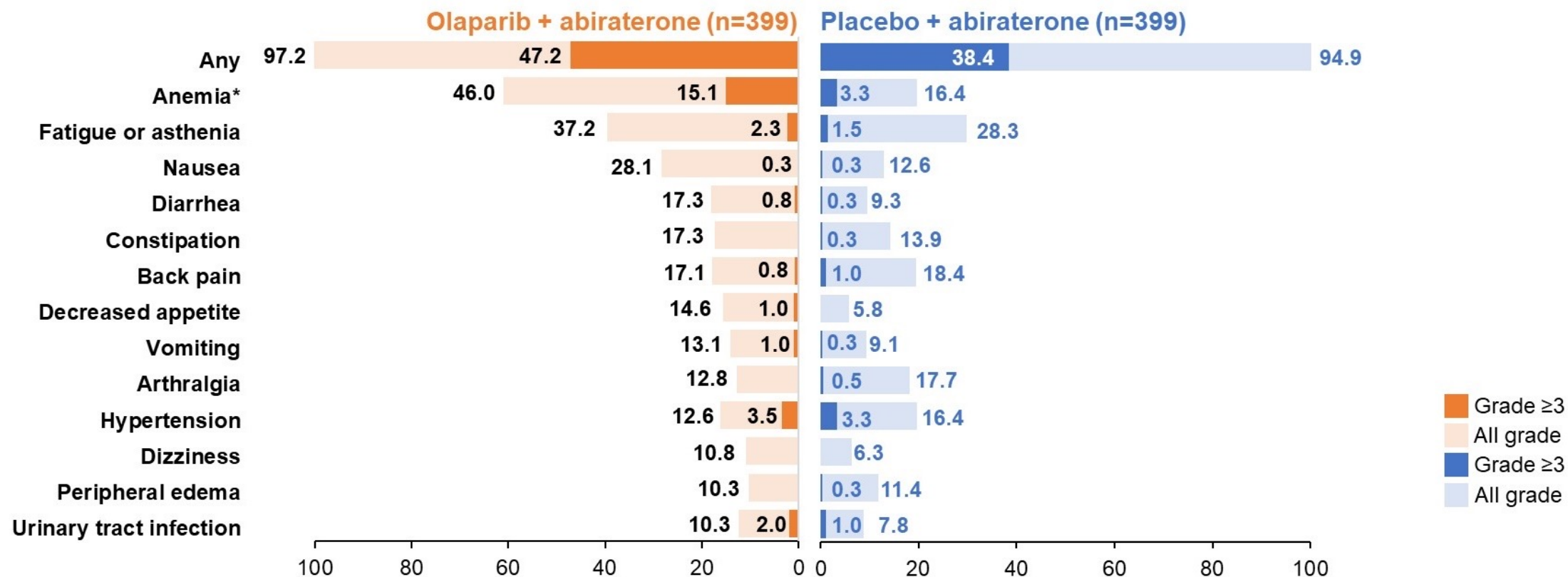
### Time to second progression or death (PFS2)



- OS data immature, but trend towards improved OS with olaparib + abiraterone
- TFST (HR 0.74; 95% CI 0.61–0.90) and PFS2 (HR 0.69; 95% CI 0.51–0.94) supportive of long-term benefits

# PROpel

## Safety data



- Safety and tolerability profile consistent with the known safety profiles of individual drugs
  - The most common grade ≥3 AE was anemia (15.1% vs 3.3%)

\*Anemia category includes anemia, decreased hemoglobin level, decreased red-cell count, decreased hematocrit level, erythropenia, macrocytic anemia, normochromic anemia, normochromic normocytic anemia, and normocytic anemia.

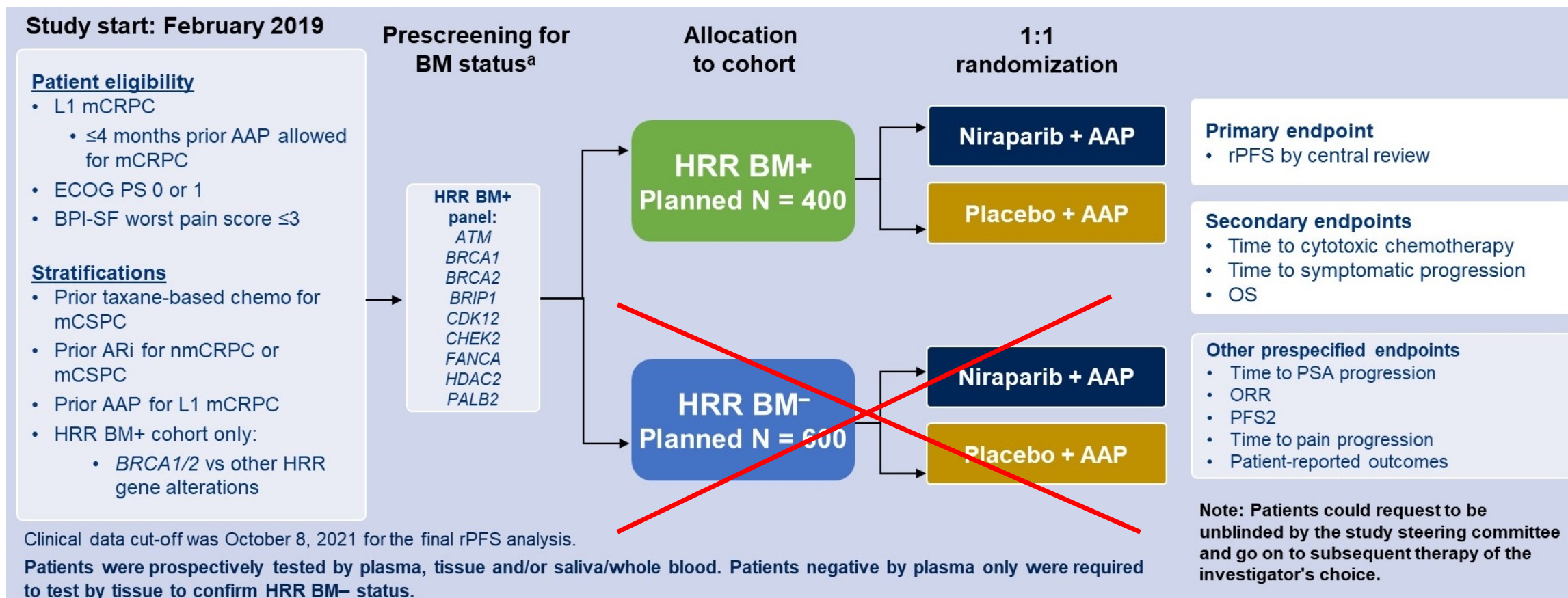
AE, adverse event; CTCAE, Common Terminology Criteria for Adverse Events v4.03.

Saad F, et al. Oral presentation at the 2022 ASCO GU Symposium; Feb 17, 2022; Abstract #11

Courtesy of Fred Saad, MD

# MAGNITUDE

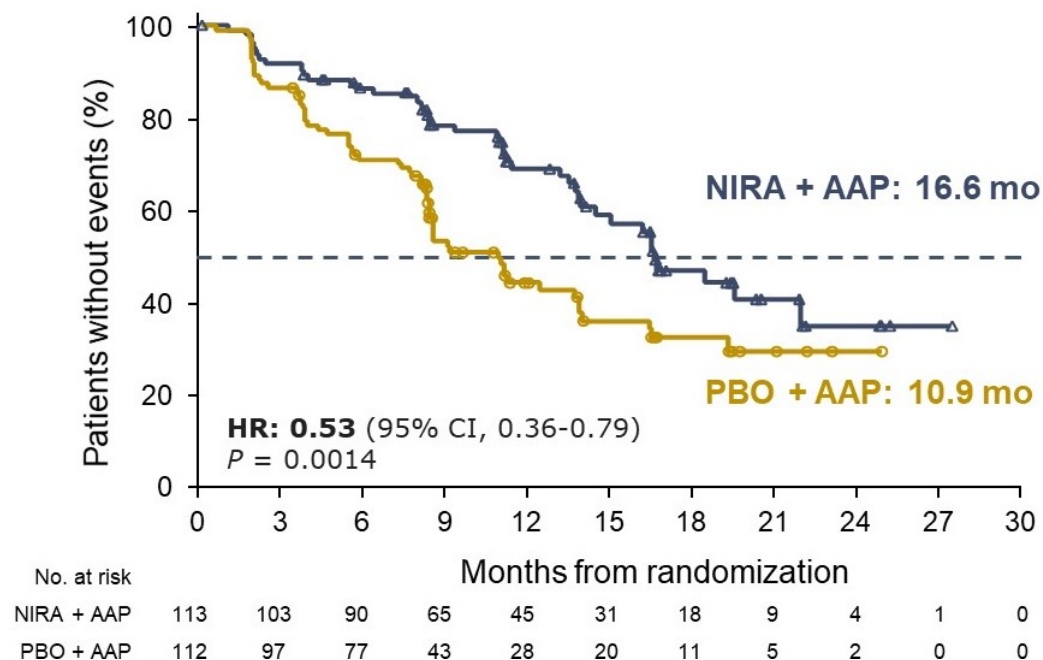
## Randomized, double-blind, placebo-controlled Phase III trial



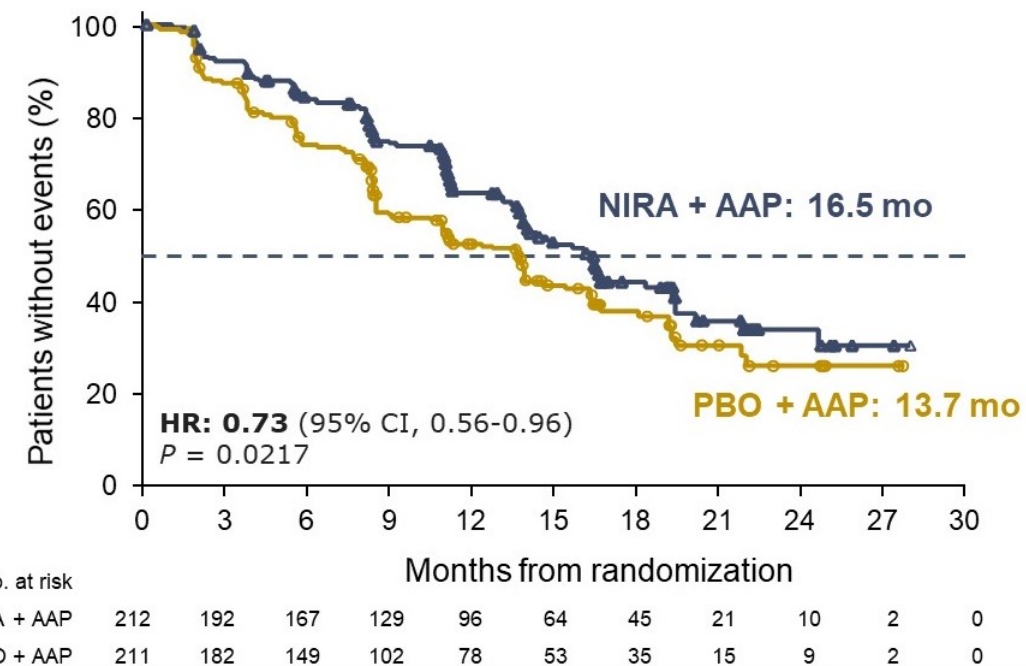
# MAGNITUDE

## Primary endpoint: rPFS by central review

### BRCA1/2-mutated



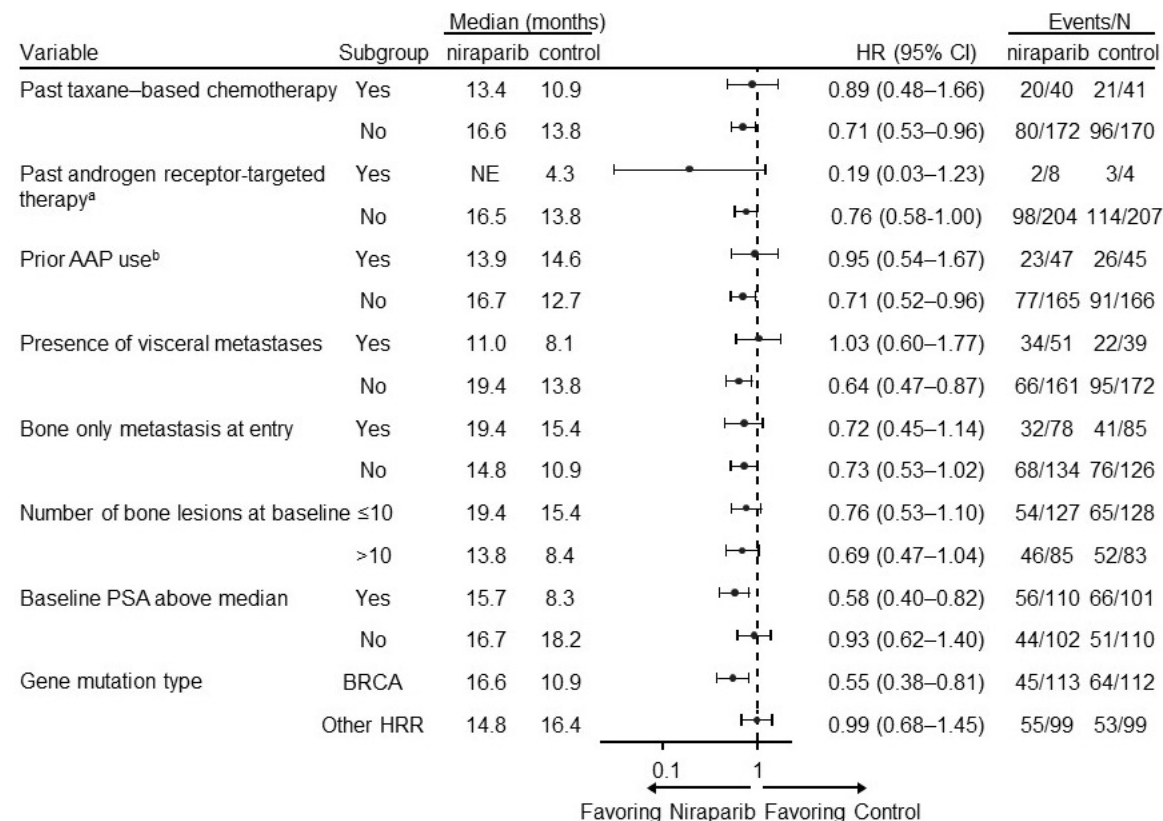
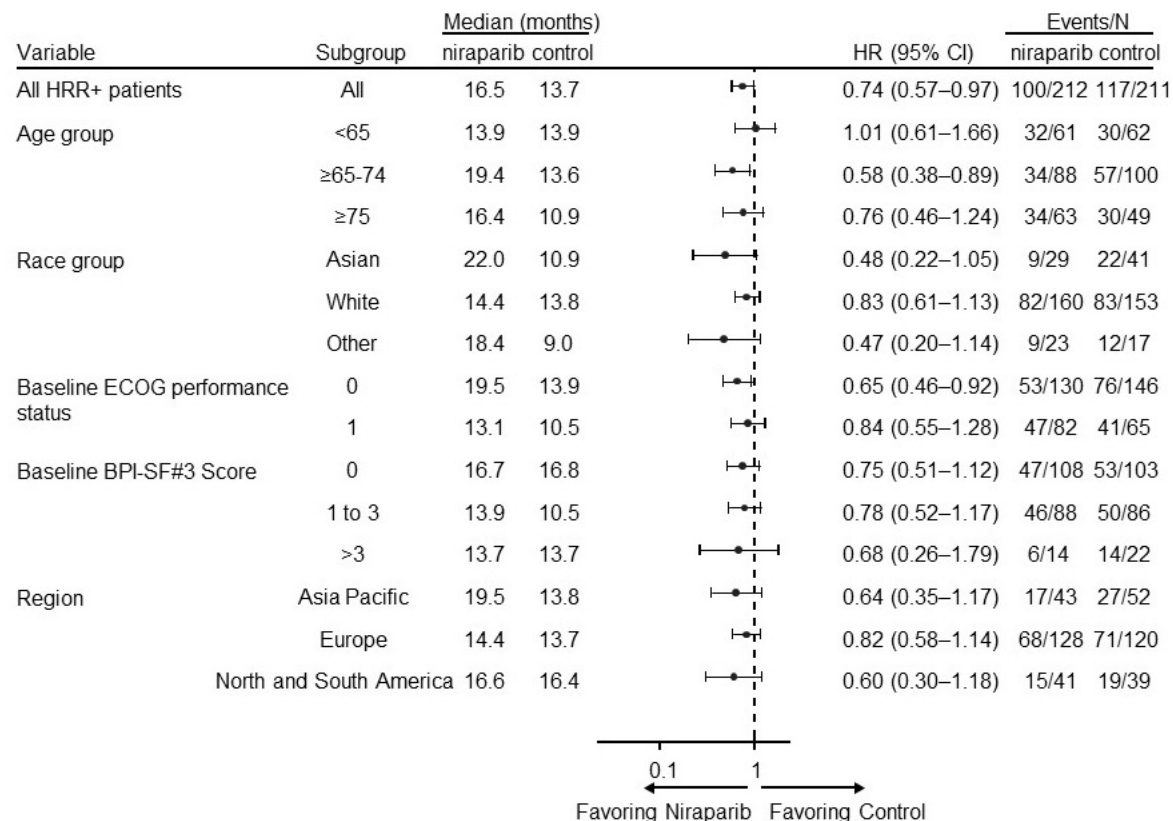
### All HRR BM+



- 47% improvement in rPFS in patients with *BRCA1/2* alterations (HR 0.53; 95% CI 0.36–0.79;  $P=0.0014$ )
  - 27% improvement in rPFS across all HRR BM+ patients (HR 0.73; 95% CI 0.56–0.96;  $P=0.0217$ )

# MAGNITUDE

## rPFS subgroup analysis: All HRR BM+



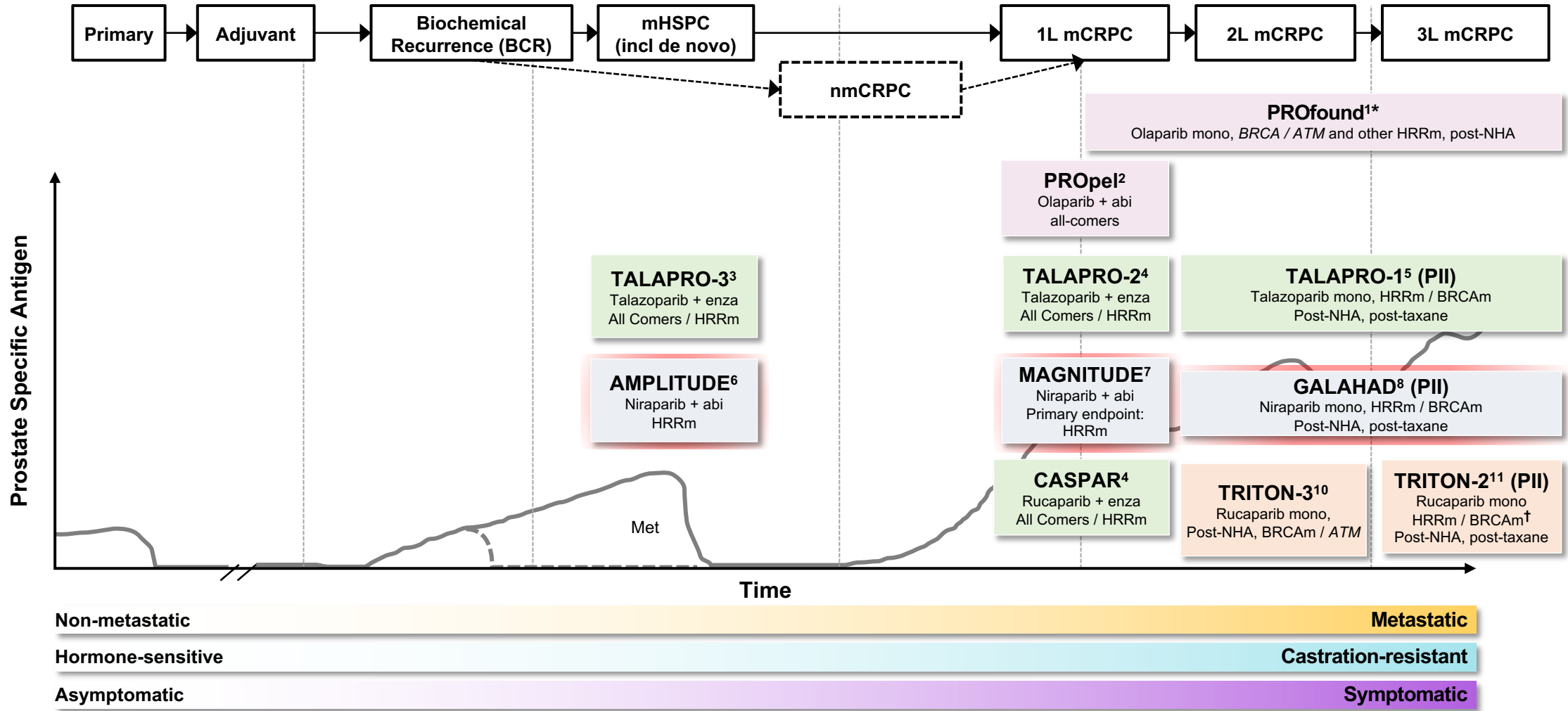
# MAGNITUDE

## Safety data: HRR BM+

Treatment-emergent adverse events occurring at >20% in the NIRA arm or otherwise of clinical interest, n (%)		NIRA + AAP, n = 212		PBO + AAP, n = 211	
		All grades	Grade ≥3	All grades	Grade ≥3
Hematologic	Anemia	98 (46.2)	63 (29.7)	43 (20.4)	16 (7.6)
	Thrombocytopenia	45 (21.2)	14 (6.6)	18 (8.5)	5 (2.4)
	Neutropenia	29 (13.7)	14 (6.6)	12 (5.7)	3 (1.4)
	Acute myeloid leukemia/ Myelodysplastic syndrome	0	0	1 (0.5)	1 (0.5)
Cardiovascular	Hypertension	67 (31.6)	33 (15.6)	47 (22.3)	30 (14.2)
	Arrhythmia	27 (12.7)	6 (2.8) <sup>a</sup>	12 (5.7)	3 (1.4)
	Cardiac failure	4 (1.9)	3 (1.4) <sup>a</sup>	4 (1.9)	1 (0.5)
	Ischemic heart disease	4 (1.9)	4 (1.9)	8 (3.8)	6 (2.8) <sup>b</sup>
General disorders	Fatigue	56 (26.4)	7 (3.3)	35 (16.6)	9 (4.3)
Gastrointestinal	Constipation	65 (30.7)	–	29 (13.7)	–
	Nausea	50 (23.6)	1 (0.5)	29 (13.7)	0
Hepatotoxicity		25 (11.8)	4 (1.9)	26 (12.3)	10 (4.7)
Cerebrovascular disorders		6 (2.8)	2 (0.9)	2 (0.9)	1 (0.5) <sup>a</sup>

Courtesy of Fred Saad, MD

# Ongoing trials investigating PARPi in advanced PC



Courtesy of Fred Saad, MD

# Case Presentation – Dr Saad: 61-year-old patient

- Presented with moderate LUTS
- No relevant past medical history
- PSA 132 with suspicious T3 disease on DRE
- Biopsy reveals 9/12 cores with Gleason 4 + 4 adenocarcinoma
- Bone scan:
  - Multiple metastases in the hip, lumbar spine, and 8<sup>th</sup> left rib
- Abdominal/thoracic CT scan:
  - Suspicious retroperitoneal lymph nodes between and lung metastases

# Case Presentation – Dr Saad: 61-year-old patient (continued)

- Patient received ADT + 6 cycles of docetaxel
- PSA nadir of 0.9 after 12 months
- 6 months later: PSA rises to 1.6
- 6 months later: PSA 3.4
- Slight discomfort lumbar spine
- Imaging reveals progression of lymph nodes, stable otherwise

# Case Presentation – Dr Saad: 61-year-old patient (continued)

- Began PROpel study of abiraterone +/- olaparib in February 2019
- Well tolerated except for slight fatigue and decline in hemoglobin from 13.3 to 10.5 after 3 months
- Rise in Hb after 8 months to 12.5 and remains stable
- PSA < 0.02 after 6 months
- Imaging: CR of all measurable lesions and no change on bone scan
- Continues to be seen monthly and remains in complete response

# Case Presentation – Dr Saad: 75-year-old patient

- History of well controlled hypertension
- Known family history of breast and ovarian cancer
- Patient known to be germline BRCA2 carrier
- Patient found to have metastatic prostate cancer at diagnosis
- Became mCRPC 2 years after start of ADT
- Started on enzalutamide 4 years ago
- PSA declines from 16 to 6

# Case Presentation – Dr Saad: 75-year-old patient (continued)

- PSA rises to 10 and radiographic progression 15 months later
  - Bone scan: metastases hip and lumbar spine
  - Abdominal/thoracic CT scan: multiple retroperitoneal lymph nodes up to 3 cm
- Patient started on olaparib
  - Well tolerated with minor fatigue
  - PSA declines to 0.2
  - Imaging: lymph nodes all below 1 cm, reduced intensity on bone scan
- Patient remained without progression for 18 months

# Case Presentation – Dr Saad: 75-year-old patient (continued)

- PSA began to rise and progression of metastases on imaging with eventual progression of pain
- Patient went on to receive docetaxel
- Some relief of pain and PSA reduction after 4 cycles
- Progression of PSA, imaging and symptoms after 8 cycles
- Patient allowed early access to  $^{177}\text{Lu}$ -PSMA-617
- Presently stable after 2 cycles and tolerating well

**Consider how prepared you feel right now to administer a PARP inhibitor to a patient with mCRPC compared to how prepared you felt before this webinar. How would you rate your current preparedness on a scale of 1 to 10, with 1 being much less prepared now and 10 being much more prepared now?**

1. 1 – much less prepared

2. 2

3. 3

4. 4

5. 5 – status quo

6. 6

7. 7

8. 8

9. 9

10. 10 – much more prepared

# Backup Slides

# Case Presentation – Dr Saad: 74-year-old patient

- Long history of prostate cancer
- Diagnosed with metastatic disease 5 years prior to referral
- Received ADT at diagnosis, then received treatment for mCRPC
  - Abiraterone
  - Docetaxel
  - Cabazitaxel
- Referred in desperation for clinical trial
  - ECOG PS 2 with chest tubes for pleural effusion
  - Multiple bone, lymph node and lung metastases
  - PSA 4,222

# Case Presentation – Dr Saad: 74-year-old patient (continued)

- Patient eligible for GALAHAD trial IF found to have HRRm
- Patient tested and was positive for BRCA2
- Started open label niraparib monotherapy
- After 1 month patient started to feel better and breathing improved
- After 4 months pleural effusion had stopped and chest tubes could be removed
- PSA declined to 1,230, patient resumed all his previous activities and continued to drive 3 hours every month for his visits
- Remained responsive for 22 months even with PSA rising up to 5,100

# Case Presentation – Dr Saad: 74-year-old patient (continued)

- Referred for clinical trial following progressive mCRPC
- Had received ADT for de novo metastatic prostate cancer diagnosed 3 years prior
- After rapid progression to mCRPC had received docetaxel followed by enzalutamide
- Rapid progression of disease on enzalutamide
- Patient ECOG PS 0-1 with pain requiring narcotics, otherwise active
- Patient accepted open label phase 1 study of niraparib + abiraterone

# Case Presentation – Dr Saad: 74-year-old patient (continued)

- Full dose niraparib and abiraterone started on study
- Patient had some relief of pain but developed grade 3 anemia and thrombocytopenia
- Niraparib held, patient transfused
  - Anemia and thrombocytopenia returned to grade 1
- Resumed niraparib at reduced dose of 200 mg BID
- Tolerated drug but again experienced grade 3 thrombocytopenia
- Treatment stopped but disease progressed shortly after
- Patient started on cabazitaxel with little success

# ***Meet The Professor***

## **Optimizing the Management of Chronic Myeloid Leukemia**

**Tuesday, June 28, 2022  
5:00 PM – 6:00 PM ET**

**Faculty**

**Jorge E Cortes, MD**

**Moderator**

**Neil Love, MD**

***Thank you for joining us!***

***CME and MOC credit information will be emailed  
to each participant within 5 business days.***