

Clinical Vignette: PROSTATE CANCER

Claudia Agra Martínez

Resident physician

Hospital Universitario de Navarra

47-years-old male; black race

MEDICAL HISTORY

- No drug allergies.
- Cardiovascular risk factors: hypertension, hypercholesterolaemia.
- Hyperuricaemia.
- Functional left monorenal (secondary to right renal artery stenosis) with chronic kidney disease V A3. On regular haemodialysis programme. On the waiting list for a kidney transplant.
- Proximal phalangeal fracture of the 4th and 5th toes.
- Gonalgia due to osteoarthritis and left meniscal disease with secondary falls.

SURGERIES

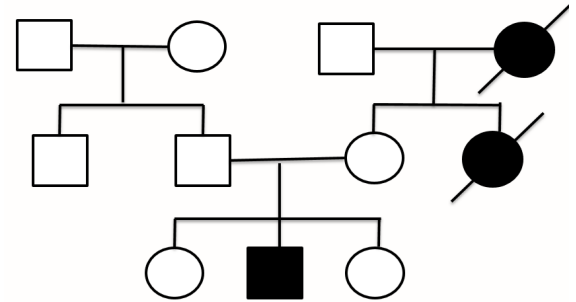
- Frenulum lengthening.
- Peritonsillar abscess drainage.

Toxics:

- Former harmful alcohol consumer since 2023.
- Non-smoker.

Family history of cancer:

- Maternal aunt died of cancer (origin unknown).
- Maternal grandmother had breast cancer at age 70.



ONCOLOGICAL HISTORY



PSA 30,08 ng/ml

Pathological rectal examination cT3

MAY 2024

ONCOLOGICAL HISTORY

PSA 30,08 ng/ml
Pathological rectal examination cT3



JUNE 2024

MAY 2024

Ultrasound: prostate measuring approximately 27 cc, heterogeneous and poorly defined.

ONCOLOGICAL HISTORY

PSA 30,08 ng/ml
Pathological rectal examination cT3



BIOPSY: Gleason 9 acinar
prostate adenocarcinoma



JUNE 2024

MAY 2024

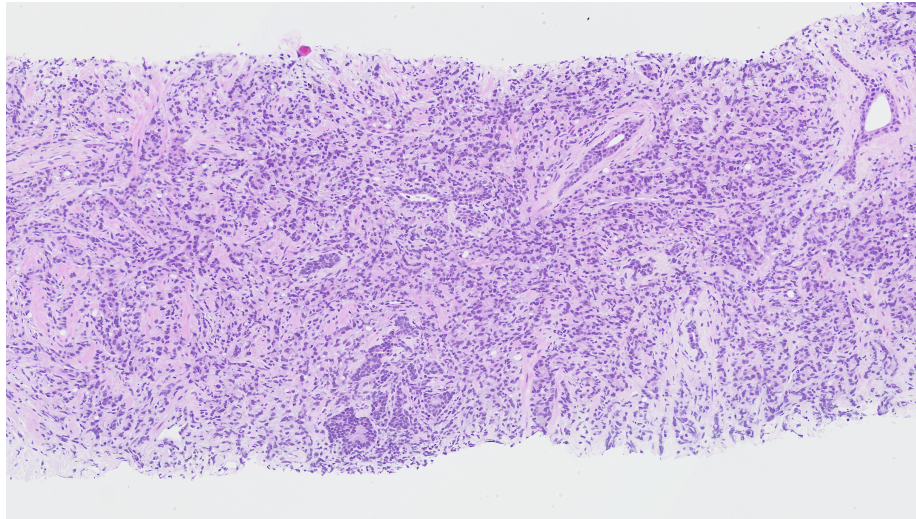
JULY 2024

Ultrasound: prostate measuring
approximately 27 cc,
heterogeneous and poorly
defined.

BIOPSY (15/07/2024)

(A) (RIGHT LOBE) - ACINAR ADENOCARCINOMA OF THE PROSTATE, Gleason grade 5+4=score 9 (prognosis grade group 5), affecting 6 of the cylinders submitted (6/6) (approx. 90% of prostate tissue affected by tumour) with intraprostatic perineural infiltration and extraprostatic extension in three cylinders.

(B) (LEFT LOBE) - ACINAR PROSTATE ADENOCARCINOMA, Gleason grade 4+5=score 9 (prognosis grade group 5), affecting 4 of the 4 cylinders submitted (4/4) (approx. 90% of prostate tissue affected by tumour) with intraprostatic perineural infiltration and extraprostatic extension in one cylinder.



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Tipo de muestra: ADN de sangre periférica

Número de muestra: ADN 24/3575

Prestación: ONCOGENETICA: CANCER HEREDITARIO - Sangre periférica - Cáncer de próstata indicación terapéutica

Indicación: Cancer de próstata est IV. Estudio con intención terapéutica.

Estudio molecular de: genes de predisposición a cancer de mama/ovario hereditario

Gen analizado: BRCA1, BRCA2, ATM, MLH1, MSH2, MSH6, HOXB13, CHEK2, NBN, PALB2, RAD51D, TP53

Técnica: Secuenciación masiva (NGS): panel TruSight Hereditary Cancer (Illumina) y análisis de variantes con las herramientas VariantStudio 3.0 e IGV (Integrative Genomics Viewer).

RESULTADO: Se ha detectado la variante patológica **BRCA2 mutado.**

ONCOLOGICAL HISTORY

PSA 30,08 ng/ml
Pathological rectal examination



BIOPSY: Gleason 9 acinar
prostate adenocarcinoma



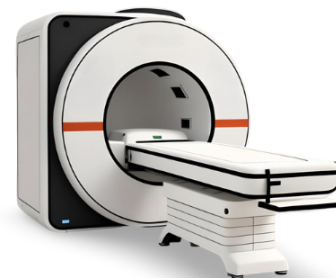
JUNE 2024

MAY 2024

Ultrasound: prostate measuring
approximately 27 cc,
heterogeneous and poorly
defined.

JULY 2024

GGO
TC
PET



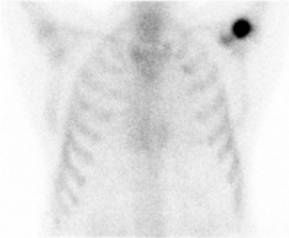
Fase metabólica



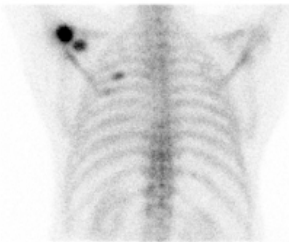
D anterior I



I posterior D



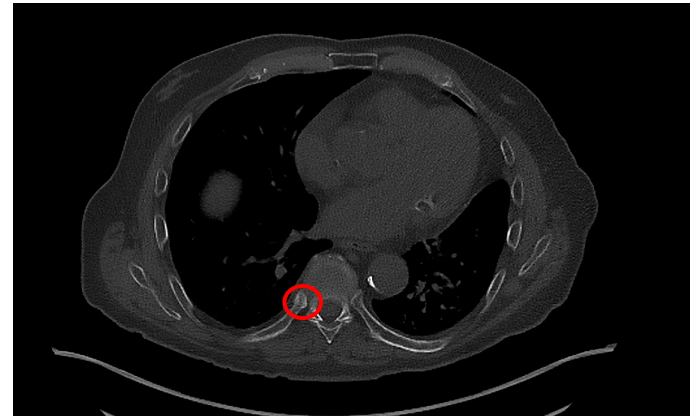
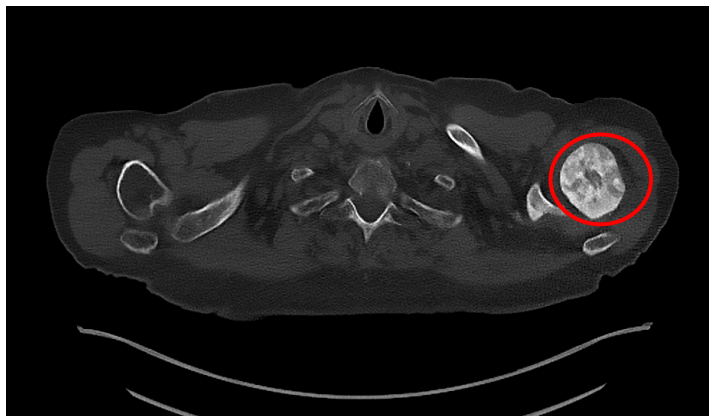
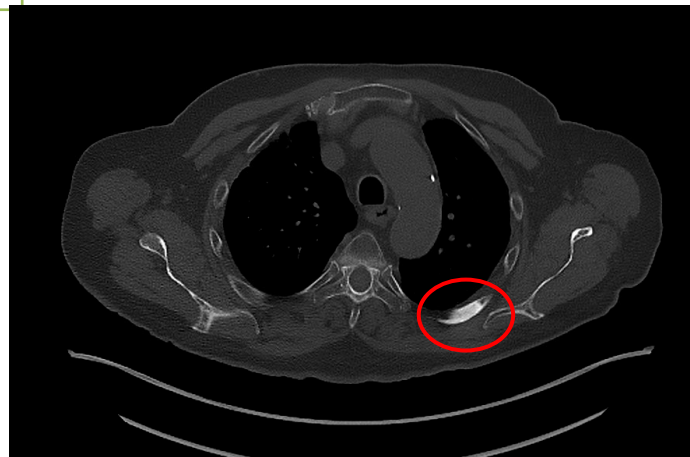
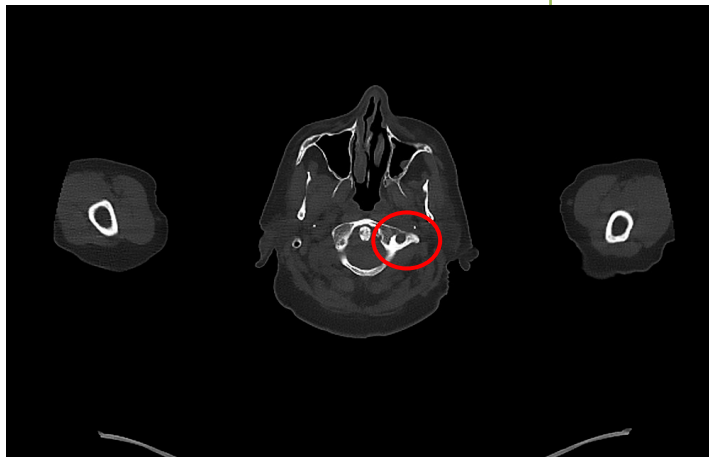
D anterior I



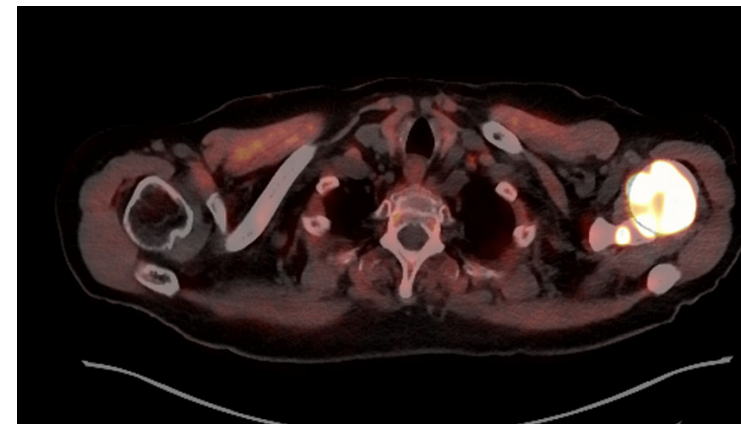
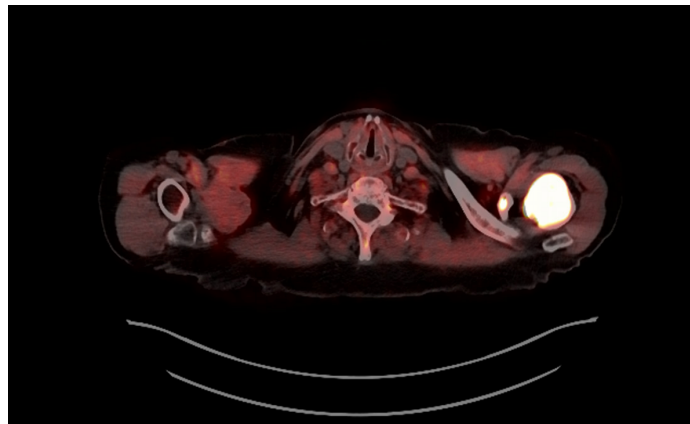
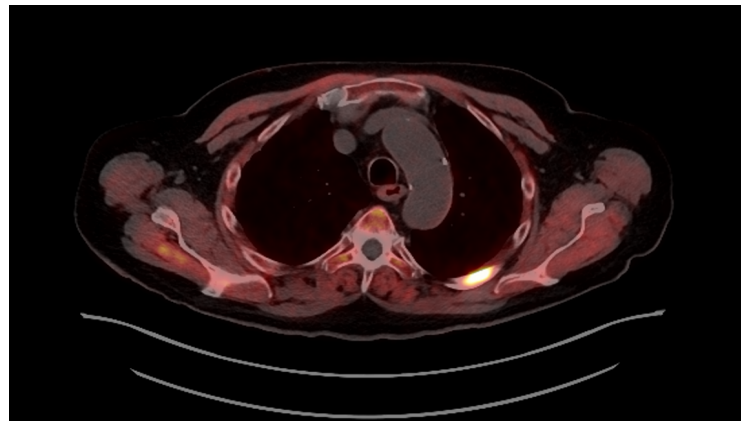
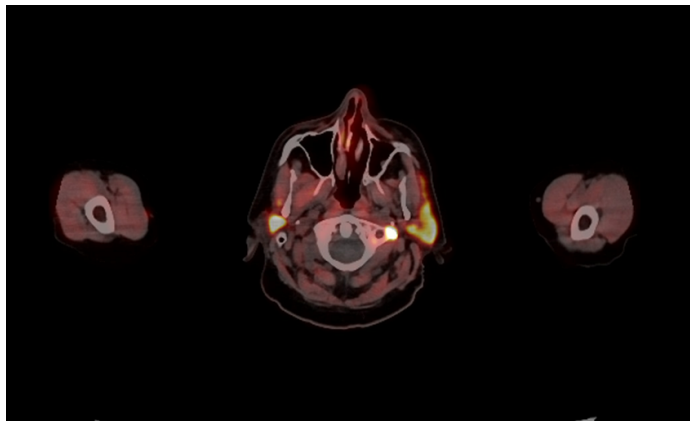
I posterior D

GGO: multiple focal metastatic bone disease: humeral head, left scapula, posterior arch of left 5th rib and probably posterior arch of left 6th rib

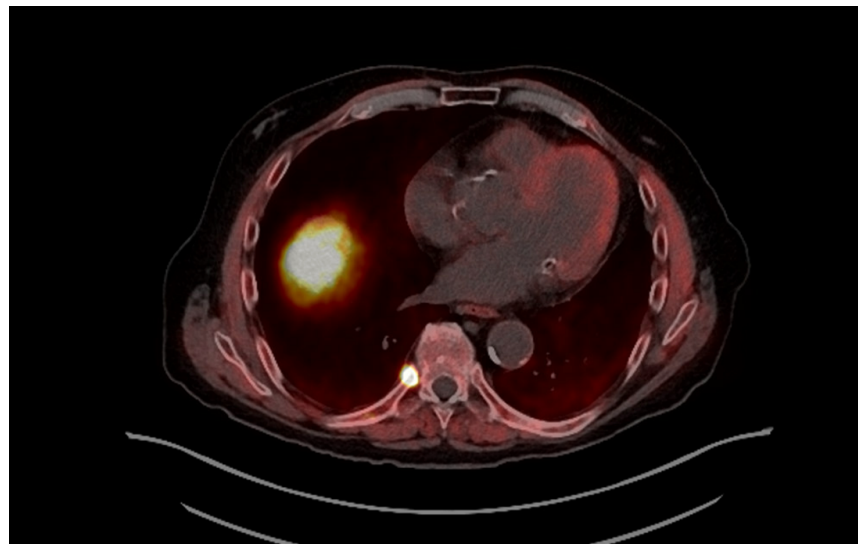
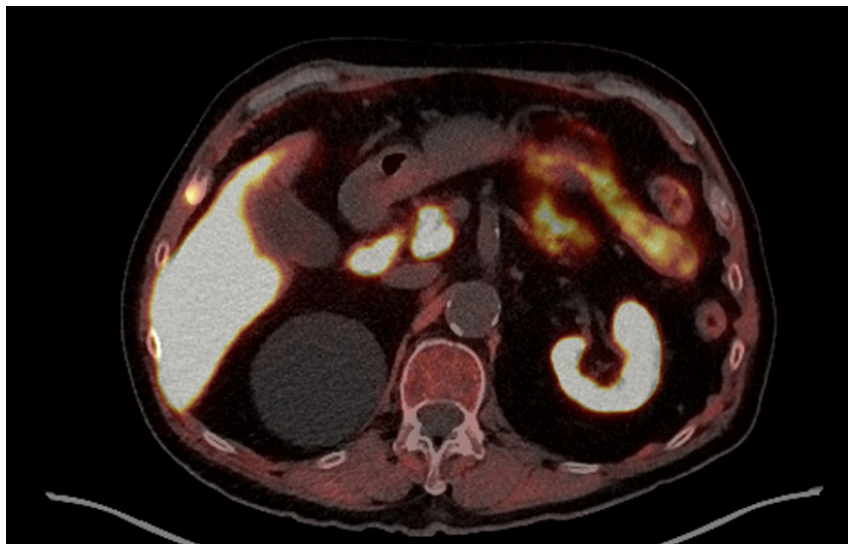
CT JULY 2024



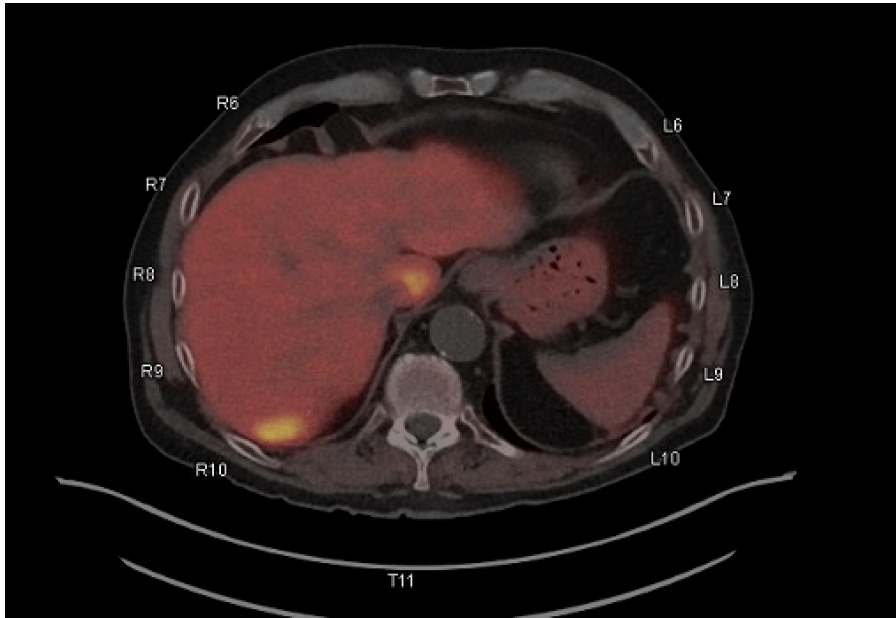
PET JULY 2024



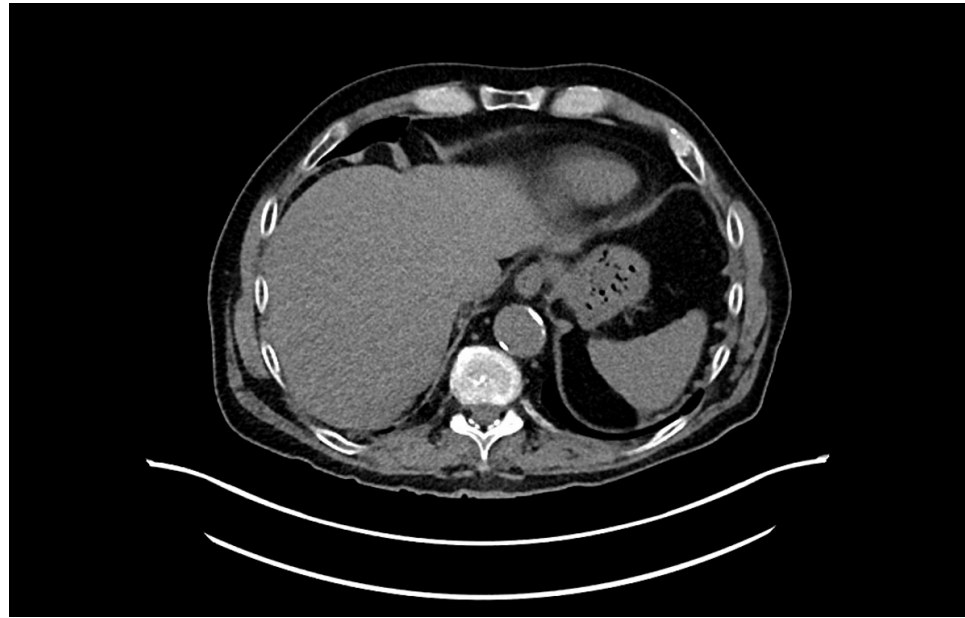
PET JULY 2024



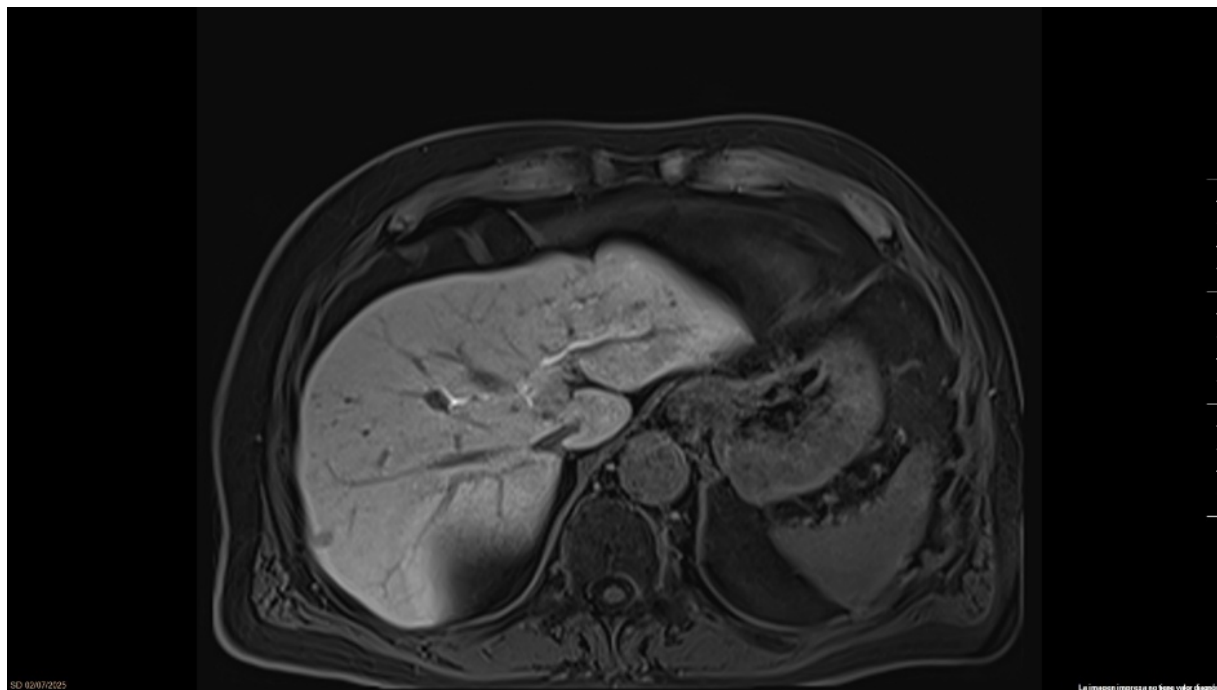
Cholin-PET: liver damage in segments I and VII.



CT: no visible liver damage.



MRI: suspected metastasis in hepatic segment VII.



Conventional or next-generation imaging tests?

TC y GGO

VS.

PET

mCSPC low volume

mCSPC high volume

De novo high-volume, high-risk, castration-sensitive metastatic prostate cancer

CHARTED CRITERIA

- Visceral metastases
- ≥ 4 bone lesions, at least one of which is outside the pelvis and vertebrae

LATITUDE

- Gleason ≥ 8
- ≥ 3 bone metastases
- Visceral metastases

De novo high-volume, high-risk, castration-sensitive metastatic prostate cancer

DUAL therapy



TRIPLE therapy

ORIGINAL ARTICLE

Chemohormonal Therapy in Metastatic Hormone-Sensitive Prostate Cancer

Christopher J. Sweeney, M.B., B.S., Yu-Hui Chen, M.S., M.P.H., Michael Carducci, M.D., Glenn Liu, M.D., David F. Jarrard, M.D., Mario Eisenberger, M.D., Yu-Ning Wong, M.D., M.S.C.E., Noah Hahn, M.D., Manish Kohli, M.D., Matthew M. Cooney, M.D., Robert Dreicer, M.D., Nicholas J. Vogelzang, M.D., Joel Picus, M.D., Daniel Shevrin, M.D., Maha Hussain, M.B., Ch.B., Jorge A. Garcia, M.D., and Robert S. DiPaola, M.D.

@Darolutamide in Combination With Androgen-Deprivation Therapy in Patients With Metastatic Hormone-Sensitive Prostate Cancer From the Phase III ARANOTE Trial

Fred Saad, MD¹ , Egile Vijters, MD² , Neal Shore, MD, FACS³ , David Olmos, MD, PhD⁴ , Nianzeng Xing, MD⁵ , Andrea Juliana Pereira de Santana Gomes, MD⁶ , Augusto Cesar de Andrade Mota, MD, PhD⁷ , Pamela Salman, MD, PhD⁸ , Mindaugas Jievaltas, MD, PhD⁹, Albertas Ulys, MD, PhD¹⁰, Maris Jakubovskis, MD¹¹, Evgeny Kopytsov, MD, PhD¹², Weiqing Han, MD, PhD¹³, Liina Nevalaita, PhD¹⁴, Isabella Testa, MD¹⁵, Marie-Aude Le Berre, MSc¹⁶, Iris Kuss, MD¹⁷, and Kunhi Parambath Hareesh, MD¹⁸

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Apalutamide for Metastatic, Castration-Sensitive Prostate Cancer

Kim N. Chi, M.D., Neeraj Agarwal, M.D., Anders Bjartell, M.D., Byung Ha Chung, M.D., Andrea J. Pereira de Santana Gomes, M.D., Robert Given, M.D., Alvaro Juárez Soto, M.D., Axel S. Merseburger, M.D., Mustafa Özgürçü, M.D., Hirotsugu Uemura, M.D., Dingwei Ye, M.D., Kris Deprince, M.D., Valid Naini, Pharm.D., Jinbo Lu, Ph.D., Silvia Cheng, M.D., Margaret K. Yu, M.D., Ke Zhang, Ph.D., Julie S. Larsen, Pharm.D., Sharon McCarthy, B.Pharm., and Simon Chowdhury, M.D.

ORIGINAL ARTICLE

Abiraterone plus Prednisone in Metastatic, Castration-Sensitive Prostate Cancer

Karim Fizazi, M.D., Ph.D., NamPhuong Tran, M.D., Luis Fein, M.D., Nobuaki Matsubara, M.D., Alfredo Rodríguez-Antolín, M.D., Ph.D., Boris Y. Alekseev, M.D., Mustafa Özgürçü, M.D., Dingwei Ye, M.D., Susan Feyerabend, M.D., Andrew Protheroe, M.D., Ph.D., Peter De Porre, M.D., Thian Kheoh, Ph.D., Youn C. Park, Ph.D., Mary B. Todd, D.O., and Kim N. Chi, M.D., for the LATITUDE Investigators*

ORIGINAL ARTICLE

Enzalutamide with Standard First-Line Therapy in Metastatic Prostate Cancer

I.D. Davis, A.J. Martin, M.R. Stockler, S. Begbie, K.N. Chi, S. Chowdhury, X. Coskimas, M. Frydenberg, W.E. Hague, L.C. Horvath, A.M. Joshua, N.J. Lawrence, G. Max, J. McCaffrey, R. McDermott, M. McJannett, S.A. North, F. Parnis, W. Parulekar, D.W. Pook, M.N. Reaume, S.K. Sandhu, A. Tan, T.H. Tan, A. Thomson, E. Tu, F. Vera-Badillo, S.G. Williams, S. Yip, A.Y. Zhang, R.R. Ziellinski, and C.J. Sweeney, for the ENZAMET Trial Investigators and the Australian and New Zealand Urogenital and Prostate Cancer Trials Group*

Abiraterone plus prednisone added to androgen deprivation therapy and docetaxel in de novo metastatic castration-sensitive prostate cancer (PEACE-1): a multicentre, open-label, randomised, phase 3 study with a 2 × 2 factorial design

Karim Fizazi, Stéphanie Foulon, Joan Carles, Guilhem Rousaud, Ray McDermott, Aude Fléchon, Bertrand Tombal, Stéphane Supiot, Dominik Berthold, Philippe Ranchin, Gabriel Kascas, Gwenaelle Gravis, Fabio Calabro, Jean-François Berdah, Ali Hachimi, Marlon Silva, Antoine Thiery-Vuillemin, Igor Latorzeff, Loïc Mourey, Brigitte Laquerre, Sophie Abadie-Lacourtoisie, Etienne Martin, Claude El Kouri, Anne Escande, Alvar Rosello, Nicolas Magne, Friederike Schlurmann, Frank Prius, Marie-Eve Chand-Fouche, Salvador Villá Freixa, Muhammad Jamaluddin, Isabelle Rieger, Alberto Bossi, on behalf of the PEACE-1 investigators*

Randomized Controlled Trial > J Clin Oncol. 2023 Jul 10;41(20):3595-3607.

doi: 10.1200/JCO.23.00041. Epub 2023 Feb 16.

Darolutamide Plus Androgen-Deprivation Therapy and Docetaxel in Metastatic Hormone-Sensitive Prostate Cancer by Disease Volume and Risk Subgroups in the Phase III ARASENS Trial

Maha Hussain¹, Bertrand Tombal², Fred Saad³, Karim Fizazi⁴, Cora N Sternberg⁵, E David Crawford⁶, Neal Shore⁷, Evgeny Kopytsov⁸, Arash Rezaeadeh Kalebasty⁹, Martin Bögemann¹⁰, Dingwei Ye¹¹, Felipe Cruz¹², Hiroyoshi Suzuki¹³, Shivani Kapur¹⁴, Shankar Srinivasan¹⁵, Frank Verhulsen¹⁶, Iris Kuss¹⁷, Heikki Joensuu¹⁸, Matthew R Smith¹⁹

De novo high-volume, high-risk, castration-sensitive metastatic prostate cancer

ORIGINAL ARTICLE

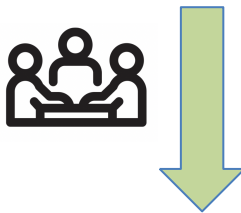
Abiraterone for Prostate Cancer Not Previously Treated with Hormone Therapy

N.D. James, J.S. de Bono, M.R. Spears, N.W. Clarke, M.D. Mason, D.P. Dearnaley, A.W.S. Ritchie, C.L. Amos, C. Gilson, R.J. Jones, D. Matheson, R. Millman, G. Attard, S. Chowdhury, W.R. Cross, S. Gillissen, C.C. Parker, J.M. Russell, D.R. Berthold, C. Brawley, F. Adab, S. Aung, A.J. Birtle, J. Bowen, S. Brock, P. Chakraborti, C. Ferguson, J. Gale, E. Gray, M. Hingorani, P.J. Hoskin, J.F. Lester, Z.I. Malik, F. McKinna, N. McPhail, J. Money-Kyrle, J. O'Sullivan, O. Parikh, A. Protheroe, A. Robinson, N.N. Srihari, C. Thomas, J. Wagstaff, J. Wylie, A. Zarkar, M.K.B. Parmar, and M.R. Sydes, for the STAMPEDE Investigators*

Radiotherapy to the primary tumour for newly diagnosed, metastatic prostate cancer (STAMPEDE): a randomised controlled phase 3 trial

Christopher C Parker, Nicholas D James, Christopher D Brawley, Noel W Clarke, Alex P Hoyle, Adnan Ali, Alistair W S Ritchie, Gerhardt Attard, Simon Chowdhury, William Cross, David P Dearnaley, Silke Gillissen, Clare Gilson, Robert J Jones, Ruth E Langley, Zafar I Malik, Malcolm D Mason, David Matheson, Robin Millman, J Martin Russell, George N Thalmann, Claire L Amos, Roberto Alonzi, Amit Bahl, Alison Birtle, Omar Din, Hassan Douls, Chinnamani Eswar, Joanna Gale, Melissa R Gannon, Sai Jonnada, Sara Khalsar, Jason F Lester, Joe M O'Sullivan, Orni A Parikh, Ian D Pedley, Delia M Pudney, Denise J Sheehan, Narayanan Nair Srihari, Anna T H Tran, Mahesh K B Parmar*, Matthew R Sydes*, on behalf of the Systemic Therapy for Advanced or Metastatic Prostate cancer: Evaluation of Drug Efficacy (STAMPEDE) investigators†

TDA + Abiraterone + Docetaxel



+ prostatic RT?

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Prostate Cancer-related Events in Patients with Synchronous Metastatic Hormone-sensitive Prostate Cancer Treated with Androgen Deprivation Therapy with and Without Concurrent Radiation Therapy to the Prostate; Data from the HORRAD Trial

Liselotte M.S. Boevé^{a,h,*}, Maarten C.C.M. Hulshof^c, Paul C.M.S. Verhagen^d, Jos W.R. Twisk^e, Wim P.J. Witjes^f, Peter de Vries^g, R. Jeroen A. van Moorselaar^h, André N. Vis^g, George van Andel^g

^aDepartment of Urology, OLVG, Amsterdam, The Netherlands; ^bAmsterdam UMC, Location VU University Medical Center (VUmc), Amsterdam, The Netherlands; ^cDepartment of Radiotherapy, Amsterdam UMC, Location Academic Medical Center (AMC), Amsterdam, The Netherlands; ^dDepartment of Urology, Erasmus Medical Center, Rotterdam, The Netherlands; ^eDepartment of Epidemiology and Biostatistics, Amsterdam UMC, Location VU University, Amsterdam, The Netherlands; ^fCuraTrial SMO & Research BV, Arnhem, The Netherlands; ^gDepartment of Urology, Zuyderland, Heerlen, The Netherlands

De novo high-volume, high-risk, castration-sensitive metastatic prostate cancer

ORIGINAL ARTICLE

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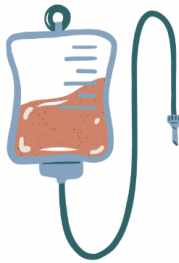
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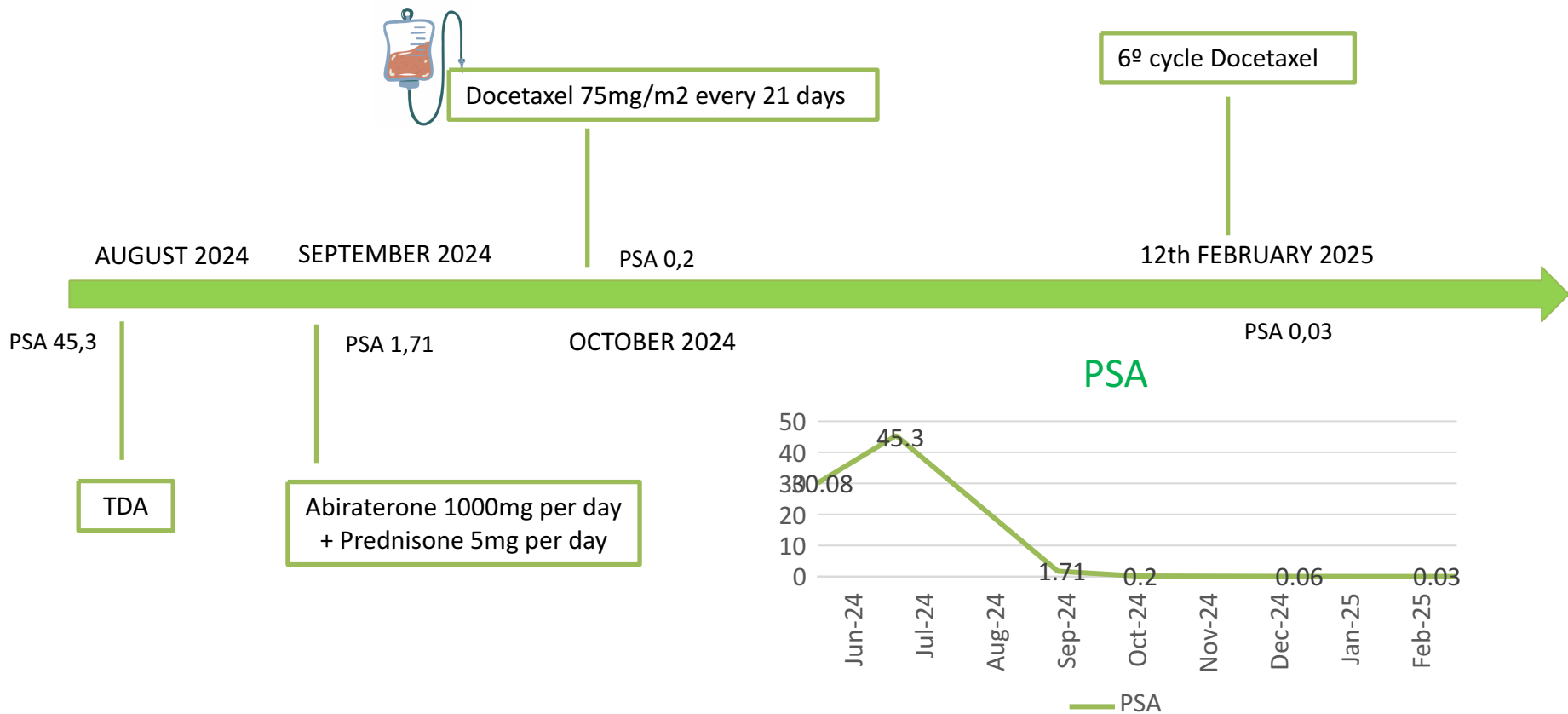
*Department of Urology, OLVG, Amsterdam, The Netherlands; ^bAmsterdam UMC, Location VU University Medical Center (VUmc), Amsterdam, The Netherlands; ^cDepartment of Radiotherapy, Amsterdam UMC, Location Academic Medical Center (AMC), Amsterdam, The Netherlands; ^dDepartment of Urology, Erasmus Medical Center, Rotterdam, The Netherlands; ^eDepartment of Epidemiology and Biostatistics, Amsterdam UMC, Location VU University, Amsterdam, The Netherlands; ^fCuraTrial SMO & Research BV, Arnhem, The Netherlands; ^gDepartment of Urology, Zuyderland, Heerlen, The Netherlands









Is there any interaction between haemodialysis and docetaxel or abiraterone?








- **Docetaxel** is mainly eliminated via the liver, with renal excretion less than 5%. Haemodialysis does not significantly alter the elimination or pharmacokinetics of docetaxel. Docetaxel does not require a dose adjustment.
- Systemic exposure to **abiraterone** after a single oral dose of 1,000 mg did not increase in subjects with chronic renal disease undergoing dialysis. Administration in patients with renal impairment, even severe, does not require a dose reduction.

ONCOLOGICAL HISTORY



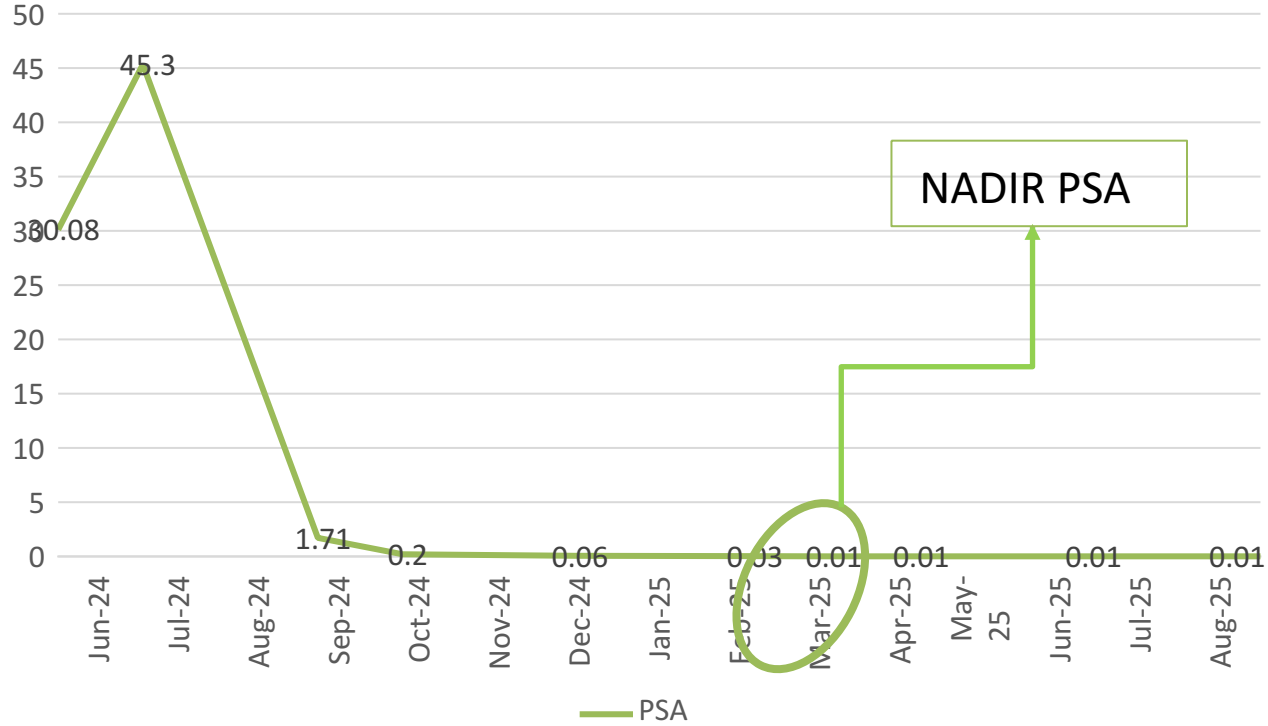
| ADVERSE REACTIONS | YES/NO |
|--|--|
| Hipersensitivity reaction |  |
| Anaemia, neutropenia, thrombocytopenia |  |
| Neurotoxicity |  G1 |
| Diarrhoea |  |
| Anorexia, dysgeusia |  |
| Vomit |  |
| Alopecia |  G2 |
| Arthralgia, myalgia |  |

| ADVERSE REACTIONS | YES/NO |
|---------------------|--|
| High blood pression |  |
| Hypokalaemia |  |
| Oedema |  G1 |
| Hepatotoxicity |  |
| Osteoporosis |  |
| Hot flushes |  |

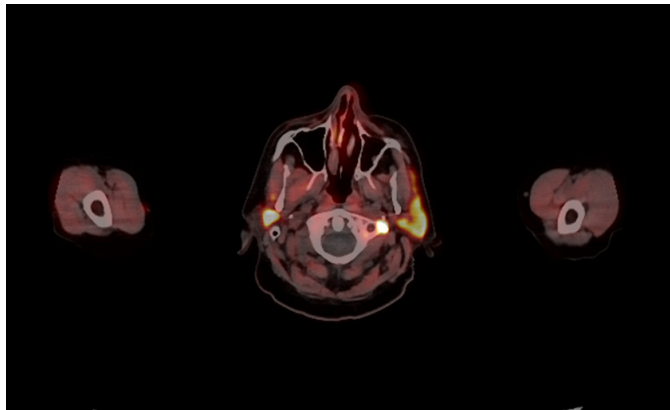
| ADVERSE REACTIONS | YES/NO |
|---------------------|--------|
| High blood pression | ✗ |
| Hypokalaemia | ✗ |
| Oedema | ✓ G1 |
| Hepatotoxicity | ✗ |
| Osteoporosis | ✗ |
| Hot flushes | ✓ |



PSA

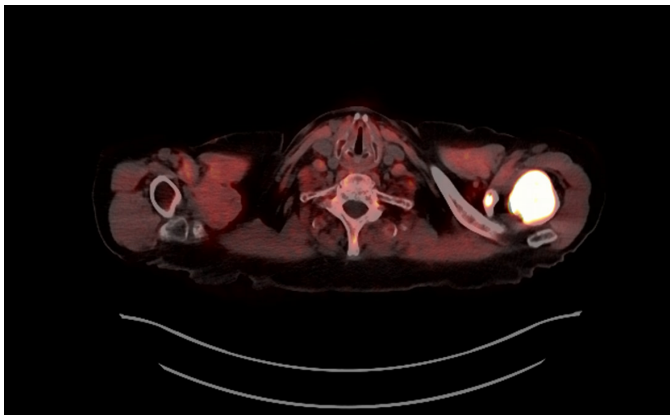
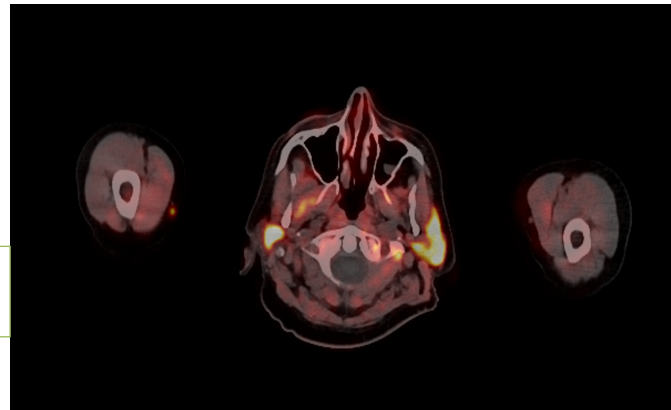


PET July 2024

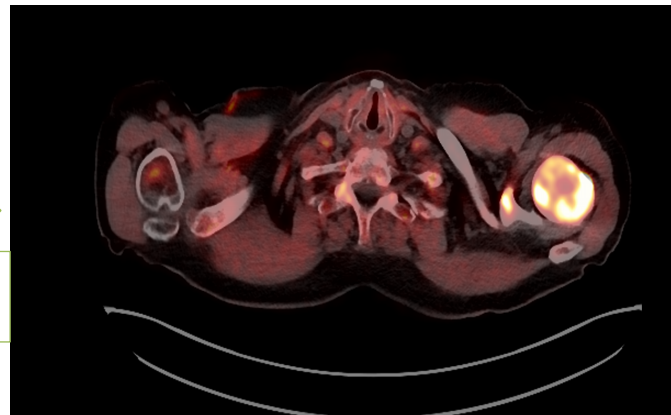


SUVmax.
6.6 → 4.0

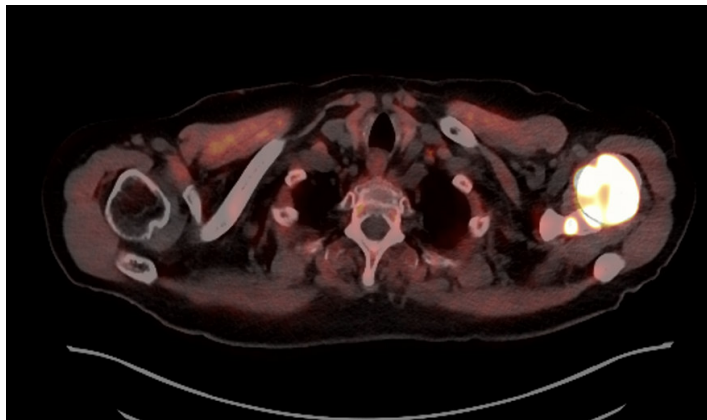
PET March 2025



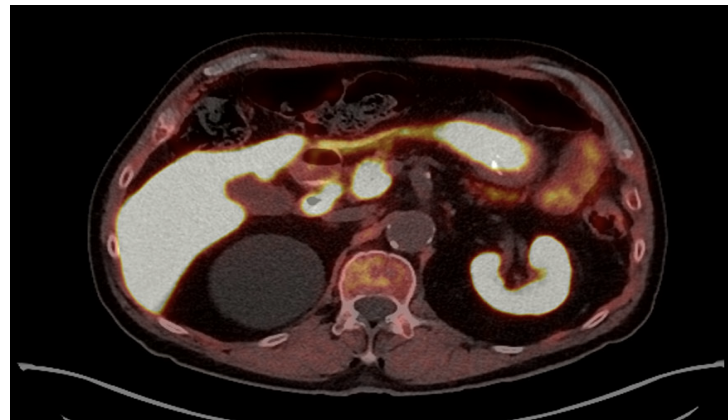
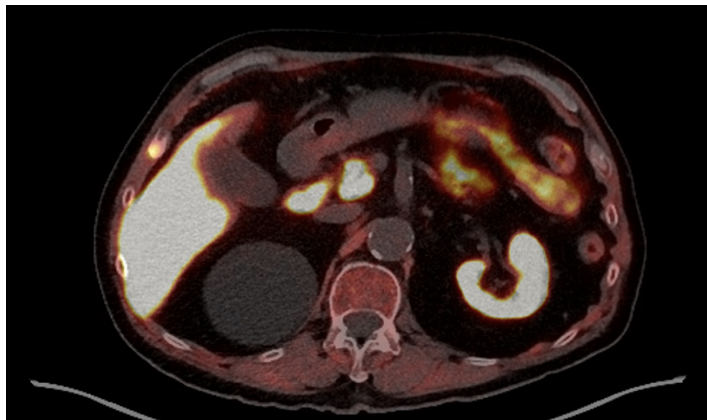
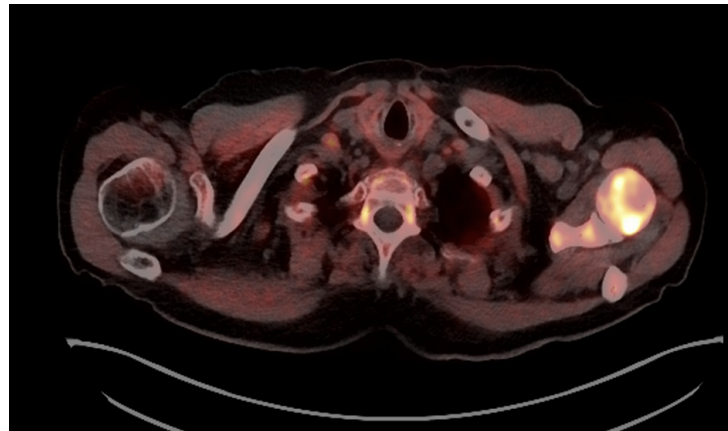
SUVmax.
15.9 → 8.7



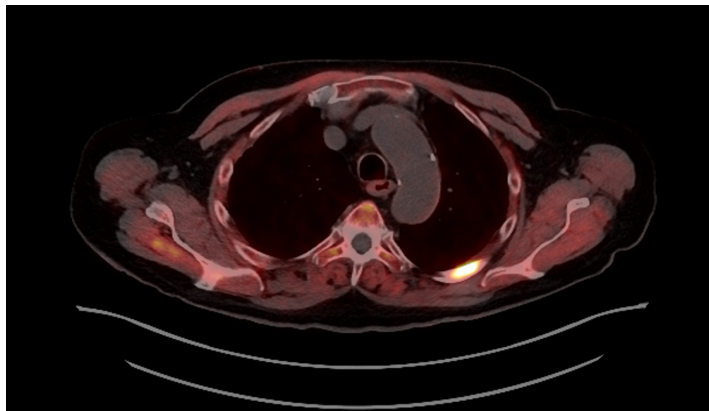
PET July 2024



PET March 2025

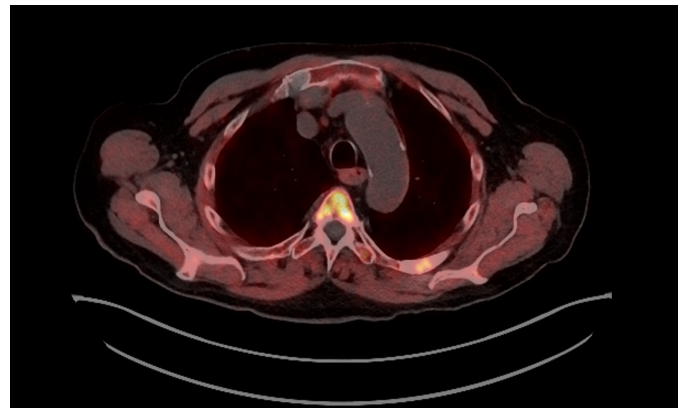


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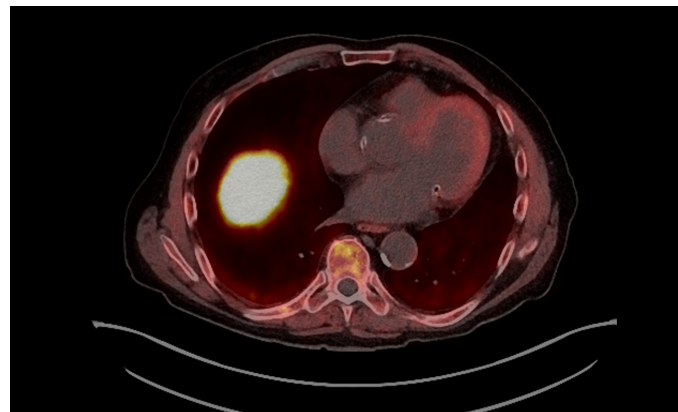
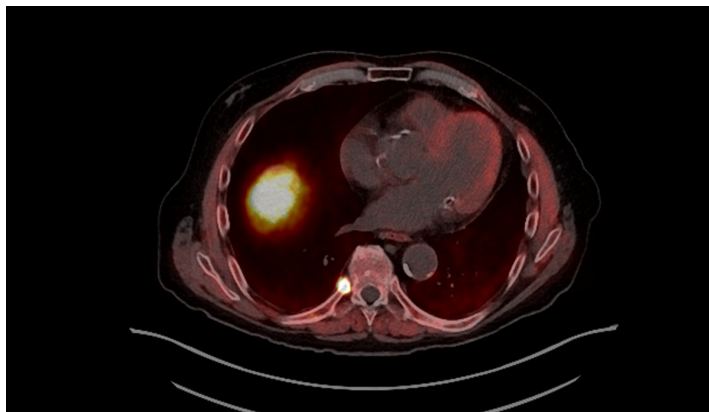


SUVmax.
5.4 → 3.3

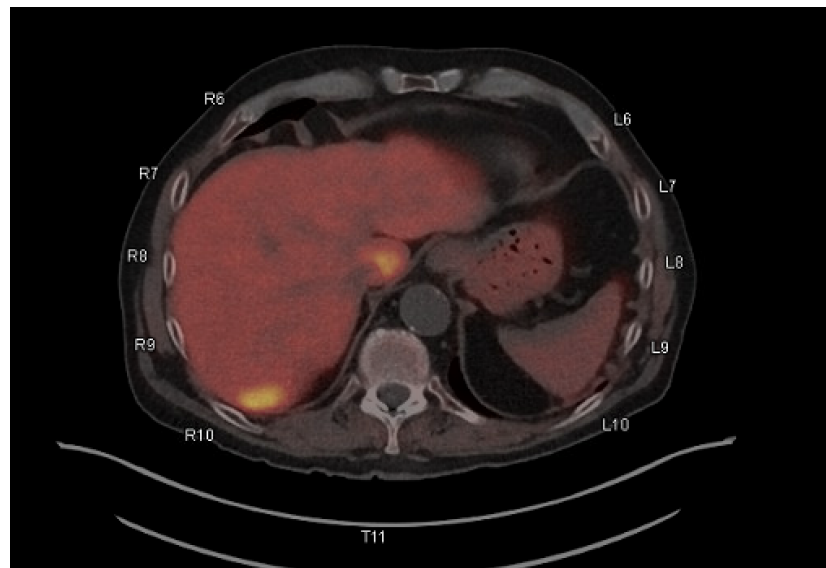
PET March 2025



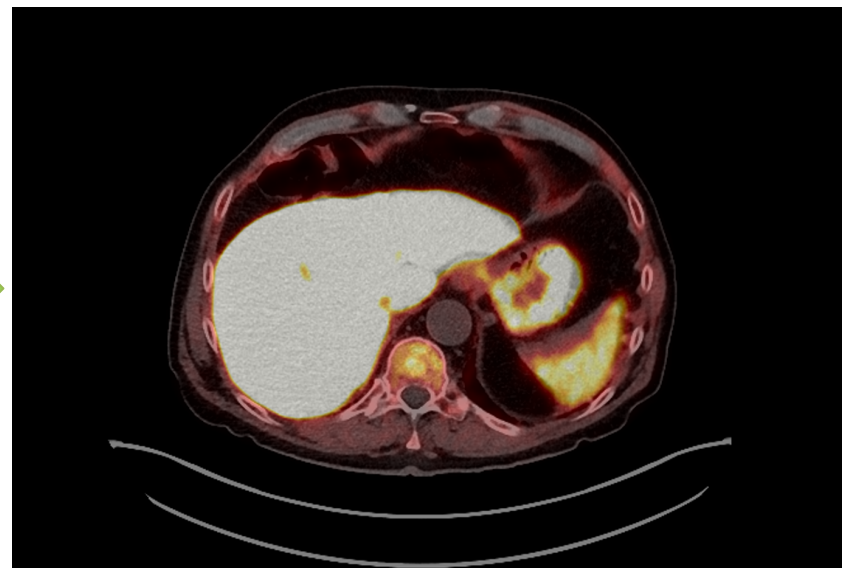
SUVmax.
6.3 → 0



PET July 2024



PET March 2025



ONCOLOGICAL HISTORY

6^o cycle Docetaxel

TDA + Abiraterone + Prednisone

FEBRUARY 2025

SEPTEMBER 2025

Urological asymptomatic



PSA 0,01

And... what will we do about the progression?

mBRCA2

Chemotherapy

Docetaxel

Cabazitaxel

Platinum-
based QT

¹⁷⁷Lu-PSMA

iPARP

Olaparib

Rucaparib

iPARP + ARPI

Talazoparib + Enzalutamide

Niraparib + Abiraterone

Olaparib + Abiraterone

And... what will we do about the progression?

mBRCA2

iPARP



ORIGINAL ARTICLE

Olaparib for Metastatic Castration-Resistant Prostate Cancer

J. de Bono, J. Mateo, K. Fizazi, F. Saad, N. Shore, S. Sandhu, K.N. Chi, O. Sartor, N. Agarwal, D. Olmos, A. Thiery-Vuillemin, P. Twardowski, N. Mehra, C. Goessl, J. Kang, J. Burgents, W. Wu, A. Kohlmann, C.A. Adelman, and M. Hussain



ORIGINAL ARTICLE

Rucaparib or Physician's Choice in Metastatic Prostate Cancer

K. Fizazi, J.M. Piulats, M.N. Reaume, P. Ostler, R. McDermott, J.R. Gingerich, E. Pintus, S.S. Sridhar, R.M. Bambury, U. Emmenegger, H. Lindberg, D. Morris, F. Nolé, J. Staffurth, C. Redfern, M.I. Sáez, W. Abida, G. Daugaard, A. Heidenreich, L. Krieger, B. Sautois, A. Loehr, D. Despain, C.A. Heyes, S.P. Watkins, S. Chowdhury, C.J. Ryan, and A.H. Bryce, for the TRITON3 Investigators*

iPARP + ARPI



Talazoparib plus enzalutamide in men with first-line metastatic castration-resistant prostate cancer (TALAPRO-2): a randomised, placebo-controlled, phase 3 trial

[Prof Neeraj Agarwal, MD ^{a,†}](#) · [Arun A Azad, MBBS ^b](#) · [Joan Carles, MD ^c](#) · [Prof Andre P Fay, MD ^d](#) · [Prof Nobuaki Matsubara, MD ^e](#) · [Daniel Heinrich, MD ^f](#) · et al. [Show more](#)



Original Article

Niraparib and Abiraterone Acetate plus Prednisone in Metastatic Castration-resistant Prostate Cancer: Final Overall Survival Analysis for the Phase 3 MAGNITUDE Trial

Kim N. Chi ^{a,*}, Elena Castro ^b, Gert Attard ^c, Matthew R. Smith ^d, Shahneen Sandhu ^e, Eleni Efsthathiou ^f, Guilhem Roubaud ^g, Eric J. Small ^h, Andrea Pereira de Santana Gomes ⁱ, Dana E. Rathkopf ^j, Marniza Saad ^k, Howard Gurney ^l, Wonho Jung ^m, Won Kim ⁿ, Shiva Dibaj ^o, Daphne Wu ⁿ, Jenny Zhang ^p, Angela Lopez-Gitlitz ⁿ, Peter Francis ^p, David Olmos ^b

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(niraparib/abiraterone acetate)
100mg/500mg tablets • 50mg/500mg tablets



ORIGINAL ARTICLE

Abiraterone and Olaparib for Metastatic Castration-Resistant Prostate Cancer

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

Thank you very much for your attention.

Claudia Agra Martínez

Resident physician

Hospital Universitario de Navarra