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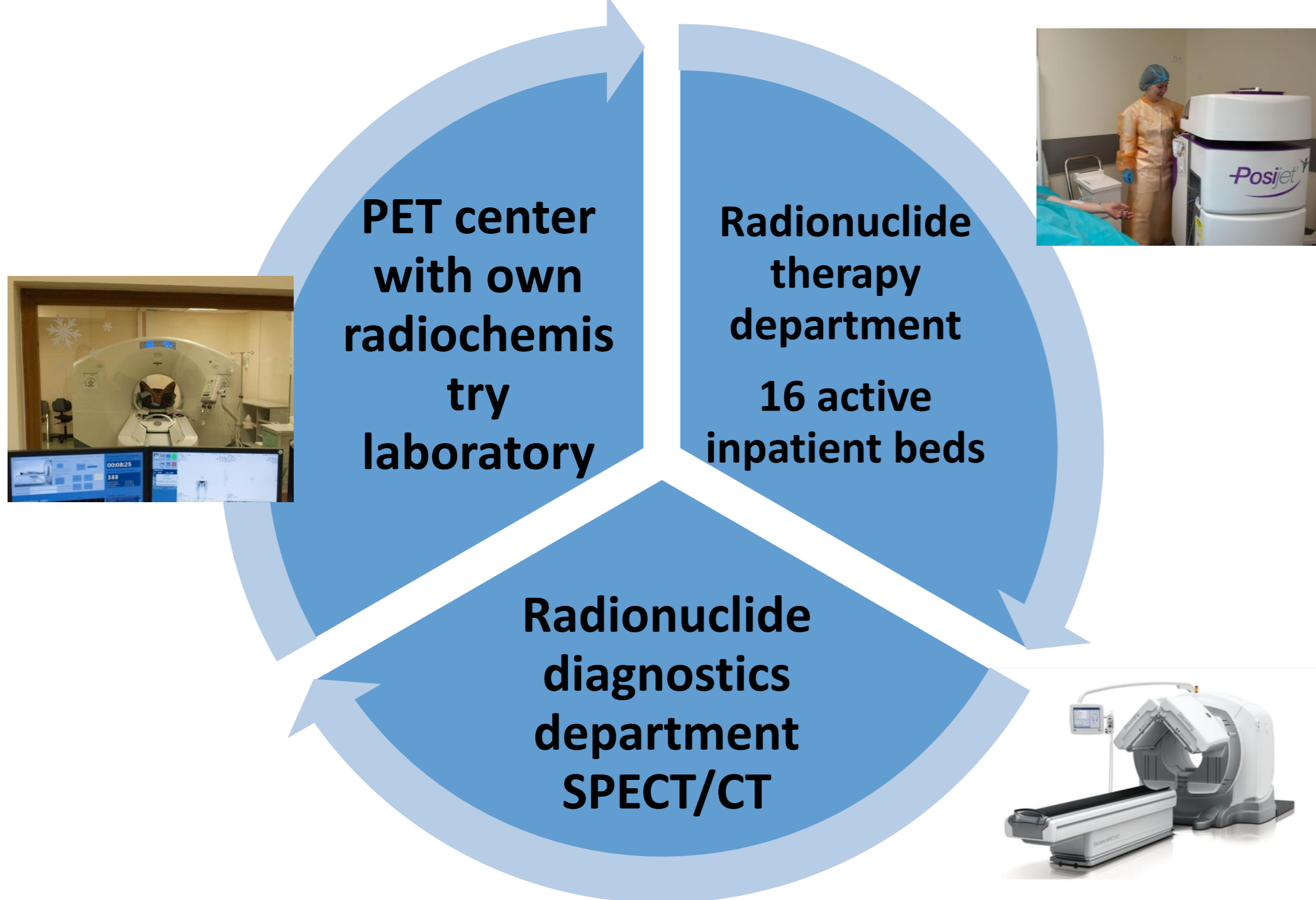
IMPRESSIVE RESPONSE TO ¹⁷⁷Lu-PSMA-617 THERAPY in a patient with metastatic castration-resistant prostate cancer refractory to apalutamide, docetaxel and metastasis-directed therapy

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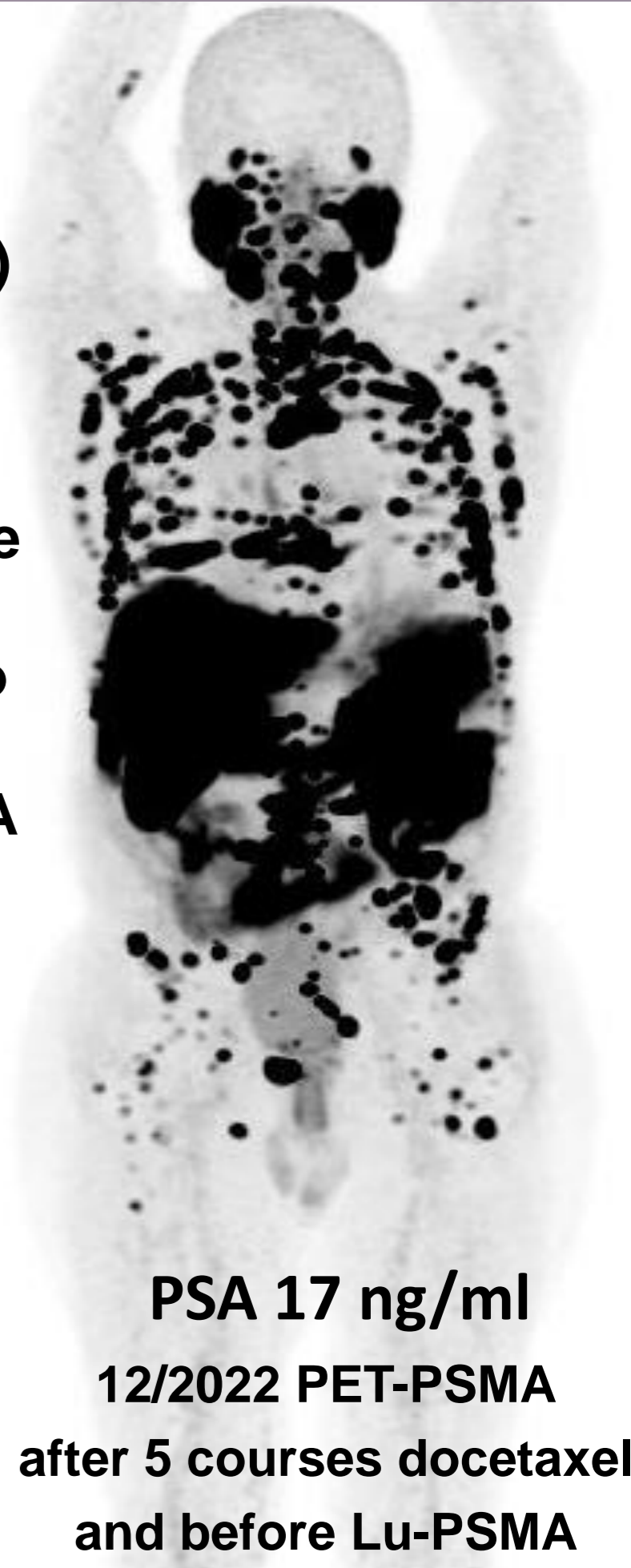
Radionuclide diagnostics and therapy department

310 courses of Lu-PSMA therapy in 2023



4 courses of ¹⁷⁷Lu-PSMA-617

From December 2022 to May 2023, PSMA-targeted therapy with ¹⁷⁷Lu-PSMA-617 (4 courses at 6-8 week intervals, mean activities of 7.6 GBq) was given as 4th line therapy for mCRPC. Treatment was terminated due to the development of complete radiologic response and the absence of metabolic substrate for continuation of therapy according to the theranostic concept. PSA response: decrease in total PSA from 17 ng/mL (12/2022) to 0.011 ng/mL (06/2023). Except for xerostomia grade 1, no other toxic reactions were noted.

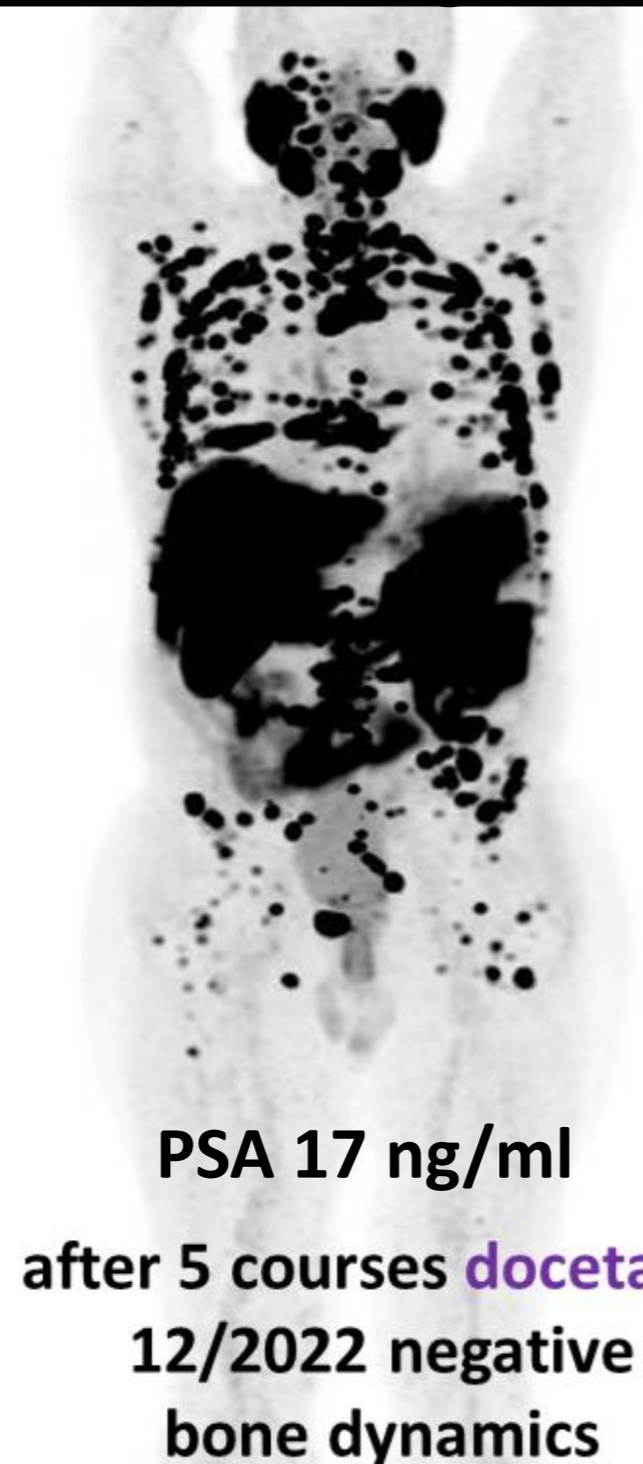
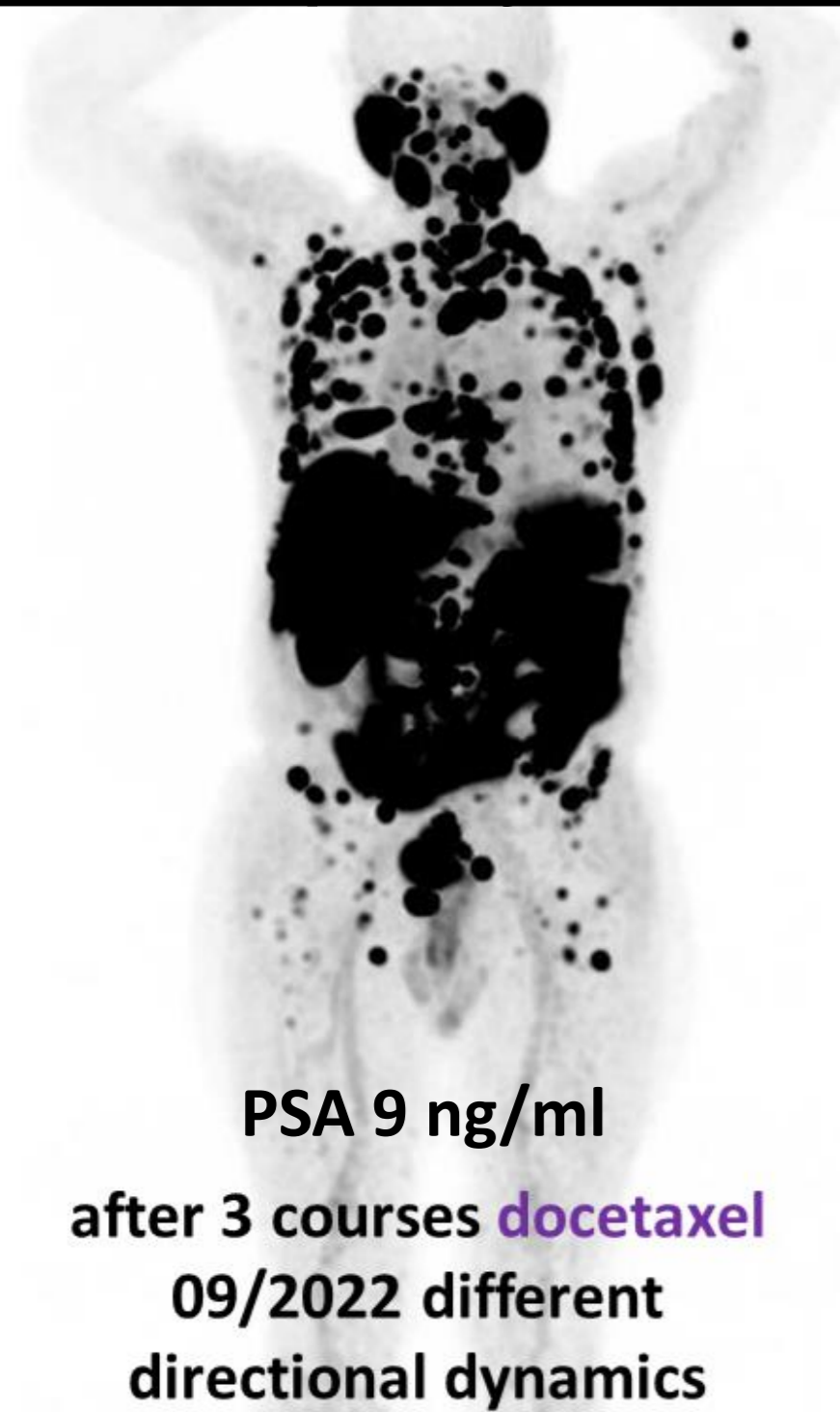


Patient R. 83 years old

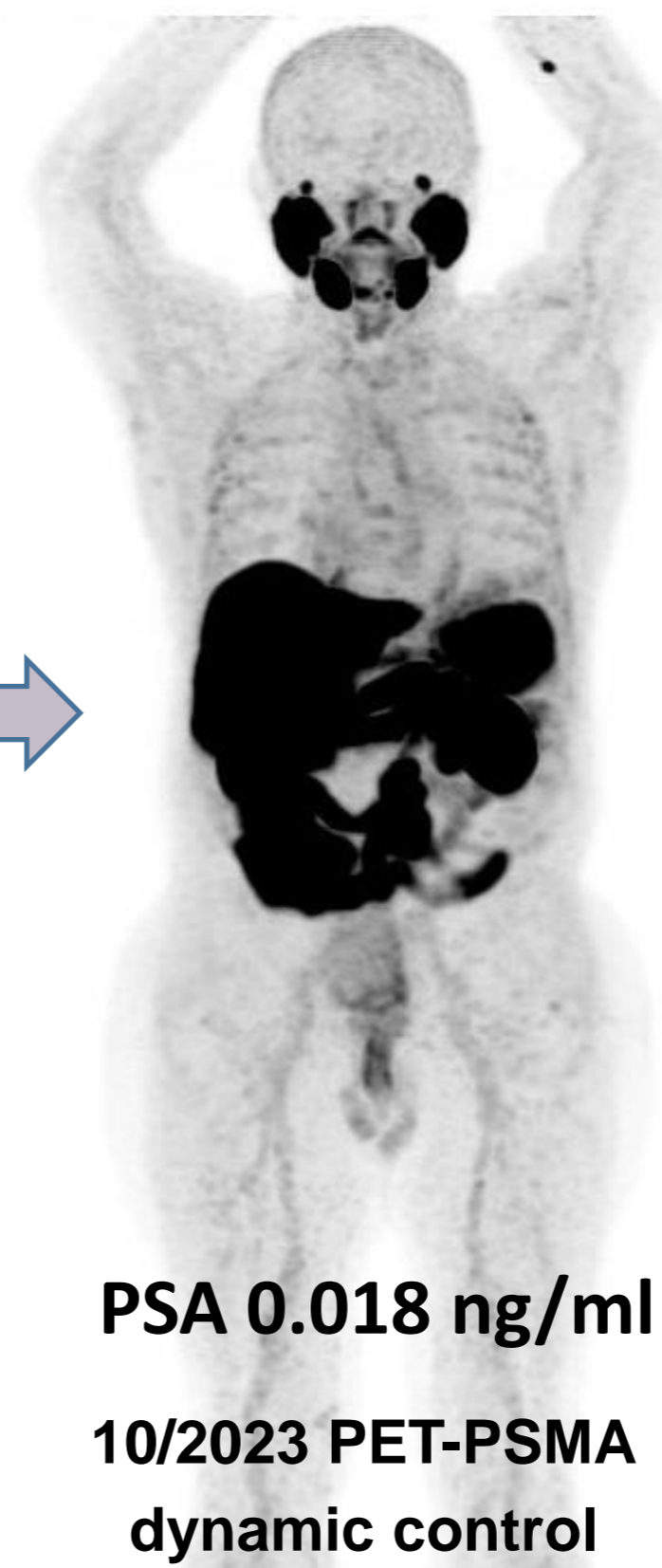
Three lines of mCRPC therapy were sequentially administered: metastasis-directed therapy (MDT) by stereotactic radiotherapy to bone foci in combination with ongoing ADT; apalutamide in combination with MDT on bone foci and lymph nodes plus ongoing ADT; 5 courses of docetaxel chemotherapy with marked hematologic toxicity. The response to each of these lines of therapy was progression within 5-6 months.

Initial PSA total 12.8 ng/ml, 03/2019 acinar adenocarcinoma Gleason 8, cT3aN1M0 III stage

- 04/2019 – 12/2019 neoadjuvant androgen deprivation therapy
- 01/2020 – 02/2020 EBRT for the prostate and seminal vesicles area (70 Gy), for the area of regional lymph nodes (50 Gy)
- 08/2021 PSA 8.7 ng/mL, 18F-PSMA PET/CT multiple bone mts
- Since 08/2021 ADT and denosumab
- 09/2021 SBRT for mts in the skull base bones, L1-L3, C7, Th3-4 vertebrae on the basis of 18F-PSMA PET/CT (12 Gy for each mts)
- Castration resistance since 02/2022
- 03/2022 – 06/2022 apalutamide, PSA & radiological progression
- 07/2022 - 10/2022 docetaxel (5 courses), PSA & radiological progression, hematologic toxicity
- Multidisciplinary team decision: PSMA-targeted therapy**



Toxicity 2-3 grade: anemia, neutropenia, asthenia



CONCLUSION

January 2024 patient status: ECOG - 0, PSA 0.016 ng/mL, remission according to PET/CT with PSMA, time without progression 13 months. In a patient with aggressive and refractory to standard drug therapy for mCRPC, PSMA-targeted radioligand therapy with ¹⁷⁷Lu-PSMA-617 was highly effective and low toxicity.