

19 days after PET/CT. Aggressive lymphomas exhibit intense FDG uptake, often with a high tumor burden. This can elevate blood lactate levels, which would become an alternative energy substrate for the brain and, by competition, reduce FDG uptake, as suggested by Yi HK et al (2). This is also described in individuals engaged in intense exercise, where decreased FDG uptake may be attributed to potential lactate utilization by the brain (3). The relatively preserved FDG uptake in the basal ganglia could be viewed as a physiological protective mechanism in response to reduced glucose availability for the brain. The oldest parts of the brain are vital for survival and must be preserved to maintain essential life functions. Despite being an organ with one of the highest glucose demands, the brain lacks the ability to store metabolic products for later use. Therefore, during competition with neoplastic cells for the available energy substrate, metabolic redistribution could contribute to preserving essential brain functions. **Conclusion:** Patients with high tumor burden due to Hodgkin's lymphoma may exhibit not only a global reduction in cerebral glucose uptake but also a redistribution of glucose consumption from the neocortex to older brain structures which are essential for survival.

Keywords: 18F-FDG PET/CT, Brain, Hipometabolism, Lymphoma.

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COMPARISON OF PET/CT IMAGES WITH 18F-FDG AND 18F-PSMA-1007 IN METASTATIC ACRAL MELANOMA: A CASE REPORT

Diego Machado Mendanha, Natalia Tobar,
Ligia Traldi Macedo, Allan Oliveira Santos,
Mariana Cunha Lopes de Lima,
Elba Cristina Sá de Camargo Etchebehere,
Carmen Silvia Passos Lima

*Universidade Estadual de Campinas (Unicamp),
Campinas, SP, Brazil*

Introduction/Justification: Acral melanoma (AM) is a rare form of cutaneous melanoma and affects acral areas such as the palms, soles, and nails. AM is associated with a worse prognosis compared to other subtypes of cutaneous melanoma, possibly due to its aggressiveness and tendency for metastasize. Despite the advances in surgical techniques, radiotherapy, and molecular targeted therapy/immunotherapy, new treatment modalities for patients with AM is highly desirable to improve survival rates. Staging and restaging AM patients with positron emission computed tomography with 18F-FDG (FDG PET/CT) is essential to detect nodal and distant metastasis in these high-risk patients. However, 18F-FDG cannot be used as a theranostic radiopharmaceutical. The possibility of investing in a theranostic approach to these patients is desirable and radiolabeled PSMA may be a potential tool. Here, we present a patient with AM, which progressed with brain and lung metastases, and highlights the importance of PET/CT images performed with 18F-FDG and 18F-PSMA-1007 (PSMA

PET/CT) for the identification of metastases and with potential theranostic approach for this challenge disease. **Report:** D. R.M., a 50-year-old male rural worker, sought medical assistance due to a dark skin lesion with progressive growth in the third left toe in January 2023. The biopsy reveals AM. In September 2023, the patient underwent amputation of the third and fourth left toes and left ilioinguinal lymphadenectomy due to melanoma suspicion; histopathological analysis confirmed melanoma with vertical growth and deep invasion into the dermis as well as lymph node metastases. In January 2024, he presented a reduction in level of consciousness and intense headaches. Cranial magnetic resonance imaging (MRI) revealed multiple brain metastasis with sizes ranging from 0.6 to 4.6 cm, significant swelling, edema, and midline shift. The patient underwent restaging FDG PET/CT and PSMA PET/CT, with a 24-hour interval between studies. FDG PET/CT identified mild metabolism in the brain metastases detected by MRI and no extracranial metastases. On the other hand, PSMA PET/CT impressively identified all brain metastases detected by MRI (with SUVs ranging from 8 to 11) with uptake higher and more extensive than 18F-FDG uptake and no extracranial metastases. At this moment, the patient was admitted to the hospital for neurological symptom control with dexamethasone. **Conclusion:** This case highlights the importance of comparing FDG PET/CT and PSMA PET/CT in assessing patients with AM. PSMA PET/CT emerges as a promising diagnostic imaging modality for detecting distant metastasis in AM, especially brain metastases since PSMA is not normally taken up by the central nervous system. PSMA is extremely avid for AM metastases, rendering this imaging modality highly sensitive for diagnostic purposes, helping guide therapeutic planning. PSMA may be a potential theranostic tool in specific cases. **Acknowledgements:** The study was supported by Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), Fundação de Apoio ao Ensino e à Pesquisa do Estado de São Paulo (Cancer Theranostics Innovation Center, CEPID FAPESP #2021/10265-8), and International Atomic Energy Agency (IAEA) technical cooperation projects for development of Latin American Countries (IAEA/TCLAC: EX-BRA6033-2401375).

Keywords: Acral melanoma, FDG PET/CT, PSMA scan.

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DMSA-99mTc SPECT/CT AND DTPA-99mTc IMAGES IN CROSS FUSED RENAL ECTOPIA: A CASE REPORT

Najua Abou Arabi Silveira,
Felipe Piccarone Gonçalves Ribeiro,
Kaique Moraes do Amaral,
Dihego Ferreira dos Santos,
Ricardo Norberto Tineo,
Victor Cabral Costa Ribeiro Heringer,
Allan de Oliveira Santos, Edna Brunetto,
Barbara Juarez Amorim,