to address clinical uncertainty about the presence of estrogen receptors. In 40% of the staging/restaging subgroup, 18F-fluoroestradiol contributed to the clinical reasoning. 18F-FES showed uptake in lymph nodes without hypermetabolism and was able to provide diagnostic specificity, either by raising suspicion in a finding initially taken as benign or by predicting false-positive metabolic findings due to the absence of estrogen receptors. Regarding the evaluation of hormone receptor expression status, 18F-fluoroestradiol has supported a proposed change in the tumoral immunohistochemistry of a lesion non-invasively. **Conclusion:** 18F-FES PET/CT appears to provide additional relevant information in breast cancer, but future studies should evaluate the method's impact on clinical management.

Keywords: 18F-FDG PET/CT, breast cancer, FES.

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COMPARISON OF 18F-FDG AND 18F-PSMA PET/CT IN PATIENTS WITH NON-SMALL CELL LUNG CANCER

Najua Abou Arabi Silveira,
Maurício Wesley Perroud Júnior,
Hugo Nakano Ide, Kaique Moraes do Amaral,
Simone Kuba, Natália Tobar,
Thiago Ferreira de Souza,
Carmen Silva Passos Lima,
José Barreto Campello Carvalheira,
Barbara Juarez Amorim,
Elba Cristina Sá de Camargo Etchebehere,
Mariana da Cunha Lopes de Lima,
Allan de Oliveira Santos,
Ludimila Santiago Almeida,
Maria Emília Seren Takahashi,
Eliana Cristina Martins Miranda,
Carmino Antonio de Souza,
Sérgio Querino Brunetto, Celso Dario Ramos

Universidade Estadual de Campinas (UNICAMP), Campinas, SP, Brazil

Introduction/Justification: Lung cancer remains a major global cause of mortality. While 18F-FDG PET/CT is widely utilized for detection, staging, and monitoring, detecting increased glucose metabolism in tumor cells, it lacks theranostic potential. The prostate-specific membrane antigen (PSMA) tracer, initially linked to prostate cancer, is also recognized as a marker of neoangiogenesis, accumulating in various neoplasms and showing promising theranostic capabilities. **Objectives:** This study aims to compare the uptake patterns of 18F-FDG and 18F-PSMA in primary and metastatic lesions of non-small cell lung cancer. **Materials and Methods:** Four male patients diagnosed with non-small cell lung cancer (including two adenocarcinomas, one squamous cell carcinoma, and one unspecified type), aged between 58 and 71 years, underwent PET/CT imaging. 18F-FDG PET/CT scans were performed 60 minutes after intravenous administration of 0.1 mCi/kg of 18F-FDG, while 18F-PSMA PET/CT scans were obtained 90 minutes after intravenous injection of 0.1 mCi/kg of 18F-PSMA. Imaging data were analyzed by two nuclear medicine physicians and one radiologist. The maximum standardized uptake value (SUVmax) of each lesion was measured for both radiotracers in the primary tumor, lymph nodes, and metastatic sites identified through visual analysis, considering values obtained above the cardiac blood pool measured in the left atrium. **Results:** A total of 100 lesions were detected, with 82 identified using 18F-FDG and 92 using 18F-PSMA. Eight lesions were exclusively detected by 18F-FDG, while 14 were only identified by 18F-PSMA. The median SUVmax of lesions in 18F-FDG and 18F-PSMA images was 5.3 (1.7 – 25.0) and 3.7 (0.7 - 12.4), respectively. Brain lesions were more readily identified on 18F-PSMA images, whereas liver lesions were more notable on 18F-FDG images due to the intense physiological uptake of 18F-FDG and 18F-PSMA in the brain and liver, respectively. **Conclusion:** Both 18F-FDG-PET/CT and 18F-PSMA-PET/CT have the ability to identify most lesions of non-small cell lung cancer. Although 18F-PSMA images detected a greater number of lesions, the uptake intensity is generally higher with 18F-FDG. These findings suggest that the two radiopharmaceuticals may have complementary roles in lung cancer by independently detecting lesions with higher glycolytic activity or greater neoangiogenesis, or both simultaneously, which could contribute to a more personalized approach in managing these patients. The results also suggest a possible theranostic approach in selected patients with high uptake of PSMA. Further investigations involving a larger patient cohort are essential to validate these findings.

Keywords: Lung cancer, PET/CT, PSMA-18F, PSMA-68Ga, Theranostic.

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COMPARISON OF 68GA-PSMA AND 18F-FDG-PET/CT IN THE ASSESSMENT OF DESMOID TUMORS

Tobias Luis dos Reis, Kaique Moraes do Amaral,
Najua Abou Arab,
Maria Emilia Seren Takahashi,
José Barreto Campello Carvalheira,
Barbara Juarez Amorim,
Elba Cristina Sá de Camargo Etchebehere,
Mariana da Cunha Lopes de Lima,
Allan de Oliveira Santos,
Ludmila Santiago Almeida,
Eliana Cristina Martins Miranda,
Carmen Silvia Passos Lima, Celso Dario Ramos,
Sérgio Querino Brunetto, Simone Kuba,
NAtália Tobar, Carmino Antonio Souza,
Mariana Cortês Caleffi,
Mariana Fernandes França Mitre Amorim

Cancer Theranostics Innovation Center (CancerThera), Campinas, SP, Brazil

Introduction/Justification: Recently, the tracer Prostate Specific Membrane Antigen (PSMA), which can be labeled with the radioisotopes 68Ga or 18F, has been commercially