COMPARISON OF PET/CT IMAGES WITH 18 F-FDG AND 18 F-PSMA-1007 IN RELAPSED ADENOID CYSTIC CARCINOMA

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Introduction/Justification: Adenoid cystic carcinoma (ACC) is a tumor of the salivary glands, characterized by insidious growth, recurrences, and distant metastases. **Objectives:** This study aimed to describe the findings of PET/CT images performed with 18 F-FDG (FDG PET/CT) and 18 F-PSMA-1007 (PSMA PET/CT) in patients with relapsed ACC to verify whether any of these studies are more suitable for identifying local recurrence and distant metastases. **Materials and Methods:** Patients were submitted to restaging PET/CT studies with 18 F-FDG and 18 F- PSMA-1007 with a 24-hour interval between exams before treatment. Two nuclear medicine physicians compared imaging findings. **Results:** Patient 1. P.A.C., a 29-year-old female, was diagnosed with ACC of the parotid in 2016. She underwent total parotidectomy and RT. In 2021, a chest computed tomography (CT) identified lung nodules, and the patient underwent resection of the largest lesions. In 2024, the patient was submitted to restaging images with FDG PET/CT that were negative for metastases, but PSMA PET/CT images identified mild PSMA uptake in two pulmonary nodules (0.8 cm, SUV = 2.2; 0.9 cm, SUV = 3.4) suspicious for ACC metastases. The patient remains asymptomatic under supervised follow-up. Patient 2. L.C.O., a 49-year-old male with newly diagnosed ACC in the salivary gland, underwent tumor resection and RT in 2010. The patient recurred in lungs and skull and was submitted to resection of the lung nodules and total skull radiotherapy (RT). In 2022, the patient underwent RT to a metastasis in the 5th lumbar vertebrae. In 2023, FDG PET/CT revealed hypermetabolism in multiple pulmonary nodules (the largest measuring 1.8 cm, SUV = 13.4) and in the L5 vertebrae (SUV = 8.5), consistent with metastases. The PSMA PET/CT showed only mild PSMA uptake in the pulmonary nodules (the largest nodule had a SUV = 4.7) and similar PSMA uptake (as FDG) in L5 vertebrae (SUV = 8.7). The patient is currently asymptomatic. Patient 3. P.C.S., a 46- year-old male, was diagnosed with ACC in the parapharyngeal space and underwent surgical resection followed by RT in 2008. In 2022, a chest CT identified lung metastases, the largest nodule with 3.8 cm. In 2023, a FDG PET/CT demonstrated hypermetabolic lung nodule metastases (the largest measuring 3.0 and 3.8 cm; SUV = 12.3 and SUV = 6.1, respectively). The FDG PET/CT also demonstrated multiple liver nodules (the largest measuring 2.7 cm) without FDG uptake, suspicious for metastases. A PSMA PET/CT showed PSMA uptake in the same lung nodules, however incongruent when compared to FDG uptake: the two nodules measuring 3.0 and 3.8 cm had SUVs of 5.2 and 8.8, respectively). The patient currently reports dyspnea during moderate-intensity physical activity. **Conclusion:** The data show heterogeneity in FDG PET/CT and PSMA PET/CT findings in relapsed ACC. Combining both PET/CT radiotracers can provide additional information for monitoring patients. PSMA PET/CT has the advantage of the possibility of a theranostic approach. **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).

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EVALUATION IN VITRO OF THE GOLD(I) COMPLEX WITH TRIPHENYLPHOSPHINE AND 4-DIMETHYLAAMINEPYRIDINE AS LIGANDS IN SKIN CANCER

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Introduction/Justification: Closely related to high UV exposure and comprising basal cell carcinoma, squamous cell carcinoma (SCC), and melanoma, skin cancer is the most prevalent tumor in the world. Cisplatin has been used for treatment of patients with skin squamous cell carcinoma (SSCC) with low response rate and pronounced adverse effects. Thus, the search for new chemotherapeutic agents for patients with SSCC or melanoma is required, and gold complexes have been explored as potential anticancer drugs. Targeting thioredoxin reductase or thiol-rich proteins, many gold complexes can induce cell death by reactive oxygen species. **Objectives:** Our study aimed to evaluate the in vitro anti-proliferative effects of a gold(I) complex with triphenylphosphine and 4-dimethylaminopyridine as ligand. **Materials and Methods:** The gold (I) complex was synthesized at the Department of Inorganic Chemistry, Institute of Chemistry, University of Campinas. Melanoma (UACC-62), squamous cell carcinoma of tongue (SCC4 and SCC15), and a non-tumoral cell line (HaCat, immortalized keratinocyte) were grown in complete medium