Applications of novel somatostatin receptors targeting PET-agents in Oncology. Potential role of Computer-Aided Diagnostic systems in improving diagnosis and enhancing interpretability

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Abstract

68Ga-DOTA-TATE PET/CT is an imaging technique that allows whole-body imaging of cell surface expression of somatostatin receptors (SSTRs) and given its superior diagnostic accuracy over conventional imaging techniques, is rapidly evolving as the new imaging standard of reference for the detection and characterization of a vast variety of tumors including gastrointestinal, pancreatic and bronchial neuroendocrine tumors as well as pheochromocytoma, paraganglioma, menigioma, and oncogenic osteomalacia. Most importantly, 68Ga-DOTA-TATE PET/CT allows selection of patients with high potential to have benefit by the theranostic application of peptide receptor radionuclide therapy, contributing significantly to optimal patient management.

Bio

Dr. Papadakis received his medical degree (MD) from the University of Crete, School of Medicine in Greece and is board certified in Nuclear Medicine. He received his Master’s degree in Public Health & Health Administration (MPH) from the Department of Social Medicine & Health Management, University of Crete and is in the final phase of his PhD thesis in the field of tracking Circulating Tumor Cells (CTCs) in breast cancer patients. Dr. Papadakis is currently a research fellow at the National Institute of Health/ Clinical Center in Bethesda, MD, USA. He is primarily working in the interdisciplinary area of molecular imaging with an emphasis on Positron Emission Tomography (PET) applications in clinical and pre-clinical research. His current projects involve applications of new site-directed PET-radiopharmaceuticals in Oncology and Cardiology, pulse focused ultrasound
(pFUS) in enhancing homing and treatment effect of stem cells to brain tumors, traumatic brain injury (TBI) in small animal models, neurobehavioral abnormalities in HIV-transgenic small animal models, as well as applications of informatics and computer-aided diagnostic systems in molecular imaging and nuclear medicine applications.

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