THIS MONTH IN

JNM

Nanoparticles for cardiovascular imaging: Stendahl and Sinusas provide the second of 2 overviews, here describing current examples of radiolabeled nanoparticulate probes for PET and SPECT and their utility in a range of preclinical cardiac applications. ***Page 1637***

Tumor texture analysis and PET: Buvat and colleagues offer perspectives on current image analysis approaches and areas for needed advancement in PET characterization of tumor heterogeneity. ***Page 1642***

Innervation–MBF and ^{11}C-HED PET: Dilsizian and Eckelman look at challenges associated with using a single radioisotope in PET assessment of both myocardial blood flow and innervation and preview an article on this topic in this issue of *JNM*. ***Page 1645***

^{177}Lu-octreotate for pancreatic NETs: van Vliet and colleagues describe outcomes of neoadjuvant treatment of pancreatic neuroendocrine tumors with peptide receptor radionuclide therapy in patients with borderline unresectable or oligometastatic disease. ***Page 1647***

Predicting ^{90}Y microsphere outcomes: Ilhan and colleagues analyze the predictive value of ^{99m}Tc-MAA SPECT for ^{90}Y-labeled resin microsphere radioembolization in primary and secondary liver malignancies by comparing uptake on pretherapeutic ^{99m}Tc-MAA SPECT with that on posttherapeutic ^{90}Y SPECT. ***Page 1654***

^{18}F-FEC PET/CT in radioembolization: Hartenbach and colleagues evaluate ^{18}F-fluoroethylcholine PET/CT as a metabolic imaging technique for assessment of treatment response to ^{90}Y radioembolization in patients with locally advanced hepatocellular carcinoma. ***Page 1661***

Texture features in PET: Yan and colleagues explore the effect of image reconstruction settings on more than 50 separate texture parameters in ^{18}F-FDG PET images acquired on a PET/CT scanner incorporating point-spread function and time-of-flight technology. ***Page 1667***

PET/CT for breast cancer staging: Hogan and colleagues identify differences in ^{18}F-FDG PET/CT systemic staging in women newly diagnosed with invasive lobular carcinoma and those with invasive ductal carcinoma. ***Page 1674***

PET/CT, early response, and breast cancer: Kostakoglu and colleagues determine whether an early change in ^{18}F-FLT standardized uptake values using PET with CT can predict pathologic complete response of primary breast cancer to neoadjuvant chemotherapy. ***Page 1681***

Modulating NIS function in ATC cells: Singh and colleagues investigate the role of estrogen-related receptor γ in regulation of sodium iodide symporter function in anaplastic thyroid cancer cells using GSK5182, an inverse agonist of estrogen-related receptor γ. ***Page 1690***

^{68}Ga-PSMA-617 in prostate cancer diagnosis: Afshar-Oromieh and colleagues detail the biodistribution of this prostate-specific membrane antigen–targeted PET radioligand in normal tissues and in prostate cancer and report on radiation exposure with the agent in PET imaging. ***Page 1697***

Innervation–MBF mismatch and ^{11}C-HED: Harms and colleagues assess the rate of tracer influx from blood to myocardium on an ^{11}C-HED PET scan as an index of myocardial blood flow, with potential for identifying areas of blood flow–innervation mismatch. ***Page 1706***

SPECT MPR in multivessel CAD: Ben Bouallègue and colleagues describe the feasibility of myocardial perfusion reserve estimation using a cadmium-zinc-telluride camera in a cohort of patients with multivessel coronary artery disease and correlate results with invasive angiographic data. ***Page 1712***

V/Q PET/CT in lung function: Le Roux and colleagues compare quantitative ventilation/perfusion PET/CT results and pulmonary function test data, with results that support the use of V/Q PET/CT in radiation therapy, preoperative planning, and pulmonary dysfunction assessment. ***Page 1718***

nAChR availability and nicotine metabolism: Dubroff and colleagues use 2-^{18}F-FA PET to examine the relationship between nicotine metabolite ratio, a stable measure of hepatic nicotine metabolism, and nicotinic acetylcholine availability in smokers characterized as slow and normal metabolizers. ***Page 1724***

Cerebral ^{11}C-laniquidar kinetics: Froklage and colleagues develop a pharmacokinetic model for quantification of uptake of this newly developed tracer of P-glycoprotein expression and assess its test–retest variability in healthy subjects. ***Page 1730***

^{18}F-florbetapir PET quantification: Joshi and colleagues describe a semiautomated quantitative method for estimating ^{18}F-florbetapir plaque binding using static 10-min PET images, evaluate the method's accuracy, and compare derived standardized uptake value ratios with neuropathologic amyloid measures. ***Page 1736***

BAT/WAT discrimination with PET/MR: Franz and colleagues evaluate signal-fat-fraction analysis based on a 2-point-Dixon water–fat separation method in whole-body simultaneous PET/MR imaging for distinguishing brown adipose tissue from white adipose tissue. ***Page 1742***

^{90}Y-DOTATOC in meningioma treatment: Gerster-Gilliéron and colleagues investigate whether somatostatin receptor–targeted radionuclide therapy with ^{90}Y-DOTATOC may be an option in meningioma patients with recurrent or progressive meningiomas. ***Page 1748***

Molecular imaging in radiotherapy: Jeraj and colleagues provide an educational overview of molecular imaging applications in radiation therapy, with a focus on target definition, treatment response assessment, quantitative imaging requirements, potential limitations, and possibilities for future development. ***Page 1752***

^{211}At RIT optimized mAb dose: Frost and colleagues report on optimization of the anti-CD45 monoclonal antibody protein dose for ^{211}At radioimmunotherapy in hematopoietic cell transplantation, including tracer activity distribution and α-imaging–based small-scale dosimetry. ***Page 1766***

Enhancing SC therapy in brain injury: Zhang and colleagues use spatiotemporal PET to investigate metabolic changes after combined therapy with induced pluripotent stem cells, neuronal stem cells, and Chinese patent medicine in a rat model of cerebral ischemia–reperfusion injury. ***Page 1774***

PET and PTK7 expression: Jacobson and colleagues describe the development of a specific, selective, and high-affinity PET radioligand based on a single-stranded DNA aptamer to address challenges in noninvasively visualizing tumoral expression of protein tyrosine kinase-7. ***Page 1780***

Hyperpolarized ^{13}C-pyruvate and ^{18}F-FDG PET: Gutte and colleagues establish a practical workflow for tumor tissue characterization with simultaneous ^{18}F-FDG PET and hyperpolarized ^{13}C-pyruvate MR spectroscopy and test its feasibility in dogs with cancer. ***Page 1786***

Intraarterial microdosing and PET: Burt and colleagues describe ^{18}F-FDG PET assessment of preclinical studies evaluating a novel drug development approach combining intraarterial drug delivery and microdosing. ***Page 1793***

Biodistribution of ^{131}I-tositumomab: Wahl and colleagues investigate whether altered biodistribution of ^{131}I-tositumomab can be identified using quantitative calculations of whole-body residence time alone for decision making about administration of therapeutic doses. ***Page 1800***