THIS MONTH IN

JNM

Biomarkers in oncology trials: Mankoff and colleagues offer an introductory focus on cancer biomarkers and their applications in molecular imaging studies in clinical trials, with a focus on individualizing therapy. . . . . ***Page 525***

State of clinical PET/MR: Mansi and Ciarmiello look at the challenges and promise associated with integration of PET/MR into routine use, including instrumentation, new indications, and the need for specific expertise in interpretation. . . . . ***Page 529***

PET/CT with sodium ^{18}F-fluoride: Segall summarizes current practices in bone imaging with NaF in prostate cancer, including relevant trials, alternative approaches, and regulatory status. . . . . ***Page 531***

^{131}I-huA33 and capecitabine therapy: Herbertson and colleagues use a combined chemoradiation regimen, including a humanized antibody that targets the A33 antigen, to treat patients with metastatic colon cancer. . . . . ***Page 534***

PET and MR in brain tumors: Filss and colleagues compare the accuracy of ^{18}F-FET PET and perfusion-weighted MR imaging, including maps of regional cerebral blood volume, in patients with gliomas and meningiomas. . . . . ***Page 540***

Diffusivity and amino acid PET: Rahm and colleagues use diffusion-weighted MR and ^{18}F-FET PET imaging to assess focal changes in diffusion and amino acid uptake in patients with nonenhancing low-grade gliomas. . . . . ***Page 546***

Relative contributions of PET and MR: Kuhn and colleagues report on a study designed to elucidate which portions of ^{18}F-FDG PET/MR data enhance the sensitivity and specificity of the hybrid examination in patients with head and neck cancer. . . . . ***Page 551***

Mediastinal N-staging in lung cancer: Flechsig and colleagues determine whether volumetric CT histogram analysis can improve the characterization of lymph nodes in ^{18}F-FDG PET/CT staging of patients with lung cancer. . . . . ***Page 559***

PET in pulmonary amyloidosis: Baqir and colleagues present imaging findings in a group of patients with primary amyloidosis and characterize ^{18}F-FDG PET results that may suggest the presence of neoplasms. . . . . ***Page 565***

PET and prognosis in Hodgkin lymphoma: Rossi and colleagues compare the utility of visual (5-point scale) and semiquantitative (change in uptake) methods for assessment of interim PET imaging in patients with first diagnoses of Hodgkin lymphoma. . . . . ***Page 569***

NOPR NaF PET in prostate cancer: Hillner and colleagues review initial results from National Oncologic PET Registry data on the use of ^{18}F-sodium fluoride PET in identifying osseous metastases in men with known prostate cancer. . . . . ***Page 574***

PET in colon cancer liver metastasis: Lee and colleagues assess the prognostic ability of preoperative ^{18}F-FDG PET/CT in patients with synchronous colorectal cancer liver metastases after curative-intent colorectal and liver surgery. . . . . ***Page 582***

^{18}F-FDGal lumped constant in cirrhosis: Mikkelsen and colleagues test the hypothesis that the calculated lumped constant for ^{18}F-FD-galactose PET imaging in patients with parenchymal liver disease differs significantly from that in healthy individuals. . . . . ***Page 590***

Novel phosphodiesterase 10A radioligands: Plisson and colleagues describe progressive studies with ^{11}C-labeled PET tracers in pig and primate brain and evaluation of the most promising tracer in humans. . . . . ***Page 595***

Lesion uptake in TOF PET: Daube-Witherspoon and colleagues assess the impact of time-of-flight information on the accuracy and precision of quantitative measurements of activity uptake on PET in small lesions in clinical studies. . . . . ***Page 602***

Radionuclides in nephrology: Taylor provides the first of 2 educational overviews, with a focus on radiopharmaceuticals, quality control, and quantitative indices in renal scintigraphy. . . . . ***Page 608***

^{18}F-FBPA-Fr pharmacokinetics: Yang and colleagues investigate the distribution and uptake of this tracer after ultrasound-induced blood–brain barrier disruption for potential enhancement of boron delivery in neutron capture therapy. . . . . ***Page 616***

hCtr1 in prostate cancer: Cai and colleagues research the mechanisms of cellular uptake on $^{64}CuCl_2$ PET imaging and explore the functional role of human copper transporter 1 in prostate cancer cell proliferation and tumor growth. . . . . ***Page 622***

Nanoparticle imaging of CCR5: Luehmann and colleagues describe the development of a targeted nanoparticle for sensitive and specific PET/CT imaging of the chemokine receptor 5 and initial studies in a mouse model of vascular injury. . . . . ***Page 629***

PET neuropeptide Y2 imaging: Winterdahl and colleagues detail the development of a novel positron-emitting radioligand based on an NPY2 receptor antagonist and describe initial PET brain imaging studies in pigs. . . . . ***Page 635***

5-HT$_7$ receptor radioligands: Hansen and colleagues present the radiosynthesis and preclinical in vivo evaluation of 2 novel ^{11}C-labeled tracers for investigation of 5-HT$_7$R binding in the living brain. . . . . ***Page 640***

Effects of haloperidol on DAT: Booij and colleagues report on a study in rats to determine whether the extent of change in synaptic dopamine resulting from acute haloperidol administration is detectable with ^{123}I-FP-CIT SPECT. . . . . ***Page 647***

Targeted anti-HER2 Nanobody: Pruszynski and colleagues evaluate the tumor-targeting potential of an anti–human epidermal growth factor receptor type 2 Nanobody conjugate with promise for PET and SPECT imaging and for targeted radiotherapy. . . . . ***Page 650***

Oxidative stress PET imaging: Webster and colleagues report on the synthesis and in vivo validation of ^{18}F-5-fluoro-aminosuberic acid, a PET tracer with potential for functional imaging of cellular response to oxidative stress in tumors. . . . . ***Page 657***

^{89}Zr-labeled anticalin and oncogene targeting: Terwisscha van Scheltinga and colleagues describe engineering of anticalin PRS-110 to target the oncogene MET, visualization of MET expression, and biodistribution in human tumor–bearing mice. . . . . ***Page 665***

^{18}F-ASEM PET imaging of α7-nAChR: Horti and colleagues evaluate the potential of a novel ^{18}F-labeled tracer for PET quantification of α7-nicotinic cholinergic receptor in the living brain. . . . . ***Page 672***

HDACI-mediated cancer targeting: Hsieh and colleagues report on a novel reporter gene system to evaluate the anticancer effect of histone deacetylase inhibitors on cancer cells, with relevance to multiple molecular imaging modalities. . . . . ***Page 678***

Imaging metastasis and heterogeneity: Fruhwirth and colleagues detail the development of a new whole-body nano-SPECT/CT longitudinal model for in vivo imaging of spontaneous cancer cell metastases and heterogeneous tumor responses to drug treatment. . . . . ***Page 686***