

Discussions with leaders: Oliver Sartor talks with Thomas Hope, Jeremie Calais, and Wolfgang Fendler about FDA approval of ^{68}Ga -PSMA-11 for PET imaging of prostate-specific membrane antigen-positive lesions in men with prostate cancer. **Page 146**

^{68}Ga -PSMA-11 NDA approval: Carlucci and colleagues describe the background and regulatory pathway for the academic-led New Drug Applications that facilitated FDA approval of this agent and outline implications for the larger PET community. **Page 149**

Real-world data in nuclear medicine: Bourla and Herrmann look at the promise and challenges of using information generated directly from medical practice, including electronic health records, to answer research questions and address evidence gaps. **Page 156**

^{11}C dosimetry scans: Zanotti-Fregonara and colleagues suggest that performance of ^{11}C dosimetry scans for new tracers should be abandoned in both animals and humans and replaced by a standard average dose of $5\ \mu\text{Sv}/\text{MBq}$ **Page 158**

FAP imaging: Altmann and colleagues review the mechanisms, recent development, and future promise of fibroblast activation protein-targeting agents in radionuclide-based approaches to diagnosis and treatment of tumors and for diagnosis of nonmalignant diseases associated with extracellular matrix remodeling. **Page 160**

Quantitative nuclear cardiology: Slomka and colleagues provide the second in a series of educational overviews of the current state of quantitative clinical nuclear cardiology, here focusing on the roles of emerging and evolving analytic tools and their applications. **Page 168**

Breast cancer bone assessment: van Es and colleagues compare management recommendations based on bone lesion assessment by ^{18}F -FDG PET or $^{99\text{m}}\text{Tc}$ bone scintigraphy, each with contrast-enhanced CT, in patients with newly diagnosed metastatic bone cancer. **Page 177**

^{18}F -FES PET in endocrine sensitivity: Peterson and colleagues explore the use of ^{18}F -fluoroestradiol PET imaging to elucidate the pharmacodynamics associated with histone deacetylase inhibitors and reduction of endocrine

resistance in estrogen receptor-positive metastatic breast cancer. **Page 184**

Immunotherapy response in mesothelioma: Ferdinandus and colleagues compare the prognostic value of volumetric PET response assessment with that of conventional criteria in patients receiving high-dose pembrolizumab for chemotherapy-resistant malignant mesothelioma. **Page 191**

^{18}F -FAC PET drug delivery imaging: Russell and colleagues correlate tumor ^{18}F -FAC PET images with ^{14}C -gemcitabine levels in mouse models of pancreatic cancer and determine whether changes in gemcitabine can be tracked with this imaging technique. **Page 195**

FAPI-74 biodistribution: Giesel and colleagues describe evaluation of ^{18}F -fibroblast activation protein inhibitor-74 in patients with lung cancer and document proof of mechanism for ^{68}Ga -FAPI-74 labeled at ambient temperature. **Page 201**

^{18}F -PSMA-1007 PET/CT accuracy: Sprute and colleagues determine the diagnostic accuracy of ^{18}F -PSMA-1007 PET/CT imaging for N-staging of prostate cancer initially and for assessment of nodal recurrence. **Page 208**

^{68}Ga -PSMA for staging in prostate cancer: Klingenberg and colleagues characterize the metastatic spread of prostate cancer in relation to tumor ^{68}Ga -PSMA uptake and the D'Amico classification and compare primary staging results from ^{68}Ga -PSMA PET/CT and histopathology. **Page 214**

Intraarterial ^{90}Y -DOTATOC PRRT: Lawhn-Heath and colleagues investigate whether hepatic intraarterial administration of ^{90}Y -DOTATOC peptide receptor radionuclide therapy increases treatment efficacy while reducing systemic toxicity in neuroendocrine tumor patients with liver-dominant metastases. **Page 221**

^{225}Ac -PSMA RNT and PD-1 blockade: Czernin and colleagues combine prostate-specific membrane antigen-targeted radionuclide therapy and immunotherapy to increase tumor immunogenicity in a mouse model of prostate cancer. **Page 228**

Anti-P-cadherin radioimmunotherapy: Funase and colleagues detail the preclinical pharmacokinetics and pharmacology of FF-21101, an ^{111}In - or ^{90}Y -conjugated monoclonal antibody against P-cadherin, to evaluate potential clinical applications. **Page 232**

^{18}F -Flortaucipir PET in neurodegeneration: Hammes and colleagues research the ability of ^{18}F -flortaucipir PET to assess tau positivity as well as to differentiate between amyloid-positive and -negative forms of neurodegeneration on the basis of imaging signatures. **Page 240**

Amyloid- β positivity and ^{18}F -AZD4694: Theriault and colleagues analyze several methods for determining an optimal cutoff for ^{18}F -AZD4694 PET positivity as a quantitative discriminator in neurodegeneration. **Page 247**

MAO-B PET tracer ^{18}F -SMBT-1: Harada and colleagues report on development and preclinical assessment of this promising and selective monoamine oxidase-B PET tracer candidate and discuss potential utility in quantitative monitoring of astrogliosis in the human brain. **Page 253**

PET imaging of GluN2B subunits: Ahmed and colleagues investigate *ortho*-fluorinated and *meta*-fluorinated analogs of ^{18}F -*para*-fluorinated-NB1, a PET probe targeting the GluN2B subunits of the *N*-methyl-D-aspartate receptor, with imaging potential in amyotrophic lateral sclerosis and other brain disorders. **Page 259**

^{68}Ga -FAPI PET/CT in IgG4-related disease: Luo and colleagues detail preliminary results from a prospective cohort study evaluating the performance of ^{68}Ga -fibroblast activation protein inhibitor PET/CT in comparison with ^{18}F -FDG PET/CT in IgG4-related disease. **Page 266**

Dose-effect ^{166}Ho radioembolization: Roekel and colleagues explore the relationship between dose and effect (i.e., response and toxicity) in colorectal cancer patients treated with ^{166}Ho radioembolization. **Page 272**

VLA-4 imaging in ALI: Haddad and colleagues evaluate targeted imaging of very late antigen-4, a key integrin mediating adhesion and recruitment of immune cells to inflamed tissues, in quantification of inflammation in a mouse model of acute lung injury. **Page 280**

Ultra-fast list-mode reconstruction: Spangler-Bickell and colleagues present an infrastructure with which ultra-fast list-mode reconstructions of short PET frames ($\leq 1\ \text{s}$) can be performed, producing dynamic series that can be used (among other applications) for real-time display of reconstructed data. **Page 287**