

FROM THE LITERATURE

Each month the editor of *Newsline* selects articles on diagnostic, therapeutic, research, and practice issues from a range of international publications. Most selections come from outside the standard canon of nuclear medicine and radiology journals. These briefs are offered as a monthly window on the broad arena of medical and scientific endeavor in which nuclear medicine now plays an essential role. The lines between diagnosis and therapy are sometimes blurred, as radiolabels are increasingly used as adjuncts to therapy and/or as active agents in therapeutic regimens, and these shifting lines are reflected in the briefs presented here. We have also added a small section on noteworthy reviews of the literature.

PET/CT and Giant Cell Arteritis

Sammel et al. from the Royal North Shore Hospital, the University of Sydney, Prince of Wales Hospital Randwick, Royal Prince Alfred Hospital Camperdown, Sydney Eye Hospital, and the University of Sydney Lidcombe (all in Sydney, Australia) reported on March 8 ahead of print in *Arthritis & Rheumatology* on a study assessing ^{18}F -FDG PET/CT as a first-line test for giant cell arteritis (GCA). The study reported on data from the Giant Cell Arteritis and PET Scan (GAPS) trial on the accuracy of PET/CT of the head, neck, and chest in GCA. Sixty-four patients with newly suspected GCA were included, each of whom underwent time-of-flight PET/CT (1-mm slice thickness) from the vertex to the diaphragm. Images were acquired within 72 h of initiating corticosteroid therapy and before temporal artery biopsy. Imaging results were reported as globally positive or negative for GCA, and ^{18}F -FDG uptake was graded across 18 artery segments. Results were compared with clinical diagnoses at 6-mo follow-up. Fifty-eight patients underwent temporal artery biopsy, with 12 (21%) positive for GCA. Clinical diagnosis at 6 mo found 21 to have a clinical

diagnosis of GCA. Using biopsy results as the comparator, PET/CT had a sensitivity of 92% and specificity of 85%. Using clinical diagnosis as the comparator, PET/CT had a sensitivity of 71% and specificity of 91%. In addition, 20% of patients were found to have clinically relevant incidental findings on PET/CT, including 7 infections and 5 malignancies. Five of the 12 patients with biopsy results positive for GCA also had moderate or marked aortitis. The authors concluded that “the high diagnostic accuracy of this PET/CT protocol would support its use as a first-line test for GCA.” The high negative predictive value also suggested specific utility for PET/CT in ruling out GCA in lower-risk patients. The benefit of PET/CT over biopsy in detecting vasculitis mimics and aortitis was also noted.

Arthritis & Rheumatology

PSMA PET/CT-Guided RT in Oligometastatic PCA

In an article e-published on March 1 ahead of print in the *World Journal of Urology*, Artigas et al. from the Université Libre de Bruxelles (Belgium) reported on a retrospective study designed to assess the efficacy of directed oligometastatic radiotherapy based on ^{68}Ga -prostate-specific antigen (^{68}Ga -PSMA) PET/CT imaging in patients with biochemical relapse of prostate cancer after primary treatment with curative intent. The study included such 20 patients (median prostate-specific antigen [PSA], 1.4 ng/mL) who met the criteria of histologically proven prostate cancer, biochemical relapse after primary treatment with curative intent, and oligometastatic disease (defined as ≤ 3 metastatic lesions). Biochemical response to radiation treatment, defined as a $>50\%$ decrease in PSA was measured at 1 and 4 mo, with follow-ups until progression and start of androgen deprivation therapy. Biochemical relapse-free and androgen deprivation therapy-free survival rates were calculated as endpoints. Thirty PSMA-positive lesions

were treated in the 20 patients: 18 lymph nodes (60%), 9 bone lesions (30%), and 3 visceral lesions (10%). Patients were followed up at a median of 15 mo (range, 4–33 mo) after treatment. At 1-mo follow-up 3 patients (15%) showed biochemical response, and at 4 mo biochemical response was seen in 14 patients (70%). The biochemical relapse-free survival rate at 1 y was 79% and at 2 y was 53%. Androgen deprivation therapy-free survival at 2 y was 74%. The authors concluded that these results suggest that “metastasis-directed radiation therapy based on ^{68}Ga -PSMA PET/CT may be a valuable treatment in patients with prostate cancer oligometastatic disease, providing promising biochemical relapse-free survival rates and potentially postponing androgen deprivation therapy for at least 2 y in 74% of the patients.” They also cautioned that response assessment should not be measured before 4 mo after treatment.

World Journal of Urology

Serial ^{18}F -FDG PET in Cardiac Sarcoidosis

Ning et al. from Stanford University School of Medicine (CA) and the Oregon Health and Science University School of Medicine (Portland) reported on February 27 ahead of print in the *Journal of Cardiac Failure* on their experience in using serial ^{18}F -FDG PET for diagnosis and management of patients with cardiac sarcoidosis, with a focus on its utility in immunosuppression management. The retrospective study included records of 34 patients diagnosed with cardiac sarcoidosis. Of these, 16 (47%) presented with heart block, 12 (35%) with heart failure, and 14 (41%) with ventricular arrhythmias. Patients underwent serial PET scanning and were followed for a median of 2.3 y. PET imaging was beneficial at initial diagnosis in 21 (62%) patients. A total of 128 PET scans were performed (median, 3 per patient), with 94 (73%) resulting in a change in therapy and 42 (33%) proving to be instrumental in tapering

prednisone dosages. Of those patients on prednisone, the mean dose at 1 y was 9.5 mg/d. Over the follow-up period, 48% of patients were successfully weaned off prednisone and 20% were weaned to a maintenance dosage of 5–10 mg/d. Transplant-free survival over the course of the analysis was 88%. The authors concluded that the “use of serial cardiac FDG PET for the diagnosis and management of cardiac sarcoidosis was critical for guiding immunosuppression management and resulted in low chronic steroid doses and good disease control within 1 y of diagnosis.”

Journal of Cardiac Failure

Age and Tau PET Uptake in Atypical AD

In an article e-published on March 7 ahead of print in *Alzheimer's & Dementia*, Whitwell et al. from the Mayo Clinic (Rochester, MN) reported on a study calculating regional tau and β -amyloid PET SUV ratios and gray matter volumes in a group of 42 individuals with atypical Alzheimer disease (AD). Using a Bayesian hierarchical linear model, age was found to be strongly associated with tau uptake across all cortical regions, particularly in the parietal lobe, with greater uptake in younger participants. Younger age was also associated with smaller parietal and lateral temporal volumes, but regional β -amyloid accumulation did not differ significantly with age. Age was found to have a stronger association with tau than with volume or β -amyloid in all cortical regions. In this study, age was not associated with cognitive performance. The authors concluded that “age is an important determinant of severity of cortical tau uptake in atypical AD, with young participants more likely to show widespread and severe cortical tau uptake.”

Alzheimer's & Dementia

PiB vs Florbetapir in Cross-Sectional and Longitudinal Studies

Su, from the Banner Alzheimer's Institute (Phoenix, AZ) and a consortium of authors from the United States,

Canada, Australia, France, the United Kingdom, and Switzerland reported on February 22 ahead of print in *Alzheimer's & Dementia (Amsterdam, The Netherlands)* on a direct comparison of ^{11}C -Pittsburgh compound B (PiB)-based and ^{18}F -florbetapir-based amyloid imaging in participants from 2 independent cohorts of autosomal dominant and sporadic Alzheimer disease (AD) using a crossover design. All comparisons in the study were made using the Centiloid scale, which is intended to standardize PET-based amyloid burden measurements to facilitate comparison of results from different research groups. The resulting mean and inter-individual variabilities of the 2 tracers were compared using multivariate linear models both cross-sectionally and longitudinally. Although global amyloid burden measured using the 2 tracers was strongly correlated in the cohorts, higher variability was seen with florbetapir. Amyloid burden as measured with both tracers was found to be correlated with clinical and psychometric measurements. In addition, the authors also compared the 2 tracers using longitudinal data acquired on 2 similar but separate cohorts of sporadic AD spectrum participants (i.e., with elevated amyloid load). No significant difference was detected in the average annualized rate of change as measured by the 2 tracers. The authors concluded that “although the amyloid burden measurements were quite similar using these 2 tracers as expected, difference was observable even after conversion into the Centiloid scale” and that “further investigation is warranted to identify optimal strategies to harmonize amyloid imaging data acquired using different tracers.”

Alzheimer's & Dementia (Amsterdam, The Netherlands)

^{18}F -FES PET/CT and ER Status in Breast Cancer

In an article e-published on March 4 ahead of print in *Lancet Oncology*, Chae et al. from the University of Ulsan College of Medicine (Seoul and Gangneung, South Korea) reported on the diagnostic accuracy and safety of 16α - ^{18}F -fluoro-17 β -estradiol (^{18}F -FES) PET/CT

in estrogen receptor (ER) status assessment in patients with recurrent or metastatic breast cancer. The prospective study included 93 patients with first recurrence or metastatic disease (55% ER-positive and 45% ER-negative) at presentation, who were ≥ 19 y old, and had an Eastern Cooperative Oncology Group performance status of 0–2. Imaging results were compared with ER expression on immunohistochemical assay. Ninety patients underwent whole-body ^{18}F -FES PET/CT imaging, and ^{18}F -FES uptake above background intensity was interpreted as positive. Efficacy was assessed in all patients in whom histology confirmed recurrent or metastatic breast cancer with available PET/CT (total, 85; intention-to-diagnose analysis). Correlation between ^{18}F -FES PET/CT findings and ER status by immunohistochemistry assay was 76.6%. Negative status agreement was 100%. Patients who were ER positive with positive ^{18}F -FES PET/CT results (23 of 30 patients) were found to have significantly higher progesterone receptor expression than those who were ER positive but with negative ^{18}F -FES PET/CT results (0 of 11 patients). Ten percent of patients experienced procedural pain, but no adverse events related to the ^{18}F -FES were noted except injection site pain in a single patient. The authors concluded that “the high negative percent agreement between ^{18}F -FES PET/CT and ER status by immunohistochemical assay in this cohort suggests that positive ^{18}F -FES uptake by recurrent or metastatic ER-positive breast cancer lesions could be an alternative to ER assays in this setting.” They added that staging assessment should include ^{18}F -FES PET/CT when retesting ER status is not feasible.

Lancet Oncology

PET/CT and Articular Involvement in Polymyalgia Rheumatica

Kaneko et al. from the Fukuoka Memorial PET Imaging and Medical Checkup Center, the National Hospital Organization Kyushu Medical Center, and Fukuoka Memorial Hospital (all in Fukuoka, Japan) reported on March 7 ahead of print in *Modern Rheumatology*

on a study designed to use ^{18}F -FDG PET/CT to clarify differences in incidences of articular and extraarticular involvement in patients with polymyalgia rheumatica. The retrospective study included data from 20 such patients in whom frequency, degree, and patterns (diffuse or nondiffuse) of abnormal tracer accumulation in the proximal and distal articular structures and extraarticular synovial structures were assessed. Regional analyses were also performed for the large joints (shoulder, hip, and knee). Incidences of positive ^{18}F -FDG accumulation were significantly higher in proximal articular structures (96.7%) and extraarticular synovial structures (91.4%) than in distal articular structures (31.8%). Regional incidence in the knees was found to be quite high (96.2%). Proximal articular structures and extraarticular synovial structures both had significantly higher visual scores than did distal articular structures. Regional incidences showed different accumulation patterns in each joint area, with strong ^{18}F -FDG accumulation in the medial-to-subscapular part of shoulder joints, the lateral part of hip joints, and the medial part of knee joints.

Modern Rheumatology

Diabetic and Nondiabetic Pancreatic Uptake on ^{18}F -FDG PET/CT

In an article published on March 19 in *PloS One* (2019;14[3]:e0213202) Bakker et al. from the Amsterdam University Medical Centers (The Netherlands), the University of British Columbia (Vancouver, Canada), and the University of Gothenburg (Sweden) reported on a retrospective cross-sectional ^{18}F -FDG PET/CT study assessing pancreatic uptake in patients with type 2 diabetes and controls. The study included 20 patients with type 2 diabetes and 65 controls, each of whom had undergone a diagnostic ^{18}F -FDG PET/CT scan with available SUVs for pancreas and muscle. Pancreatic SUVs were adjusted for background uptake in muscle and for fasting blood glucose concentrations. After these adjustments, maximum pancreatic SUVs and $\text{SUV}_{\text{glucose}}$ were significantly higher in diabetic pa-

tients than controls. After linear regression adjustment for age and body mass index, diabetes remained the main predictor of SUV_{max} and $\text{SUV}_{\text{glucose}}$. The authors concluded that these results suggest that “ ^{18}F -FDG PET/CT might be a viable tool for in vivo visualization of pancreatic inflammation in diabetes, which could offer “a promising novel way to gain more insight in the processes underlying β cell dysfunction in type 2 diabetes in prospective and intervention studies.”

PloS One

^{18}F -FDG–Labeled Peptides for Apoptosis Imaging

Khoshbakht et al. from the Shahid Beheshti University of Medical Sciences and the Tehran University of Medical Sciences (both in Tehran, Iran) reported on March 5 in *Cancer Biotherapy and Radiopharmaceuticals* on the design, synthesis, radiolabeling, and evaluation of 3 ^{18}F -FDG–labeled targeting peptide analogs of Leu-Ile-Lys-Lys-Pro-Phe (LIKKP) for early apoptosis imaging. The authors detailed in vitro evaluation of biologic properties, finding that the ^{18}F -FDG-Aoe-LIKKP-Pyr-F peptide showed highest affinity for apoptotic cells. In vivo studies with this peptide in an apoptotic mouse model showed intended localization in the liver, which was verified in biodistribution and PET/CT studies. The authors concluded that “Aoe-LIKKP-Pyr-F peptide is an auspicious agent for molecular imaging of apoptosis.”

Cancer Biotherapy and Radiopharmaceuticals

PET vs MR Imaging for Spondylodiscitis Detection

In an article published on April 1 in *Spine (Phila Pa 1976)* Kim et al. from Pusan National University Yangsan Hospital and the Pusan National University Hospital Busan (both in the Republic of Korea) reported on the results of a metaanalysis comparing the diagnostic accuracies of ^{18}F -FDG PET/CT and MR imaging in detection of spondylodiscitis. The MEDLINE and EMBASE databases were searched for all studies comparing the 2 modalities in this set-

ting, and the authors then determined sensitivities and specificities across studies, calculated positive and negative likelihood ratios, and constructed summary receiver operating characteristic curves. A total of 7 studies (212 patients) met the criteria of the analysis and yielded pooled sensitivity and specificity of 95% and 88%, respectively, for PET. PET showed an overall positive likelihood ratio of 7.6, a negative likelihood ratio of 0.05, and a pooled diagnostic odds ratio of 141. The pooled sensitivity and specificity of MR imaging were 85% and 66%, respectively. The likelihood ratio syntheses for MR imaging showed an overall positive likelihood ratio of 2.5, negative likelihood ratio of 0.22, and a pooled diagnostic odds ratio of 11. In additional analyses, no variable was identified as the source of differences between the 2 modalities. The authors concluded that their metaanalysis showed that “ ^{18}F -FDG PET has better diagnostic accuracy than MR imaging for the detection of spondylodiscitis” and noted that larger prospective multicenter studies would be necessary to verify the relative diagnostic accuracies of the 2 modalities for spondylodiscitis.

Spine (Phila Pa 1976)

PSMA-Targeted Radiotracers for PCa Biochemical Recurrence

Tan et al. from Loma Linda University Medical Center (CA), University of California, Riverside School of Medicine, University of California Los Angeles Molecular and Medical Pharmacology, the National Cancer Institute (Bethesda, MD), and Michigan Medicine (Ann Arbor) reported on February 25 ahead of print in the *Journal of Urology* on a study reporting the results of a systematic review and metaanalysis of reports of detection of biochemical recurrence after definitive therapy for prostate cancer using prostate-specific membrane antigen (PSMA)–targeted radiotracers. For the systematic review, articles were included from the PubMed and EMBASE databases from 2012 to 2018 that evaluated men with biochemical recurrence of prostate cancer after

definitive therapy who were without known metastatic disease and who underwent PSMA PET/CT for detection of recurrent disease. Reference standards were pathology, follow-up imaging, or prostate-specific antigen (PSA) decline after salvage treatment. Forty-three studies with a total of 5,113 patients met the criteria. The median PSA over all studies was 1.6 ng/mL, and the median age was 68 y. Fifteen studies (34.8%) were prospective, and 28 (65.2%) were retrospective. Only 3 were multi-institutional, and the rest were reported from a single institution. Eighteen (41.8%) of the studies were conducted in patients after radical prostatectomy, 2 (4.6%) were in patients after radiation treatment, and 23 (53.5%) were in patients after both prostatectomy and radiation. Thirty-three (76.7%) of the studies used ^{68}Ga -PSMA-11 PET/CT. The pooled detection rate was 70.2% for the entire cohort. When stratified by PSA, pooled detection rates were 44.9% for levels <0.5 ng/mL, 61.3% for levels 0.5–0.9 ng/mL, 78.2% for 1–1.9 ng/mL, and 93.9% for ≥ 2 ng/mL. The authors concluded that “PSMA-targeted radiotracers are likely effective for the detection of biochemically recurrent prostate cancer at low PSA level” but that “existing studies are limited by retrospective designs, limited reference standards, publication bias, and lack of interagent comparison.”

Journal of Urology

PET and PET/MR Imaging in Alveolar Echinococcosis

In an article e-published on March 9 ahead of print in *Tropical Medicine and International Health*, Lötsch et al. from the Medical University of Vienna (Austria), the Centre de Recherches Médicales de Lambaréné (Gabon), the University of Tübingen (Germany), and University Medical Center Hamburg-Eppendorf (Germany) reported on initial clinical experience with comparative ^{18}F -FDG PET/CT and PET/MR imaging in 4 patients with alveolar echinococcosis at an Austrian referral center. Hybrid PET/MR and PET/CT imaging showed comparable diagnostic accuracy for liver lesions attributable to echinococcosis

multilocularis infection, with a significant discrepancy only in assessment of calcifications in a single patient. Biologic effective radiation doses were 30.4–31 mSv for PET/CT and 4.9–5.5 mSv for PET/MR. The authors concluded that because PET/MR imaging provides comparable diagnostic information to that of PET/CT for alveolar echinococcosis management, the reduction of radiation exposure with PET/MR imaging “may be of particular importance for children and young patients not amenable for curative surgery requiring repeated long-term follow-up with dual imaging modalities.” They concluded that additional studies are needed to prospectively evaluate the potential of PET/MR imaging in management of these patients.

Tropical Medicine and International Health

PET/CT and Disease Activity in Inflammatory Myopathies

Matuszak et al. from University Hospitals of Strasbourg/Strasbourg University (France), the ICube Joint Research Unit 7357 (Illkirch-Graffenstaden, France), and the National Center for Rare Systemic Autoimmune Diseases (Paris, France) reported on March 8 ahead of print in *Rheumatology (Oxford)* on a study describing the development and validation of a simple PET/CT score for measurement of muscle disease activity in patients with inflammatory myopathies. The retrospective imaging data analysis used a total of 44 PET/CT examinations performed during cancer screening in 34 patients with inflammatory myopathies and 20 PET/CT examinations in matched controls (acquired as assessment for pulmonary nodules that were determined to be benign). Maximum SUVs (SUV_{max}) were recorded bilaterally in 8 proximal muscles. Muscle SUV_{max} was defined as the average of the 16 muscle SUV_{max} values, normalized on the liver mean SUV. Reliability, validity, and responsiveness were also evaluated. The muscle SUV_{max} was found to be increased in patients with inflammatory myopathies. This allowed identification of patients with high and low muscle disease activity,

using the myositis intention-to-treat activity index as the gold standard. In patients who underwent subsequent disease assessments, the authors’ method showed good accuracy in detecting changes in muscle disease activity, validated by excellent interrater reliability. They concluded that PET/CT is “valuable to measure muscle disease activity and its evolution in inflammatory myopathy patients.”

Rheumatology (Oxford)

Therapy Effect on Disease Activity Assessment in Large-Vessel Vasculitis

In an article published on March 15 ahead of print in the *Journal of Rheumatology*, Banerjee et al. from the National Institute of Arthritis and Musculoskeletal and Skin Disease (Bethesda, MD), Georgetown University (Washington, DC), the National Institutes of Health Clinical Center (Bethesda, MD), and the University of Pennsylvania (Philadelphia) reported on a study determining the effect of treatment for large-vessel vasculitis on ^{18}F -FDG PET vascular activity in relationship to clinical and serologic-based assessments. The prospective study included 52 patients (31 with giant cell arteritis, 21 with Takayasu arteritis), who were prospectively evaluated at 6-mo intervals in an observational cohort. Treatment changes were made at least 3 mo before the follow-up visit and rated as increased, decreased, or unchanged. ^{18}F -FDG PET, clinical, and serologic assessments were determined at each visit and compared across visits (total of 156 visits for the cohort). When treatment was increased, significant reduction in disease activity was seen on imaging, clinical examination, and inflammatory markers. When treatment was unchanged, all 3 assessments of disease activity remained relatively unchanged over 6-mo intervals. When treatment was decreased, PET activity significantly increased, but clinical and serologic activity did not show similar changes. Giant cell arteritis treated with tocilizumab and Takayasu arteritis treated with tumor necrosis factor inhibitors resulted in significant improvement in imaging and clinical assessments of

disease activity, although the 2 only rarely both became normal. The authors concluded that “in addition to clinical and serologic assessments, vascular imaging has potential to monitor disease activity in left ventricular vasculitis and should be tested as an outcome measure in randomized clinical trials.”

Journal of Rheumatology

CSF Biomarkers and Amyloid PET in MCI

Spallazzi et al. from the Azienda Ospedaliero-Universitaria (Parma), the Briolini Hospital (Bergamo), Sigmund Freud University (Milan), and the Guglielmo da Saliceto Hospital (Piacenza; all in Italy) reported on March 7 ahead of print in *Acta Neurologica Belgica* on a study investigating the concordance between cerebral spinal fluid (CSF) biomarkers and amyloid PET imaging in a memory clinic cohort. The authors also aimed to determine the diagnostic accuracy of each technique in predicting progression of patients from mild cognitive impairment (MCI) to Alzheimer disease (AD) dementia. The study included 31 patients with MCI who underwent ^{18}F -florbetaben PET and CSF sampling for $\text{A}\beta 1\text{-}42$, t-tau, and p-tau. Amyloid deposition on PET was quantified in 5 brain regions and rated from 1 (negative) to 2 and 3 (positive). The concordance rate was 77% between amyloid PET and CSF cutoff levels for $\text{A}\beta 1\text{-}42$ and 89% between PET and p-tau/ $\text{A}\beta 1\text{-}42$ and t-tau/ $\text{A}\beta 1\text{-}42$. When compared with data from clinical follow-up, PET, with a sensitivity of 93.7% and specificity of 80%, showed the best diagnostic accuracy in discriminating AD from non-AD, followed by the p-tau/ $\text{A}\beta 1\text{-}42$ ratio and

t-tau/ $\text{A}\beta 1\text{-}42$ ratio (sensitivity, 93.7%; specificity, 66.6%) and $\text{A}\beta 1\text{-}42$ levels (sensitivity, 81%; specificity 60%). Regional uptake of ^{18}F -florbetaben on PET in the precuneus and striatum showed the best specificity at 86.6%. In cases in which CSF biomarkers and PET findings were discordant, the clinical diagnosis was most often in agreement with PET. The authors concluded that, in general, “concordance between CSF biomarkers and amyloid PET was good, especially when the ratios between CSF amyloid and tau biomarkers were used” but that amyloid PET “proved to be superior to CSF $\text{A}\beta 1\text{-}42$ in terms of diagnostic accuracy for AD, with the possibility to further increase its specificity by focusing the analysis in specific areas such as the precuneus/posterior cingulate cortex and the striatum.”

Acta Neurologica Belgica

Reviews

Review articles provide an important way to stay up to date on the latest topics and approaches through valuable summaries of pertinent literature. The Newsline editor recommends several general reviews accessioned into the PubMed database in February and March. In an article published on March 18 in *Current Cardiology Reports* (2019;21[5]:34) Pelletier-Galameau and Ruddy from the Université de Montréal (Canada), Massachusetts General Hospital/Harvard Medical School (Boston, MA), and the University of Ottawa Heart Institute (Canada) summarized the current state of practice with “PET/CT for diagnosis and management of large-vessel vasculitis.” Weatherley et al. from the University of Sheffield/Sheffield Teaching Hospitals Foundation Trust (UK) and the Mayo Clinic Minnesota

(Rochester) reported on “Experimental and quantitative imaging techniques in interstitial lung disease” in an article e-published on March 18 ahead of print in *Thorax*. “Novel PET tracers: Added value for endocrine disorders” was the topic of an article e-published on March 14 ahead of print in *Endocrine* by Bergeret et al. from the Sorbonne University/Pitié-Salpêtrière Hospital (Paris, France). Chew and Atassi from the Massachusetts General Hospital/Harvard Medical School (Boston, MA) reviewed “Positron emission tomography molecular imaging biomarkers for amyotrophic lateral sclerosis” in an article e-published on March 1 in *Frontiers in Neurology*. In an article e-published on March 10 in *Swiss Medical Weekly*, Antwi et al. from University Hospital Basel (Switzerland) provided an overview of “Molecular imaging for neuroendocrine tumours.” Kolla and Houle from the Center for Addiction and Mental Health (Toronto, Canada), the University of Toronto (Canada), and the Waypoint Centre for Mental Health Care (Penetanguishene, Canada) published “Single-photon emission computed tomography and positron emission tomography studies of antisocial personality disorder and aggression: A targeted review” on March 9 in *Current Psychiatry Reports* (2019; 21[4]:24). In an article e-published on February 20 ahead of print in *Trends in Cardiovascular Medicine* Werner et al. from the Johns Hopkins University School of Medicine (Baltimore, MD), University Hospital Würzburg (Germany), and Okayama University (Japan) reviewed “Recent paradigm shifts in molecular cardiac imaging: Establishing precision cardiology through novel ^{18}F -labeled PET tracers.”