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.*

^{18}F-Flutemetamol on PET and Amyloid-ββ Levels

In an article e-published on November 27 ahead of print in *Neuro-Degenerative Diseases*, Rinne et al. from the University of Turku and Turku University Hospital (Finland) reported on a study designed to compare uptake of ^{18}F-flutemetamol on PET imaging with amyloid-β levels measured by immunohistochemical and histochemical staining of tissue from frontal cortical biopsies. The study included 17 patients with probable normal pressure hydrocephalus, each of whom underwent ^{18}F-flutemetamol PET imaging as well as frontal cortical brain biopsy during ventriculoperitoneal shunt procedures. Standardized uptake values for the tracer at the sites of biopsy as well as at contralateral sites were significantly correlated with amyloid-β levels in biopsy specimens. Four (23.5%) of the patients were found to have amyloid-β pathology at biopsy and also showed increased tracer uptake on PET. Visual assessment of the PET images without access to pathology results showed 75% sensitivity and 100% specificity. The authors concluded that ^{18}F-flutemetamol PET "detects brain amyloid-β in vivo and shows promise as a valuable tool to study and possibly facilitate diagnosis of Alzheimer's disease both in patients with suspected normal pressure hydrocephalus and among the wider population."

Neuro-Degenerative Diseases

Comparative Imaging in Spine Metastases

Poulsen et al. from the Odense University Hospital (Denmark) reported on December 9 ahead of print in *BJU International* on a study comparing the diagnostic accuracy of whole-body bone scintigraphy with ^{99m}Tc-methylene diphosphonate with that of ^{18}F-sodium fluoride PET/CT and ^{18}F-fluoromethylcholine (^{18}F-FCH) PET/CT in patients with spine metastases from prostate cancer. MR imaging was used as a comparative standard. The study included 50 men (mean age, 73 y; mean prostate-specific androgen level, 84 ng/mL) with biopsy-proven prostate cancer, positive whole-body scintigraphy consistent with bone metastases, and no history of androgen deprivation therapy. Participants (with 4 exceptions) underwent whole-body scintigraphy, the 2 PET/CT scans, and MR imaging, in random order. A study total of 526 bone lesions was identified, with MR determining 363 to be malignant and 163 to be nonmalignant. Scans were interpreted without reference to MR results or to one another. Sensitivity, specificity, positive and negative predictive values, and percentages of accuracy were 51%, 82%, 86%, 43%, and 61%, respectively, for whole-body scintigraphy; 93%, 54%, 82%, 78%, and 81%, respectively, for ^{18}F-sodium fluoride PET/CT; and 85%, 91%, 95%, 75%, and 87%, respectively, for ^{18}F-FCH PET/CT. The authors concluded that the 2 PET/CT techniques were superior to whole-body scintigraphy in detection of spinal metastases from prostate cancer and noted that these results "question the use of whole-body scintigraphy as the method of choice in hormone-naïve prostate cancer patients."

BJU International

Hybrid Tracer for SN Biopsy in Penile Carcinoma

In an article e-published on November 26 ahead of print in *European Urology*, Brouwer et al. from the Antoni van Leeuwenhoek Hospital (Amsterdam, The Netherlands) and the Leiden University Medical Center (The Netherlands) reported on a study exploring the added value of sentinel lymph node biopsy using a hybrid radioactive and fluorescent tracer indocyanine green (ICG)-^{99m}Tc-nanocolloid agent for both preoperative mapping and intraoperative guidance in patients with penile carcinoma. The study included 65 men with penile squamous cell carcinoma who underwent preoperative sentinel node mapping with lymphoscintigraphy and SPECT/CT after peritumoral injection of ICG-^{99m}Tc-nanocolloid. At surgery, all patients underwent sentinel node biopsy and excision of primary tumor, with portable γ camera assessment of excision. Sentinel nodes were first located with a γ probe, then by blue dye and/or fluorescence imaging. ICG-^{99m}Tc-nanocolloid–based preoperative imaging mapped sentinel nodes in all patients (total of 183 sentinel nodes in 119 groins). Each of these sentinel nodes was localized with the combination of radiolabeled, fluorescent, and/or blue dye guidance. However, only 55.7% of sentinel nodes were identified by blue dye alone, whereas fluorescence imaging visualized 96.8% of sentinel nodes. The authors noted that detection sensitivity was limited in fluorescent imaging by tissue penetration and in blue dye by rapid flow. They concluded that "ICG-^{99m}Tc-nanocolloid allows for both preoperative sentinel node mapping and combined radio- and fluorescence-guided sentinel node biopsy in penile carcinoma patients and significantly improves optical sentinel node detection compared with blue dye."

European Urology

^{18}F-FDG-PET/CT and FUO

Tokmak et al. from the American Hospital (Istanbul, Turkey) reported on December 1 ahead of print in the *International Journal of Infectious Diseases* on a study evaluating the potential clinical utility of ^{18}F-FDG PET/CT in identification of underlying causes of fever of unknown origin (FUO). The study included 50 patients (27 males, 23 females; ages, 16–88 y) with diagnoses of FUO based on revised definition criteria. Each patient underwent a series of laboratory and pathology assessments, and a subset of 25 patients (12 males, 13 females; ages 16–88 y) underwent ^{18}F-FDG PET/CT imaging. Results from 4 of these patients were excluded from final analyses. PET/CT was able to accurately detect the cause of FUO in 15 (60%) patients, including localized infection (n = 7), noninfective inflammatory processes (n = 5), and malignancy (n = 3). The accuracy, sensitivity, and specificity of PET/CT overall were 90.5%, 93.8%, and 80%, respectively. The authors concluded that these results "lend support to the inclusion of this imaging modality in the initial diagnostic work-up of patients with suspected FUO."

International Journal of Infectious Diseases

^{18}F-FDOPA PET and Glioblastoma Recurrence

In an article e-published on December 4 ahead of print in *Neuro-Oncology*, Herrmann et al. from the University of California Los Angeles and the Universitätsklinikum Würzburg (Germany) reported on a study comparing visual and semiquantitative analysis parameters for detection of glioblastoma recurrence and assessing the correlation of these parameters with progression-free survival. The study included 110 patients (72 male, 38 female) with suspected tumor recurrence, each of whom underwent ^{18}F-FDOPA PET imaging. PET studies were analyzed visually by readers on a 5-point scale and semiquantitatively as lesion-to-striatum and lesion-to-normal brain tissue ratios using standardized uptake values. Results were compared for accuracy with histopathology findings and clinical follow-up. The researchers found that accuracies for detection of glioblastoma recurrence were similar for the visual (82%) and semiquantitative (range, 77%–82%) approaches and that both were significant predictors of progression-free survival. Although mean lesion-to-normal brain tissue ratios offered the best discriminating data on mean survival, none of the study parameters provided statistically significant predictions for overall survival. The authors added that these retrospectively established analysis parameters should be confirmed prospectively in new studies.

Neuro-Oncology

^{11}C-PiB and FDG PET in Dementia

Sánchez-Juan et al. from the Spanish research network IFIMAV and the Centro de Investigación Biomédica en Red Sobre Enfermedades Neurodegenerativas (Santander, Spain); the University of California, San Francisco; the University of California, Berkeley; Lawrence Berkeley National Laboratory (CA); the University of Pennsylvania (Philadelphia), and the University of California Los Angeles reported on December 18 ahead of print in *Neurology* on a study comparing the effects of ^{11}C-Pittsburgh compound B (^{11}C-PiB) and ^{18}F-FDG PET imaging on clinical decision making in dementia assessment. The study included 140 cognitively impaired individuals (mean age, 65 y; 46% with diagnoses including primary amyloid-β involvement), each of whom underwent ^{11}C-PiB PET imaging as well as clinical evaluation before and after the scan. All patients (with the exception of 6) also underwent concurrent ^{18}F-FDG PET. The researchers looked at changes in imaging results, diagnoses, and management before and after imaging. In addition, pathologic material was available for postmortem diagnoses in 24 (17%) participants. Agreement between ^{11}C-PiB and ^{18}F-FDG PET results and baseline diagnoses was high (84% and 82%, respectively). Overall, the primary diagnosis changed after PET imaging in only 13 (9%) individuals; however, 5 of these 13 had been considered diagnostically challenging before imaging. After analysis, only ^{11}C-PiB PET findings that were discordant with clinical baseline assessments were found to be associated with changes in treatment. Both PET tracers showed strong correlation with postmortem diagnoses. The authors concluded that although discordant ^{11}C-PiB had a greater effect on diagnosis and management change than discordant ^{18}F-FDG, "prospective studies are needed to better characterize the clinical role of amyloid PET."

Neurology

Fractionated ^{90}Y-IT RIT in Follicular Lymphoma

In an article e-published on December 2 ahead of print in the *Journal of Clinical Oncology*, Illidge et al. from the University of Manchester (UK) and a consortium of hospitals in the UK and France reported on an international, multicenter phase II trial to evaluate the efficacy and toxicity of fractionated ^{90}Y-ibritumomab tiuxetan (^{90}Y-IT) as initial therapy for follicular lymphoma (FL). The study included 74 patients (median age, 61 y; range, 28–80 y) with FL (78% with stage III–IV disease, 32% with intermediate disease; 44% considered high risk) who were scheduled for initial therapy. Treatment included 2 administrations of ^{90}Y-IT separated by 8–12 wk. Patients with >20% lymphoma infiltration of bone marrow received 1 infusion of rituximab/wk for 4 consecutive wk and then received fractionated radioimmunotherapy (RIT) only after repeat bone marrow biopsy showed <20% lymphoma infiltration. Sixty-eight (94.4%) of 72 evaluable patients showed initial overall response rates, with a combined complete response in 42 (58.3%) patients. When 9 additional patients improved, the overall response rate rose to 95.8% and the combined complete response rate to 69.4%. Patients were followed

for a median of 3.1 y (range, 0.2–5.2 y), with estimated 3-y progression-free survival at 58% (median, 40.2 mo), treatment-free survival at 66%, and overall survival at 95%. At the time of the report, 30 patients had experienced disease progression and 24 had undergone additional treatment. The RIT was well tolerated, with only 2.8% grade 3 or 4 infection episodes and/or adverse events. The authors concluded that "fractionated RIT using ^{90}Y-IT is an effective initial treatment for advanced-stage FL in patients with higher tumor burden requiring treatment."

Journal of Clinical Oncology

^{18}F-Florbetapir PET and Neuropathologic Heterogeneity

Dugger et al. from Avid Radiopharmaceuticals (Philadelphia, PA), Banner Sun Health Research Institute (Sun City, AZ), Biospective Inc. and Montreal Neurological Institute (Canada), McGill University (Montreal, Canada), Duke University Medical Center (Durham, North Carolina), Banner Alzheimer's Institute (Phoenix, AZ), Nova SE University (Ft Lauderdale, FL), and Rush University Medical Center (Chicago, IL) reported in the January issue of the *Journal of Neuropathology and Experimental Neurology* (2014;73:72–80) on a study designed to determine whether and how PET amyloid imaging in Alzheimer disease (AD) is affected by concurrent and therefore heterogeneous brain pathologies. The study included 28 clinically and pathologically defined individuals with AD and 17 nondemented patients. All patients underwent ^{18}F-florbetapir PET. Their brains were examined after death for histologic amyloid-β quantification and neuropathology. Results from patients with AD were categorized on the basis of concurrent pathologies, including those with Lewy bodies (n = 21), white matter rarefaction (n = 27), severe cerebral amyloid angiopathy (n = 11), argyrophilic grains (n = 5), and transactive response DNA binding protein-43 inclusions (n = 18). In 6 cortical regions of interest, imaging results were used to calculate the ratio of cortical to cerebellar amyloid signal (SUVr), and corresponding amyloid-β loads were analyzed with immunohistochemistry. All subcategories of AD patients had significantly greater amyloid burden than nondemented participants, but amyloid load did not significantly differ among the AD subcategories. Strong and significant correlations were found between SUVr and histologic amyloid measures in all regions. The authors concluded that "these findings indicate that florbetapir PET imaging is not confounded by neuropathological heterogeneity within AD."

Journal of Neuropathology and Experimental Neurology

PET Verification in Proton Therapy

In an article in the January 6 issue of *Physics in Medicine and Biology* (2014;59:1–21) Frey et al. from the Ludwig–Maximilian University (Munich, Germany) and the Heidelberg Ion Beam Therapy Center (Germany) reported on the development of "treatment planning system" (TPS) PET for routine in vivo dose verification in proton therapy. The authors reviewed their previous work on TPS PET as a new approach for predicting proton radiation–induced tissue 3D positron-emitter distributions by using the same algorithms as those in the clinical treatment planning system. They described the validation of their approach using phantom and patient studies and Monte Carlo simulations. They concluded that this methodology "provides a faster implementation, the results show no sensitivity to lateral field extension" and that the predicted β^+-emitter densities are fully consistent with the planned treatment dose because they are calculated by the same pencil beam algorithms.

Physics in Medicine and Biology

PET/CT in Newly Diagnosed HL: Meta-Analysis

Adams et al. from the University Medical Center Utrecht (The Netherlands) reported on December 18 ahead of print in *Annals of Oncology* on a study designed to systematically review and create a meta-analysis of published literature on the effectiveness of ^{18}F-FDG PET/CT in identifying bone marrow involvement in newly diagnosed Hodgkin lymphoma. Results of the study were used to explore the question of whether this approach is suitable for replacing blind bone marrow biopsy (BMB) in such patients. The authors reviewed studies from PubMed/Medline and Embase databases to identify 9 eligible studies "of moderate methodological quality" with a total of 955 patients with newly diagnosed Hodgkin lymphoma. ^{18}F-FDG PET/CT was found to have a sensitivity range of 87.5%–100% (96.9% pooled estimate) and specificity range of 86.7%–100% (pooled estimate, 99.7%).

The weighted summary proportion of patients with negative ^{18}F-FDG PET/CT findings and positive BMB among all cases was 1.1%. The authors concluded that despite less than ideal methodologic quality in some of the studies, "current evidence suggests that ^{18}F-FDG PET/CT may be an appropriate method to replace BMB in newly diagnosed Hodgkin lymphoma."

Annals of Oncology

PET and CT in Bladder Cancer Staging

In a study e-published on December 16 in *BJU International*, Goodfellow et al. from Kings College London (UK) reported on the results of a study assessing the utility of ^{18}F-FDG PET and CT in preoperative staging in patients with bladder cancer. The study included 233 patients with muscle invasive or high-risk non–muscle invasive bladder cancer under evaluation for radical surgery. Each patient underwent ^{18}F-FDG PET and CT imaging of the chest, abdomen, and pelvis to identify pelvic nodal involvement and/or distant metastases. In patients who proceeded to radical cystectomy, histopathology and follow-up imaging were used as comparative standards. In patients who did not undergo surgery, follow-up imaging was assessed.

Twenty-six patients were excluded from analysis because they underwent neoadjuvant chemotherapy or had <10 nodes involved at lymphadenectomy. Sensitivities for detecting metastatic disease outside the pelvis were 54% for PET and 41% for staging CT, with similar specificities of 97% and 98%, respectively. Thirteen PET-avid lesions (metastatic bladder cancer, 6; synchronous primary colonic cancer, 1; colonic adenoma, 1; basal cell tumor of the parotid gland, 1; and inflammatory lesions, 4) were not seen on CT. The sensitivity and specificity of CT for pelvic lymph nodal involvement were 45% and 98%, respectively. The combined PET and CT sensitivity for detecting metastatic disease in nodes increased to 69%, with a 3% reduction in specificity to 95%. These authors concluded that despite the small improvement in preoperative staging when PET is added to CT in bladder cancer, "this advantage is not significant enough to justify the additional cost." They recommended using PET/CT only in "highly selected patients."

BJU International

PET/CT and Carcinoid Tumors of the Lung

Stefani et al. from the University of Modena and Reggio Emilia (Italy) reported in the December 4 issue of the *Journal of Cardiothoracic Surgery* (2013;8:223) on a study exploring the value of ^{18}F-FDG PET/CT in evaluation of solitary pulmonary nodules suspected to be carcinoids. The retrospective study included the records of 25 patients with pathology-proven bronchial carcinoids who underwent ^{18}F-FDG PET/CT imaging. Selected clinical, radiologic, and pathologic variables were assessed against maximum standardized uptake values (SUV_{max}) on PET. Data results showed 24 typical and 1 atypical carcinoid (21 peripheral, 4 central lesions), with mean diameter on CT of 25.3 mm. Sixty percent of tumors were found to be ovoid and 68% to have smooth margins. A strong correlation was found between SUV_{max} (mean, 3.6; range, 1.4–12.9) and tumor size. All lesions were completely resected, and no patients experienced recurrent disease during follow-up. The authors concluded that "when a solitary pulmonary nodule shows an ovoid/round shape and smooth margins on the CT scan and demonstrates an FDG uptake higher than that of the normal lung and with a SUV_{max} value >1–1.5, a carcinoid should be suspected" and that "if benign lesions can be presumably excluded, surgical resection or at least a biopsy of the lesion is recommended."

Journal of Cardiothoracic Surgery

PET and Glioma Recurrence Identification

In a study e-published on December 5 ahead of print in *Neurologia Medico-Chirurgica* (Tokyo), Takenaka et al. from Kizawa Memorial Hospital (Minokamo, Japan) assessed differences in metabolic activities differentiating glioma recurrence from radiation necrosis and looked at the relative accuracies of ^{11}C-methionine (^{11}C-MET), ^{11}C-choline, and ^{18}F-FDG PET for in vivo differentiation of these conditions. The study included 50 patients with MR imaging results suggestive of recurrent glioma. Each patient underwent ^{11}C-MET, ^{11}C-choline, and ^{18}F-FDG PET. Patients previously treated with radiotherapy for malignant glioma underwent surgery with subsequent pathologic diagnosis (17 recurrent grade 3 gliomas, including 7 anaplastic astrocytomas and 10 anaplastic oligodendrogliomas; 17 recurrent grade 4 glioblastomas; and 16 diagnoses of radiation necrosis). An ^{11}C-MET lesion-to-normal brain uptake ratio >2.51 provided the best sensitivity and specificity (91.2% and 87.5%, respectively) for establishing glioma recurrence. The authors concluded that the results suggest that ^{11}C-MET is "superior to both ^{11}C-choline and ^{18}F-FDG PET for diagnostic accuracy in distinguishing glioma recurrence from radiation necrosis."

Neurologia Medico-Chirurgica

PET/CT and Esophageal SCC Staging

Chen et al. from the Chang Gung Memorial Hospital (Taoyuan, Taiwan) reported on November 29 in *PLoS One* (2013;8:e82812) on a study detailing the ability of ^{18}F-FDG PET/CT to detect synchronous cancers during staging workup for esophageal squamous cell carcinoma. The retrospective study included a review of records from 426 patients with esophageal cancer who underwent ^{18}F-FDG PET/CT imaging during primary staging workups. Synchronous cancers were defined as those occurring within 6 mo of imaging and were confirmed by histology or imaging follow-up. After the exclusion of 50 patients because of the presence of distant metastases, 359 of the remaining 376 patients were diagnosed with squamous cell carcinoma. Of these, 17 patients were identified with synchronous cancers (head and neck, 13; colon cancer, 2; hepatocellular carcinoma, 1; and renal cell carcinoma, 1). ^{18}F-FDG PET/CT accurately identified 15 synchronous cancers (12 head and neck cancers, 2 colon cancers, and 1 renal cell carcinoma); whereas conventional workup detected only 9 (7 head and neck cancers, 1 hepatocellular carcinoma, and 1 renal cell carcinoma). ^{18}F-FDG PET/CT and conventional workup sensitivities were 88.2% and 52.9% respectively. The authors concluded that their data suggest that ^{18}F-FDG PET/CT "is superior to conventional workup in the detection of synchronous tumors during primary staging for esophageal squamous cell carcinoma."

PLoS One

SPECT/CT and US in Hyperparathyroidism

In an article e-published on December 10 ahead of print in the *Endocrine Journal*, Noda et al. from Osaka City University Graduate School of Medicine (Japan) reported on a comparison of ^{99m}Tc-MIBI SPECT/CT, planar scintigraphy, and ultrasound for planning parathyroidectomy in patients with primary hyperparathyroidism. The retrospective record review included 75 patients with primary hyperparathyroidism who had undergone surgery. Four patients were excluded because their records had no ultrasound results. Seven patients were found to

have multiple hyperplastic glands, 3 to have no involved glands, and the remaining 61 to have single adenomas. In these 61 patients, ultrasound, ^{99m}Tc-MIBI planar, and ^{99m}Tc-MIBI SPECT/CT imaging provided accurate localization in 77.0%, 75.4%, and 88.5%, respectively. Ultrasound and ^{99m}Tc-MIBI planar imaging showed agreement in 42 cases (68.9%), with accurate localization in 90.5% of these. When ultrasound and ^{99m}Tc-MIBI SPECT/CT were in agreement, all identified lesions were accurately localized. The authors concluded that the "combination of ultrasound and ^{99m}Tc-MIBI SPECT/CT certainly contributes to the planning of minimally invasive operation in cases with primary hyperparathyroidism by indicating correct localization of single adenoma."

Endocrine Journal

PET, Sex, and Metabolic Networks

Hu et al. from the Nanjing University (China) and Soochow University (Suzhou, China) reported on December 17 in *PLoS One* (2013;8:e83821) on a study using ^{18}F-FDG PET imaging to elucidate differences in brain metabolic networks in men and women. The study included PET data from 400 healthy, right-handed individuals (200 women, 200 men; age, 25–45 y; mean age, 40.9 ± 3.9 y). Regional differences between the sexes in brain glucose metabolism were explored as were differences in metabolic networks. Women were found to have higher metabolism in the posterior brain and lower metabolism in the anterior brain. Significant differences were also described within and between brain glucose metabolic networks. The authors concluded that "these observations might contribute to the better understanding of the gender differences in human brain functions, and suggest that gender should be included as a covariate when designing experiments and explaining results of brain glucose metabolic networks in the control and experimental individuals or patients."

PLoS One

Limited PET/CT in Lymphoma Restaging

In an article published in the December 13 issue of *Acta Haematologica* (2013;131:239–244), Wolach et al. from the Rabin Medical Center–Beilinson Hospital (Petah Tikva, Israel) reported on a retrospective analysis intended to evaluate whether limited PET/CT focused only on the involved field of view at original diagnosis (corresponding to an above- or below-the-diaphragm scan) is sufficient in follow-up of patients with Hodgkin or non-Hodgkin lymphoma. The researchers' aim was to determine whether this technique might reduce the cumulative radiation exposure associated with repeated PET/CT imaging as well as better allocate what is a limited technology resource in some settings. The study included 44 patients with early-stage Hodgkin lymphoma (n = 27) and aggressive non-Hodgkin lymphoma (n = 17) who underwent 131 PET/CT scans as part of initial staging and follow-up. The authors found no case in which disease had progressed outside of the initially involved field of view, even in cases of disease progression and relapse. They concluded that these findings suggest that limited PET/CT analysis of the initially involved field of view in patients with early-stage curable lymphoma "may be satisfactory for response assessment."

Acta Haematologica

REVIEWS

Review articles provide an important way to stay up to date on the latest topics and approaches by providing valuable summaries of pertinent literature. The Newsline editor recommends several reviews accessioned into the PubMed database in December and January. In an article e-published on December 1 ahead of print in *Clinical Physiology and Functional Imaging* Pedersen et al. from the University of Copenhagen (Denmark) offered "Positron emission tomography of the vulnerable atherosclerotic plaque in man: a contemporary review." Saykin et al. from the Indiana University School of Medicine (Indianapolis) described "Neuroimaging biomarkers and cognitive function in non–central nervous system cancer and its treatment: current status and recommendations for future research" in the December issue of *Brain Imaging and Behavior* (2013; 7:363–373). In an article appearing in a January supplement to *Parkinsonism and Related Disorders* (2014;20 [suppl 1]: S184–S186), Suwijn et al. from the University of Amsterdam (The Netherlands) reviewed "The role of SPECT imaging of the dopaminergic system in translational research on Parkinson's disease." Lu and Wang from Peking University (Beijing, China) reported in the December issue of *Current Molecular Medicine* (2013;13: 1487–1505) on "Development of RGD-based radiotracers for tumor imaging and therapy: translating from bench to bedside." In the same issue (2013;14: 1538–1548), Nayak et al. from the University of Wisconsin (Madison) detailed "Multimodality imaging of CXCR4 in cancer: current status towards clinical translation." In an article e-published on December 11 ahead of print in the *Journal of Labelled Compounds and Radiopharmaceuticals*, Holland et al. from the Harvard Medical School (Boston, MA) and the Australian Nuclear Science and Technology Organisation (Kirrawee, Australia) suggested "Alternative approaches for PET radiotracer developments in Alzheimer's disease: imaging beyond plaque."