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. This month the selections are abbreviated to accommodate other Newsline information and features.

68Ga-PSMA-11 in Recurrent Prostate Cancer

Fendler et al. from the University of California at Los Angeles, University Hospital Essen/University of Duisburg-Essen (Germany), the Technical University of Munich (Germany), the University of California San Francisco, Veterans Affairs Greater Los Angeles (CA), Obihiro Kosei Hospital (Japan), Hokkaido University Graduate School of Medicine (Sapporo, Japan), St. Vincent's Hospital (Sydney, Australia), Aalborg University Hospital (Denmark), Ludwig-Maximilians University (Munich, Germany), Memorial Sloan Kettering Cancer Center (New York, NY), and University Hospital Zurich (Switzerland) reported on March 28 ahead of print in *JAMA Oncology* on a single-arm, multicenter clinical trial assessing the accuracy of 68Ga–prostate-specific membrane antigen–11 (68Ga-PSMA-11) PET in localizing biochemically recurrent prostate cancer. The study included 635 men (median age, 69 y). The per-patient positive predictive value of 68Ga-PSMA-11 imaging was found to be 84% with histopathologic comparison and 92% with the composite reference standard. PSMA PET localized recurrent prostate cancer in 475 of 635 (75%) patients. Detection rates increased directly and significantly with increases in prostate-specific antigen (PSA): by 38% for <0.5 ng/mL PSA (136 patients), by 57% for 0.5–<1.0 ng/mL PSA (79 patients), by 84% for 1.0–<2.0 ng/mL PSA (89 patients), by 86% for 2.0–<5.0 ng/mL PSA (158 patients), and by 97% for ≥5.0 ng/mL PSA (173 patients). Inter-reader reproducibility was good, and no serious adverse events were noted with tracer administration. PET-directed focal therapy alone in 39 patients led to a PSA decrease of 50% or more in 31 (80%) patients. The authors concluded that their primary endpoint had been met by the finding that 68Ga-PSMA-11 PET demonstrated 84%–92% positive predictive value at a 75% overall detection rate in this large population of individuals with biochemically recurrent disease.

JAMA Oncology

18F-FDG PET Repeatability in BAT Quantitation

Fraum and colleagues from the Mallinckrodt Institute of Radiology/Washington University School of Medicine (St. Louis) and the University of California San Diego School of Medicine reported on June 4 ahead of print in *Cell Metabolism* on a study designed to assess the repeatability of quantitative brown adipose tissue (BAT) imaging with 18F-FDG PET. The study included 24 participants who underwent 18F-FDG PET/CT and 18F-FDG PET/MR imaging after cold activation, with repeat imaging within 14 d. At repeat imaging, the assessed BAT volumes were strongly correlated between the 2 serial PET/CT findings and between the 2 serial PET/MR findings. BAT maximum lean body mass–adjusted SUVs were also strongly correlated between sessions for PET/CT and PET/MR imaging. The authors attributed longitudinal variability in BAT metrics to "biological factors intrinsic to BAT, whole-body metabolic fluctuations, or temporal differences in cold activation efficacy, rather than imaging factors." They recommended that future studies using PET-based imaging to assess BAT response to therapies should consider these variations when framing study criteria.

Cell Metabolism

PET/CT and Response Prediction in RAI

Kang et al. from Seoul National University/Seoul National University Hospital (Korea), Ewha Womans University Medical Center (Seoul, Korea), Seoul National University Bundang Hospital (Seong-Nam, Korea), and the National Cancer Center (Goyang, Korea) reported on June 25 in *PloS One* (2019;14[6]:e0218416) on a study evaluating the utility of 18F-FDG PET/CT for early prediction of radioactive iodine therapy response in patients with metastatic differentiated thyroid cancer. The study included 54 such patients who underwent 18F-FDG PET/CT imaging at the time of 131I treatment. The therapeutic response was assessed as response rate and disease control rate. A therapeutic response to 131I treatment was seen in 22 patients (41%). No significant differences in age, sex, stage, histology, sites of metastases, stimulated thyroglobulin or thyroglobulin antibody measures, therapeutic doses, or 131I uptake patterns were seen in responders and nonresponders. The group with radioactive iodine uptake but no 18F-FDG uptake showed a significant correlation with response rate, but the patient group with both 131I and 18F-FDG uptake showed no significant correlation with response rates. In a subanalysis, uptake of either 131I or 18F-FDG was well correlated with disease control rate. The authors concluded that because patients with 18F-FDG uptake in metastatic differentiated thyroid cancer showed poor response to 131I therapy regardless of the degree of radioactive iodine uptake, "FDG PET/CT may help us identify the patients with radioiodine-refractory thyroglobulin and establish an appropriate treatment strategy in the early period."

PloS One