
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.

¹⁸F-FDG PET/CT and WBC SPECT/CT in Cardiac Implantable Device Infection

In an article e-published on July 11 in *Circulation Cardiovascular Imaging*, Calais, from the University of California at Los Angeles, and colleagues from the Université de Paris, the Institut National de la Santé et de la Recherche Médicale, and the Hôpital Bichat-Claude Bernard (all in Paris, France) reported on the diagnostic value of ¹⁸F-FDG PET/CT and radiolabeled white blood cell SPECT/CT in patients with suspected chronic infections associated with cardiac implantable electronic devices (CIEDs). The retrospective study included data from 48 such patients who underwent both types of imaging within a ≤ 30 -d period. Final confirmation of CIED infection was based on the modified Duke–Li classification at the end of follow-up. The 2 imaging methods were analyzed separately, with readers unaware of patient medical histories. The diagnostic sensitivity, specificity, and positive and negative predictive values for PET/CT were 80%, 91%, 80%, and 91%, respectively, with values of 60%, 100%, 100%, and 85%, respectively, for white blood cell SPECT/CT. The authors found that the addition of a positive nuclear imaging scan as a major criterion improved the Duke–Li classification at admission. They also observed

that associated semiquantitative parameters did not allow discrimination between definite and rejected CIED infection and that prolonged antibiotic therapy before imaging showed a tendency to decrease the sensitivity for both imaging techniques.

Circulation Cardiovascular Imaging

Prognostic Postradiation PET in Uterine Cervical Cancer

Kim et al. from the Kangwon National University Hospital (Chuncheon), the Armed Forces Daejeon Hospital, and the University of Ulsan College of Medicine (Seoul, all in Korea) reported online in the September issue of the *Journal of Gynecologic Oncology* (2019;30[5]:e66) on a systematic review and metaanalysis of the prognostic value of ¹⁸F-FDG PET in uterine cervical cancer after radiotherapy with or without chemotherapy. A search of the literature yielded 11 studies with 12 patient cohorts totaling 1,104 women. Overall and progression-free survival endpoints were included in the analysis. The pooled hazards ratio (HR) of complete metabolic response compared to partial metabolic response was 0.19. Pooled HR of complete metabolic response compared to progressive metabolic disease was stronger at 0.07, and that of complete metabolic response compared to both partial and progressive metabolic response was 0.20. In a quantitative synthesis for progression free survival, the pooled HR for complete metabolic response was 0.17 compared to progressive metabolic response, 0.02 compared to progressive metabolic disease, and 0.12 compared both to progressive metabolic response and progressive metabolic disease. The authors concluded that post–radiation treatment ¹⁸F-FDG PET results were “significant prognostic factors in patients with uterine cervical cancer, and

¹⁸F-FDG PET could be a reasonable follow-up imaging modality.”

Journal of Gynecologic Oncology

¹⁸F-FDG Uptake and Ki67 in Pancreatic NETs

In an article e-published on July 23 in *Digestive and Liver Disease*, de Mestier et al. from the Université de Paris, Beaujon-Bichat Hospital (Clichy), and the Robert-Debré Hospital (Reims, both in France) reported on a study exploring the correlation between Ki67 proliferation and ¹⁸F-FDG uptake on PET at the lesion level in resected pancreatic neuroendocrine tumors (NETs). The study included 21 patients with pancreatic or associated NETs but without neoadjuvant treatment who underwent ¹⁸F-FDG PET imaging before pancreatic ($n = 12$), liver ($n = 2$), or combined ($n = 7$) surgery. A total of 21 primary pancreatic NETs, 13 liver metastases, and 2 lymph node metastases were identified. Analysis included lesion-by-lesion correlation between Ki67 and tumor-to-liver SUV_{max} ratio (T/L) and between pathology grades (G1, G2, and G3) and metabolic grades (mG1, SUV_{max} T/L ≤ 1 ; mG2, SUV_{max} T/L 1–2.3; and mG3, SUV_{max} T/L > 2.3). Lesions showed a median Ki67 of 4%, and Ki67 correlated with SUV_{max} T/L. Median SUV_{max} T/Ls were 0.76, 1.41 and 2.67 for lesions in the G1, G2, and G3 categories, respectively. Median Ki67 measures were 1, 4 and 25 for lesions in the mG1, mG2, and mG3 categories, respectively. The authors concluded that because “uptake on FDG PET could predict the pathological grade of PanNET lesions, FDG PET could supplement pathological evaluation of tumor biological aggressiveness and could guide the choice of the most relevant lesions to biopsy.”

Digestive and Liver Disease