In the News

To cite this article: (1996) In the News, Oncology Issues, 11:4, 12-12, DOI: 10.1080/10463356.1996.11904621

To link to this article: https://doi.org/10.1080/10463356.1996.11904621

Published online: 18 Oct 2017.

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PET Scanning: Patient Benefits and Cost Savings

Nuclear medicine imaging evaluation of patients with suspected or confirmed cancer was the focus of research results presented at the Society of Nuclear Medicine's 43rd Annual Meeting, held in early June in Denver, Colo.

Nuclear medicine physicians and thoracic surgeons at the University Hospital in Zurich, Switzerland, reported using a nuclear medicine test, FDG-PET, to decide which lung cancer patients should undergo surgery. Positron Emission Tomography (PET) is a highly sensitive nuclear medicine technique for detecting cancer. When used with fluorine-18 [¹⁸F] fluoro-deoxy-glucose (FDG, a form of glucose), PET scanning visualizes abnormal glucose metabolism that is characteristic of tumors.

"In our institution, FDG-PET is performed routinely for preoperative staging in all patients with newly suspected or diagnosed nonsmall-cell lung cancer," said Hans Steinert, M.D., associate professor of the hospital's Division of Nuclear Medicine. Steinert and colleagues evaluated the accuracy of PET correlated X-ray computed tomography (CT) with staging lymph node metastases in patients with nonsmall-cell lung cancer.

The Swiss research team used PET and CT to image 62 patients about to undergo thoracotomy and/or mediastinoscopy. At surgery, a full node sampling was obtained in 47 patients with bronchogenic carcinoma. For staging the disease in these patients' lymph nodes, FDG-PET was correct in 45 of 47 (95.8 percent) patients, and CT was correct in 37 of 47 (78.7 percent) patients. CT can only detect an anatomic change in lymph nodes, such as enlargement, which may indicate metastatic lung cancer. However, there are other, nonmalignant conditions that cause lymph nodes to be enlarged; and sometimes a malignant lymph node is not enlarged. FDG-PET detects the physiologic change of malignancy, and can differentiate between benign and malignant lymph nodes regardless of their size.

"In this study, PET also identified three metastatic lesions (in the brain, lumbar spine, and pelvis) that were outside the CT field-of-view. PET is superior to CT for staging patients with lung cancer. However, because of the limited anatomic information available from PET images, it's necessary to correlate CT and PET results for exact localization of the lymph node metastases when PET scans are positive," explained Steinert.

"Whole-body PET is a cost-effective method for staging metastases because patients can get a complete staging in one imaging examination. We acquire a PET scan from the head to the pelvis to search for distant metastases," Steinert added.

Another study compared the clinical accuracies of FDG-PET and CT for detecting recurrent colorectal carcinoma. Andrew M. Scott, M.D., and colleagues at Austin & Repatriation's Department of Nuclear Medicine and Centre for PET used both PET and CT to evaluate 34 patients over an 18-month period. Results showed that PET correctly identified 69 sites of recurrent tumor whereas CT correctly identified 34 sites of disease. "In 13 patients with elevated CEA levels [CEA, or carcinoembryonic antigen, is a marker for colorectal cancer] but negative or equivocal CT scans, PET correctly identified recurrent disease in 11 patients," noted Scott.

"PET has potential cost benefits in modifying treatment decisions, particularly in helping institutions avoid the cost of surgery that will be unsuccessful," said Scott. "Our institution is involved in an international, multicenter study with the Institute for Clinical PET [based in the United States] to establish a large patient study for determining 1) the accuracy of PET for identifying recurrent colorectal carcinoma and 2) the potential cost benefits of PET in this clinical setting," he added.

Cancer Registries on the Road Again

The Commission on Cancer has sent hospitals copies of its Registry Operations and Data Standards (ROADS), Volume II of the set Standards of the Commission on Cancer. ROADS replaces the 1994 Data Acquisition Manual. Commission-approved programs are required to code all analytic cases as specified in the ROADS, starting with those first diagnosed and/or seen at the reporting institution as of January 1, 1996.

ROADS reflects changes in cancer diagnostic procedures, treatment patterns, and reporting requirements as well as data analyses. The changes were recommended by the Commission's Data Set Task Force of hospital and central registry personnel, physicians, vendors, and Commission staff. The data set was carefully reviewed by the North American Association of Central Cancer Registries.

Questions on implementation of the new data standards should be addressed to Carol Johnson, American College of Surgeons, Commission on Cancer, 55 East Erie St., Chicago, IL 60611-2797. Her fax number is 312-440-7144.