

## 《Invited Special Lecture》

## Clinical PET in the USA

Steven M. Larson, M.D.

Chief, Nuclear Medicine Service, Department of Radiology,  
Memorial Sloan-Kettering Cancer Center  
1275 York Avenue, New York, NY 10021, USA

Positron Emission Tomography (PET) is rapidly growing in importance as a clinical tool in the USA, even if the technology is still largely confined to a few large centers (about 50 whole body sites). An initial indication of clinical benefit has been demonstrated in epilepsy, dementia, brain tumors, before cardiac transplant and in low EF patients before coronary artery bypass surgery. However, it is in oncology where the true excitement seems to be at the moment because PET has been demonstrated to really make a difference in management in the common human tumors: lung, colorectal, and probably breast melanoma and lymphoma, as well. To evaluate the clinical utility of FDG-PET, we performed FDG-PET scans in patients with lung cancer, esophageal and colorectal cancer. PET results were compared with those of CT and correlated with histopathological and clinical findings. In regard to lung cancer at MSKCC, a final diagnosis was reached in 72 patients at 142 sites by histology or clinical follow-up of at least 3 months. PET-FDG had an accuracy of 94% by comparison CT scan had an accuracy of 79%. In regard to esophageal cancer, a final diagnosis was reached in 14 patients at 25 sites by histology (12 patients) or clinical follow-up of over 6 months (2 patients). FDG-PET scan had an accuracy of 88%. In regard to colorectal cancer, a final diagnosis was obtained at 46 sites in 37 patients by histology or clinical follow-up of at least 3 months. The accuracy of PET for tumor detection was 93%, By comparison, CT showed a 63% accuracy. **Conclusion:** In our experience, FDG-PET is highly accurate in preoperative staging in patients with lung cancer, esophageal cancer, and colorectal cancer. (Supported in part by DOE #DE-FG02-86ER60407 and the Gerschel Foundation)