

PET and lymphoma

Hodgkin's disease

Hodgkin's accounts for one percent of new cancer cases annually in the U.S., or 8,000 cases per year. A cure occurs in 70 percent of cases. There is a strong genetic link to Hodgkin's occurrence. Hodgkin's almost always originates in a lymph node and spreads via the lymphatic system. The spleen is involved in many cases. Radiation therapy is the primary treatment, and combination chemotherapy may be used in advanced cases. PET/FDG studies offer a true advance in diagnostic accuracy over gallium studies.

Non-Hodgkin's Lymphoma (NHL)

A variety of lymphoproliferative diseases with wide variations in growth rate, progression, and response to therapy are grouped under this name. Approximately 40,000 new cases occur each year in the U.S. The incidence is rising dramatically. Tumors are classified into low, intermediate, and high grades, reflecting biologic aggressiveness. Radiation therapy is the primary treatment for Stage I and II disease. Combination chemotherapy may be used in advanced disease. NHL is notoriously difficult to diagnose, as symptoms are suggestive of many other disorders and disease may be diffuse rather than concentrated. PET/FDG imaging offers a clear advance over gallium scans for diagnosis and staging of NHL.

Reimbursement for PET

PET is approved for reimbursement within the Medicare program for diagnosis, staging, and re-staging lymphoma, subject to certain guidelines. Studies can be repeated to ascertain patient response to therapy after 50 days. Many private indemnity insurers cover PET studies. Contact your local PET center for additional information.

Source for cancer facts and figures:

Manual of Medical Therapeutics: The Washington Manual, 27th Edition, 1993.

Manual of Clinical Oncology, 3rd edition, 1995.

Scan protocol:

Dose: 11.4 mCi 18F-FDG inj. i.v.

Patient weight: 87.7 kg (193 lbs)

Emission scan: 3.5 min/bed position

Low dose CT performed for PET attenuation correction and localization (parameters: mAs: 15, kVp: 140)

Patient history:

36 year-old male with recurrent Hodgkin's lymphoma and unsuccessful treatment, including failed bone marrow transplant.

PET/CT findings:

PET/CT reveals multiple foci of increased activity throughout the body.

Relevant articles and papers on lymphoma:

1. Cremerius U, Fabry U, Neuerburg J, Zimny M, Osieka R, Buell U. Positron emission tomography with 18FDG to detect residual disease after therapy for malignant lymphoma. *Nucl Med Commun* 1998;19:1055-1063.
2. Maisey NR, Hill ME, Webb A, et al. Are 18-fluorodeoxyglucose positron emission tomography and magnetic resonance imaging useful in the prediction of relapse in lymphoma residual masses? *Eur J Cancer* 2000;36:200-206.
3. Jacobson AF, Maisey MN, Fogelman I, Kuhn D. Yield of FDG-PET scanning as a routine follow-up exam in patients with malignancy [abstract]. *J Nucl Med* 2000;41:304P.

