controversy II: has PET changed the approach to lymphoma patients?

120 HAS PET CHANGED THE APPROACH TO LYMPHOMA PATIENTS? (PROS)

Sigrid Stroobants[1]
[1]*Nuclear Medicine, University Hospital Gasthuisberg, Leuven, Belgium*

Positron emission tomography (PET) using the glucose analogue F-18-Fluorodeoxyglucose (FDG) is now widely used for staging and treatment monitoring in patients with Hodgkin's disease (HD) and non-Hodgkin's lymphoma (NHL). In contrast to many solid tumors, lymphomas are highly sensitive to chemotherapy or radiotherapy and substantial long-term cure-rates of 90% for HD and 50% for aggressive NHL are expected with the current treatment options. However, the magnitude of late treatment-related morbidity and mortality especially in young HD patients treated with combination chemo-radiotherapy as well as the fact that still a considerable amount of NHL patients cannot be cured with standard induction therapy, has tempered the initial enthusiasm. Accordingly, tailoring the intensity of the treatment to individual patient basis has become very important and FDG-PET is becoming a valuable tool in this context.

PET can obtain complementary information in addition to conventional staging procedures. A modification of disease stage and subsequent management is observed in 20% of patients but the impact on outcome remains unknown. The data today do not support the use of PET as the only imaging modality for staging lymphoma because of the potential for PET-negative tumor lesions that are detectable by conventional imaging. PET findings not seen by CT should be confirmed by histopathology or additional imaging before any change in management is contemplated. The most important reason to perform a baseline PET is the fact that it facilitates the evaluation of residual disease after therapy, currently the most established indication for PET in lymphoma.

At the end of treatment, lymphoma patients often present with a residual mass but only a minority of them will eventually relapse. Structural imaging can not reliably discriminate fibrotic from viable tumor masses. Numerous studies have shown the effectiveness of FDG-PET in the detection of residual disease at the end of therapy. The increased use of combined PET-CT scanners resulted in the formulation of new response criteria including both PET and CT results which were recently reported by Cheson et al and are recommended for the evaluation of response at the end of treatment in potentially curable and routinely FDG-avid lymphoma types (e.g. HL, DLBCL). These criteria are based on a consensus reached by experts in the field, instead of deducted from large clinical studies and it is therefore essential to check these criteria for their validity.

PET and PET/CT after a few cycles of chemotherapy is now recognized as an important prognostic factor in aggressive lymphoma. Dann et al. was the first to demonstrate that risk-adapted treatment based on early PET-results in Hodgkin's lymphoma (HL) can reduce the cumulative dose of chemotherapy without impairment of outcome. Although it was not shown that PET-adapted therapy improves outcome yet, most clinicians tend to start salvage treatment when there is evidence of persistent lymphoma on PET after few cycles of chemotherapy, and we may ask whether it is still ethical to administer chemotherapy when it is unlikely that this will lead to a complete remission. Recently, several large randomized controlled studies have started to compare clinical outcome in patients with a positive interim FDG-PET who either continue to receive the installed induction therapy or change to a more aggressive one.

121 HAS PET CHANGED THE APPROACH TO LYMPHOMA PATIENTS? (COS)

B.D. Cheson[1]
[1]*Hematology/Oncology, Georgetown University Hospital, Washington, D.C., United States*

FDG-PET is increasingly become a standard part of the diagnosis, staging, restaging, surveillance, and prognosis of patients with lymphomas. However, this use has thus far exceeded the supporting data. PET should not be used as a diagnostic test as it is not sufficiently specific, with many inflammatory and infectious disorders resulting in false positive findings. Although, for staging, PET has greater sensitivity and specificity and identifies more sites of disease than CT scan, in only about 15-30% of pts is the stage altered, and in fewer than 15% of pts does it change treatment, with no evidence for improvement in outcome. Numerous studies show that PET performed following 1 or more courses of therapy predicts outcome, yet no available data demonstrate that changing treatment on the basis of that information improves survival. The strongest evidence supporting PET is as post-treatment restaging; however, it is mostly valuable in histologies such as diffuse large B-cell NHL and Hodgkin's lymphoma where persistent disease generally warrants intervention if cure is to be achieved. For incurable lymphomas, time-dependent endpoints, such as progression-free or overall survival are generally more important. Available data fail to support the routine use of surveillance PET scans for detecting disease recurrence. Many issues remain to be resolved before PET can be considered a standard part of lymphoma management, including universal availability, variability of equipment, standardization of interpretation, potential differences among treatment regimens, and prospective validation of its usefulness. The International Harmonisation Project developed guidelines for PET interpretation and published revised response criteria for clinical trials including this technology. These guidelines recognized the differences in FDG-avidity and relevant clinical trials endpoints among lymphoma histologies. The CALGB 50303 comparison of R-CHOP vs R-EPOCH and other international studies are prospectively validating whether this technology has the potential for improving the outcome of lymphoma patients.