

## Clinical impact of whole body FDG-PET on the staging and therapeutic decision making for malignant lymphoma

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**Objectives:** The aim of this study is to evaluate the clinical impact of whole-body FDG-PET for the pre-therapeutic evaluation of malignant lymphoma and compared to that of  $^{67}\text{Ga}$ -scintigraphy when added to non-RI examinations. **Methods:** We examined 46 patients with malignant lymphoma including 42 newly diagnosed cases and 4 relapsed cases. Whole-body FDG-PET was started 63 minutes after the administration of FDG with ECAT EXACT HR<sup>+</sup>. The clinical stage of each patient was determined based on the results of a non-RI examination (consisting of physical examination, CT, gastrointestinal studies and bone marrow aspiration),  $^{67}\text{Ga}$  planar images and FDG-PET. Discrepant findings were verified based on the response to treatment and the findings of a follow-up examination more than 6 months after treatment. Finally, 152 nodal regions and 19 extranodal tissues were found to be involved by disease. **Results:** In the 152 nodal lesions, FDG-PET detected 54 nodal lesions in addition to 98 lesions detected by non-RI examinations, whereas  $^{67}\text{Ga}$ -scintigraphy detected 14 additional lesions. The sensitivity of non-RI, non-RI +  $^{67}\text{Ga}$  and non-RI + FDG was 64.5%, 73.7% and 100.0%, respectively. In 19 extranodal lesions, FDG-PET detected 5 extranodal lesions in addition to 13 lesions detected by non-RI examinations, whereas  $^{67}\text{Ga}$ -scintigraphy detected 1 additional lesion. The sensitivity of non-RI, non-RI +  $^{67}\text{Ga}$  and non-RI + FDG was 68.4%, 73.7% and 94.7%, respectively. When combining the FDG-PET findings with the non-RI findings, the improvement of the detectability was much higher than that when  $^{67}\text{Ga}$  findings were combined to the non-RI findings. For the staging of lymphoma, the non-RI and non-RI +  $^{67}\text{Ga}$  findings accurately diagnosed 76.1% and 80.4%, respectively, whereas the non-RI + FDG findings accurately diagnosed 82.6%. Finally, FDG-PET resulted in changes in the clinical management of 8 patients (17.4%). **Conclusions:** FDG-PET offers more information in addition to the findings of conventional diagnostic methods than  $^{67}\text{Ga}$ -scintigraphy in order to accurately detect malignant lymphoma. FDG-PET can therefore play an important role in therapeutic decision making on lymphoma.

**Key words:** malignant lymphoma, FDG ( $^{18}\text{F}$ -fluorodeoxyglucose), PET (positron emission tomography), staging, management