

## Role of Positron Emission Tomography with $^{18}\text{F}$ -FDG in Predicting Malignancy Grade of non-Hodgkin's Lymphoma

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### Abstract

Glucose metabolism has been shown to be increased in neoplastic tissue. It has been suggested that high activity of glucose metabolism is associated with a high grade of malignancy of human cancer. We have determined the ability of positron emission tomography (PET) with the  $^{18}\text{F}$ -FDG to detect manifestation sites of malignant lymphoma and to differentiate aggressive from indolent tumors. We studied glucose metabolism in 63 patients with untreated non-Hodgkin's (NHL) lymphoma. PET images were evaluated visually and semiquantitatively by calculation of standardized uptake values ( $\text{SUV}_{\text{max}}$ ). The focus of pathological accumulation of radiopharmaceutical with the maximum metabolic activity was considered for the final analysis of each patient. In 22 patients with indolent lymphoma, mean  $\text{SUV}_{\text{max}}$  was 5,2.

In 41 patients with aggressive lymphoma, a significantly higher  $^{18}\text{F}$ -FDG uptake was observed (mean  $\text{SUV}_{\text{max}} = 13,1$ ,  $p = 0,0003$ ) and a cut off value  $\text{SUV}_{\text{max}} = 9,6$  accurately discriminated between aggressive and indolent lymphoma. The results of this study suggest that the degree of  $^{18}\text{F}$ -FDG uptake correlates with the aggressiveness of lymphomas and allow differentiating NHL of varying degrees of malignancy.

**Key words:** Positron Emission Tomography with  $^{18}\text{F}$ -FDG, non-Hodgkin's Lymphoma, aggressive and indolent Lymphoma.

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