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Impact of positron emission tomography on primary staging and changing the therapeutic modality in lymphoma patients

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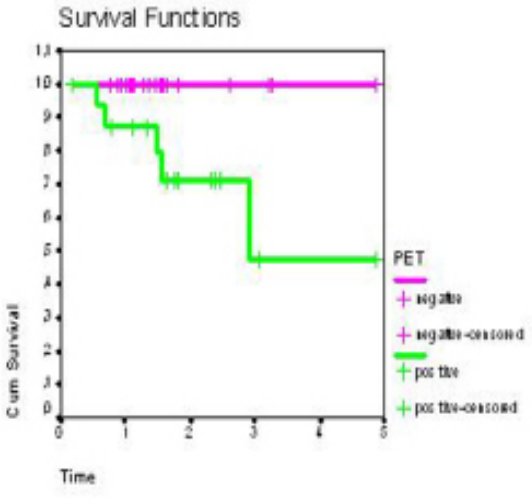
Abstract

Objectives: We investigated the usefulness of FDG-PET in initial staging and its contribution in changing the therapeutic plan in lymphoma patients.

Methods: More than 200 PET scans were performed in 95 lymphoma patients (42-HL, 53-NHL) between 2004 and 2009. In 54 cases PET was performed at diagnosis and after completion of first-line therapy. In 41 patients the first PET study was done after first-line therapy or at the relapse of the disease. Patients with metabolic activity in nodes after first-line therapy received salvage therapy consisting either of conventional chemotherapy (CT) with PET positive node irradiation or high-dose CT with HSCT.

Results: In 20% of NHL patients PET was the only method that revealed at least one pathological lesion not confirmed by computer tomography at diagnosis. In 71.2% of patients full metabolic response was achieved after first-line therapy; 27.8% of patients remained PET positive. Additional cycles of conventional CT and radiation converted PET-positivity to PET-negativity in 19.5% of cases, compared with 16% after ASCT. Early relapse was observed in 30% of patients with metabolic activity after first-line therapy compared with 20% in PET negative patients. Seventy-one percent of patients with PET-negative status did not relapse during the time of observation, whereas only 35% of patients with metabolic activity after first-line treatment remained in remission. The death rate was 23% in the PET-positive group, while no deaths were recorded in the PET-negative group. The overall survival rate was calculated in 41 patients and is represented in Fig. 1.



Conclusion: FDG-PET is useful at primary diagnosis. Approximately 20% of lymphoma patients could benefit from therapy changing initiated by PET status.

Keywords: lymphomas, prognosis, positron emission tomography