Impact of [^{18}F]Fluorodeoxyglucose Positron Emission Tomography Response Evaluation in Patients With High–Tumor Burden Follicular Lymphoma Treated With Immunochemotherapy: A Prospective Study From the Groupe d'Etudes des Lymphomes de l'Adulte and GOELAMS

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Abstract

Purpose: [^{18}F]Fluorodeoxyglucose positron emission tomography (PET) is widely used for the staging and restaging of patients with aggressive lymphoma, but less is known about the utility of PET in patients with follicular lymphoma (FL). In a prospective study, we evaluated the prognostic value of PET performed during treatment and at the end of treatment in 121 patients with FL treated with first-line immunochemotherapy.

Patients and Methods: Patients with previously untreated high–tumor burden FL were treated with six cycles of R-CHOP (rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone) plus two cycles of rituximab, without rituximab maintenance. PET was performed before treatment, after four cycles of R-CHOP (interim PET), and at the end of treatment (final PET). PET scans were centrally reviewed.

Results: The total number of patients included was 121. Median age was 57 years. After central review, interim PET (n = 111) was negative in 76% of patients, and final PET (n = 106) was negative in 78%. With a median follow-up of 23 months, 2-year progression-free survival rates were 86% for interim PET–negative versus 61% for interim PET–positive patients (P = .0046) and 87% for final PET–negative versus 51% for final PET–positive patients (P < .001), respectively. Two-year overall survival also significantly differed according to final PET results: 100% versus 88% (P = .0128).

Conclusion: PET performed either after four cycles of R-CHOP or at the end of therapy was strongly predictive of outcome in this prospective study. Therapeutic intervention based on PET results during or after inductive treatment should be evaluated.