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Interim PET-CT result is not predictive of survival in patients with *MYC*-rearranged non-Burkitt aggressive B cell lymphoma

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Abstract

Background: Patients diagnosed with *MYC*-rearranged non-Burkitt aggressive B cell lymphoma (MYC-R), including those with double hit lymphoma, are at high risk for developing relapsed/refractory disease, even if treated with intensive front-line immunochemotherapy. It is common in clinical practice as well as clinical trials to perform an interim PET-CT scan (iPET) during front-line therapy for diffuse large B cell lymphoma, however the utility of iPET result in MYC-R patients with regards to predicting outcomes is unclear. **Methods:** We performed a single-center retrospective study with centralized pathologic review and PET-CT image acquisition/interpretation on 28 MYC-R patients. Patients received front-line therapy with R-CHOP or intensive immunochemotherapy. **Results:** Eight patients were iPET positive (iPET +) and 20 patients iPET negative (iPET –) by the Deauville visual assessment criteria. At a median length of follow-up of 30.4 months, progression free survival was 65% and overall survival was 76%, neither of which differed significantly between iPET – and iPET + patients. The positive predictive value of iPET for progression at 30 months was 25% and the negative predictive value was 65%. **Conclusion:** Although patients with MYC-R lymphoma are reported to be at high risk for primary treatment failure, this is not predicted by iPET +, and it is not recommended that the result of iPET be used to guide changes in management of front-line or consolidative therapy for these patients.

Introduction

Balanced rearrangement of *MYC,* a proto-oncogene encoding a transcription factor regulating cell growth and proliferation,[1,2] is the driving genetic derangement behind Burkitt lymphoma.[3] *MYC* translocations are also found in non-Burkitt lymphomas, including diffuse large B cell lymphoma (DLBCL) as well as high-grade B cell lymphomas with rearrangements of *MYC* and *BCL2* and/or *BCL6* and high-grade B cell lymphomas not otherwise specified. *MYC* rearrangement in DLBCL is present in about 12% of cases and is associated with inferior prognosis and higher risk of relapsed/refractory disease.[4,5,6,7] Relapsed/refractory *MYC*-rearranged non-Burkitt aggressive B cell lymphoma (MYC-R) is associated with worse response to salvage chemotherapy as well as autologous stem cell transplant (autoSCT).[8]