ESMO-EANM joint symposium: impact of molecular imaging on management of lymphoma

PET-BASED DECISIONS IN NON HODGKIN’S LYMPHOMA

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Patients with NHL vary in response to current therapies. Early identification of the non-responders is of utmost importance in order to maximise their chances of a successful second-line therapy. In the search for a predictor of outcome to distinguish responders from non-responders, FDG-PET interim response assessment has been identified as a very promising tool. It provides an excellent basis for personalized medicine, whereby patients whose tumour is not responding may be shifted early during treatment from the ineffective to an another therapy. Even though the value of FDG-PET for post-treatment response assessment in DLBCL is well established nowadays, its value as a tool for interim response assessment is highly debated. In clinical practice PET scans are typically interpreted by visual methods. The well-established International Harmonization Project criteria dichotomize PET results into positive and negative relative to the intensity of tracer uptake. These criteria have been designed to assess end-of therapy response and should not be used to evaluate interim-PET scans. A new visual approach to PET scoring in lymphoma include a 5-point scale, the so-called Deauville criteria. At any observation time during induction chemotherapy, FDG uptake reflects a metabolic state which is a balance between tumour cell kill of chemosensitive components and re-growth of resistant components. When interim-PET is performed after one or two cycles, it evaluates the response of the cells with the highest mitotic index, thereby providing an early evaluation of chemosensitivity. In studies that have been conducted on the predictive value of interim PET, timing of interim PET varies considerably, both between and within studies, ranging from PET having been performed after 1 to 4 treatment cycles. To maximise therapy effectiveness and to minimise delays, toxicity and costs, early response assessment seems an attractive way to go. Interim-PET seems a promising tool but important issues as impact of timing, criteria, therapies on test performance need to be clarified. Randomized clinical trials with interim PET-CT based treatment modifications must ultimately demonstrate whether this strategy will improve patient outcome.

Disclosure: The author has declared no conflicts of interest.