1475P Radiological identification of rapid progressions in advanced NSCLC patients treated with nivolumab

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Background: With the wide introduction of anti-PD-1 agents in the treatment of NSCLC, the unusual patterns of response are now observed more frequently in the clinical setting. One of the major concerns for clinicians is hyperprogression, perceived as a reality by many but for which there is still discussion and has no standard definition. The aim of our work was to analyse the patterns of response to nivolumab in a homogeneously treated population of patients with NSCLC and identify cases with hyperprogression.

Methods: Between December 2015 and August 2017, 42 patients with NSCLC were treated with Nivolumab at 3mg/kg every 2 weeks. A retrospective evaluation of the CT scans (previous to baseline, baseline before nivolumab, subsequent scans after nivolumab) was performed by a thoracic radiologist. Tumour growth rate was defined as the percentage of variation by RECIST1.1 over time. It was calculated for the pre and post-nivolumab period (RECIST%/time (days)). We defined hyperprogressors as those patients whose tumour growth was 2 times greater on nivolumab than in the pre-nivolumab period.

Results: RECIST 1.1 evaluation was feasible in 40 patients. Best response was a partial response in 17.5% patients, including 4 cases (10%) of pseudoprogression and 2 cases with delayed response (after 1st scan). Thirty percent and 52.5% of patients showed stable disease and progressive disease, respectively. Among the 20 patients who developed progression by RECIST 1.1 on nivolumab, 16 experienced a more rapid progression in the post-nivolumab period (median % of change/1.6 V 0.3 in the pre-nivolumab period; p = 0.02). Sixty percent (12/20) of progressing patients were hyperprogressors according to our definition (30% of the total population). No differences between hyperprogressors vs rest of progressors according to age, performance status, treatment line, gender or histology was observed.

Conclusions: Rare patterns of response (pseudoprogression, hyperprogression) must be considered in the evaluation of patients treated with immunotherapy. Unexpectedly rapid progressions are observed on immunotherapy. Standardized definitions and mechanisms for these events warrant further investigation.

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