

Title: Monitoring response of PDL-1 directed immunotherapy in patients with advanced NSCLC using serum CEA levels.

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Monitoring response of PDL-1 directed immunotherapy in patients with advanced NSCLC using serum CEA levels.

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Background: Immunotherapy (IT) response measurements in advanced NSCLC management are evolving. We describe here our retrospective single institutional experience in measuring serum CEA levels as an early response determinant and correlation with radiographic assessment. **Methods:** Retrospective chart review was performed after obtaining IRB approval. Demographic information, stage, histology, prior treatment, IT agent used, radiographic response assessment and serum CEA levels were recorded. Patients were evaluable if they had elevated baseline serum CEA levels (normal range nonsmokers: 0-3 ng/ml, smokers 0-5 ng/ml), had received at least two cycles of IT and had radiographic response assessment performed. **Results:** Six eligible patients were identified. Median age 60 yrs.; M:F1:5, SCC n=1, Adeno: n=5; Smoking history positive n=4; Stage IV n=6, EGFR mut+ n=2; IT agent used: nivolumab: n=5; atezolizumab: n=1. IT as 1st line of Rx n=1; 2nd line n=3, 3rd line: n=2. On first radiographic assessment: three patients had progressive disease (PD), two patients had PR, and one patient (#1) had an initial PR and subsequently PD with subsequent rise in CEA level to 16.1 correlating with PD on radiographs. **Conclusions:** Serum CEA levels appear to correlate well with response assessment in patients with advanced NSCLC while being treated with immunotherapy. This small study is hypothesis generating and is currently being evaluated in a larger series.

Pt. #	Status of dis. at First Assessment	Baseline serum CEA level (ng/ml)	Serum CEA level at First Assessment (ng/ml)
1	PR	41.2	6
2	PD	5.8	14.4
3	PD	3.5	11.1
4	PD	220	323
5	PR	302	180
6	PR	1916	16.7