451 SERUM ALBUMIN PREDICTS OUTCOME IN PATIENTS WITH EXTENSIVE STAGE SMALL-CELL LUNG CANCER (ES-SCLC) RECEIVING FIRST-LINE COMBINATION OF PD-(L)1 INHIBITORS AND PLATINUM-ETOPOSIDE CHEMOTHERAPY

Giuseppe Lamberti*, Biagio Ricciuti, Victor Vaz, Joao Victor Alessi, Federica Pecci, Alessandro Di Federico, Mark Awad. *Dana-Farber Cancer Institute, Boston, MA, United States*

Background The combination of platinum-etoposide chemotherapy with PD-L1 inhibitors (chemoimmunotherapy) has become the new standard for first-line treatment of patients with extensive stage small-cell lung cancer (ES-SCLC). Nevertheless, factors associated with outcomes in this setting are lacking. We sought to identify clinicopathological and genomic factors associated with outcome to first-line chemoimmunotherapy in patients with ES-SCLC.

Methods Among patients at the Dana-Farber Cancer Institute with ES-SCLC who received a combination of platinum (carboplatin or cisplatin), etoposide, and a PD-(L)1 inhibitor (atezolizumab, durvalumab, or pembrolizumab), baseline clinicopathological and genomic features were correlated with objective response rate (ORR), progression-free survival (PFS), and overall survival (OS). For serum biomarkers (hemoglobin, sodium, albumin, lactate dehydrogenase [LDH], and derived neutrophile-to-lymphocyte ratio [dNLR]) a blood draw performed within 10 days from treatment start was considered. Patients who were on corticosteroids at the time of blood draw were not assessed for dNLR.

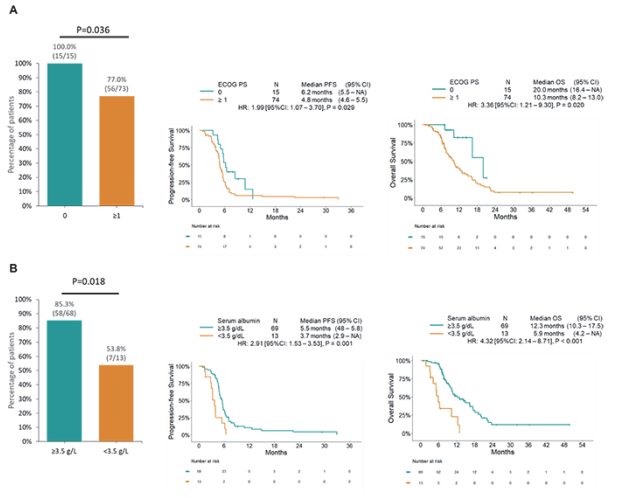
Results Among 89 patients included in the study, 53% were female, median age was 66 years, 17% had an Easter Cooperative Oncology Group performance status (ECOG PS) of 0, and 28% had baseline brain metastases (table 1). The most common treatment regimen was carboplatin-etoposide-atezolizumab in 82 patients (92%). Overall, ORR was 81% (N=71/88), median PFS was 5.0 months (95%CI: 4.7-5.6), and median OS 10.8 months (95%CI: 9.6-16.1), at a median follow-up time of 25.3 months (95%CI: 14.2-NA). Patients with an ECOG PS of 0 when compared to those with an ECOG PS of ≥1 had higher ORR (100% vs 77.0%, P=0.036), longer median PFS (6.2 vs 4.8 months; HR: 1.99 [95%CI: 1.07-3.70], P=0.029) and median OS (20.0 vs 10.3 months; HR: 3.36 [95%CI: 1.21-9.30], P=0.020) (figure 1). Patients with serum albumin levels ≥3.5g/dL (N=74 [84%]), compared to those with low albumin levels (<3.5g/dL, N=13 [16%]), had higher ORR (85% vs 54%, P=0.018), longer median PFS (5.5 vs 3.7 months; HR: 2.91 [95%CI: 1.53-3.53], P=0.001) and median OS (12.3 vs 5.9 months; HR: 4.32 [95%CI: 2.1-8.71], P<0.001). Neither dNLR (available in N=75 [84%]) nor tumor mutation burden (available in N=20 [22%]) were associated with outcome. After adjusting for confounding factors, a low albumin, but not ECOG PS, retained its association with ORR (adjusted odds ratio: 0.27 [95%CI: 0.07-0.96], P=0.025), PFS (adjusted HR: 2.58 [95%CI: 1.35-4.95], P=0.004), and OS (adjusted HR: 3.66 [95%CI: 1.80-7.44], P<0.001).

Conclusions Albumin levels might help predicting outcomes to first-line chemoimmunotherapy in patients with ES-SCLC. This can have implication in stratification of patients enrolled in prospective clinical trials.

Ethics Approval Patients at the Dana-Farber Cancer Institute who consented to institutional review board-approved protocols DF/HCC 02-180, 11-104, 13-364, and/or 17-000 which allowed for conducting translational research and tumor next-generation sequencing, respectively, were included.

Abstract 451 Table 1 Patient characteristics

	Overall (N= 89)
Sex	
Female	47 (52.8%)
Male	42 (47.2%)
Age	
Median [Min, Max]	66 [42 - 84]
Smoking status	
Ever	83 (93.3%)
Never	6 (6.7%)
Packyears	
Median [Min, Max]	43.7 [10 - 180]
Stage at diagnosis	
Extensive	84 (94.4%)
Limited	5 (5.6%)
ECOG PS	
0	15 (16.9%)
≥1	74 (83.9%)
Metastases sites at dx	
Brain	25 (28.1%)
Liver	43 (48.3%)
Bone	45 (50.6%)
Treatment for ES-SCLC	
Carboplatin + Etoposide + Atezolizumab	82 (92.1%)
Carboplatin + Etoposide + Durvalumab	2 (2.3%)
Carboplatin + Etoposide + Pembrolizumab	3 (3.4%)
Cisplatin + Etoposide + Durvalumab	3 (2.3%)
dNLR	
Median [Min, Max]	4.3 [1.5, 16.4]
Serum prognostic markers	
Hb <12.0 g/dL	21 (25.3%)
Na+ <135 mEq/L	20 (24.4%)
Albumin <3.5 g/dL	13 (15.9%)
LDH >250 U/L	11 (57.9%)
IHC positivity	
TTF-1	62 (81.6%)
Synaptophysin	54 (81.8%)
Chromogranin A	46 (71.9%)
CD56/NCAM	23 (92.0%)



Abstract 451 Figure 1 Objective response rate (ORR) and Kaplan-Meier estimates of progression-free survival (PFS) and overall survival (OS) by (A) ECOG PS (0 vs =1)and (B) serum albumin level (low <3.5 g/dL vs normal = 3.5 g/dL).

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