17P **Association of lung immune prognostic index (LIPI) with survival of first line immune checkpoint inhibitors single agent or in combination with chemotherapy in untreated advanced NSCLC patients**

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Background: The Lung Immune Prognostic Index (LIPI), combining the derived neutrophils/[leucocytes minus neutrophils] ratio (dNLR) and lactate dehydrogenase (LDH), has been associated with survival for ICI-single agent in large cohorts of refractory advanced NSCLC. However the role of LIPI in untreated NSCLC patients has not been explored yet. We assessed the value of LIPI in the front-line setting of advanced NSCLC patients (pts) treated with ICI-single agent or in combination with chemotherapy and compared to a cohort of pts treated exclusively with chemotherapy (CT).

Methods: Retrospective multicenter study of pts treated in first-line ICI single agent if PD-L1 $\geq$50% (ICI-cohort), or in combination with chemotherapy (Combo-cohort) from 15 centers worldwide. A control cohort with pts treated with platinum-based CT (CT-cohort) was extracted from the prospective MSN study. LIPI was calculated as previously reported. We correlated pretreatment LIPI with overall survival (OS) in the 3 cohorts.

Results: A total of 470 pts were enrolled in the three cohorts between 2011 and 2019. Median follow-up is 13.9 months. In the ICI-cohort (N = 252), 165 (65%) were male, with median age of 67, 195 (77%) with PS $\leq$ 1. Based on LIPI (available for 195 pts): 81 (42%) were considered good, 86 (44%) intermediate and 28 (14%) poor group. In the combo-cohort (N = 98), 71 (72%) were male, with median age of 66, and 84 (86%) with PS $\leq$ 1. Based on LIPI (available for 69): 23 (33%) were good group, 34 (49%) intermediate and 12 (17%) poor group. In the CT-cohort (N = 120), no differences were observed by LIPI groups. The impact of LIPI groups in the 3 cohorts is summarized in the table.

Table: 17P OS and PFS in the 3 cohorts; OS according to the LIPI groups

OS	ICI-cohort	Combo-Cohort	Chemo-cohort
Median PFS	8.5m. [6.6-11.8]	9.6m. [6.7-11]	5.7m. [5.1-6.6]
Median OS	21.3 m. 12.8-NR]	24.7m. [14.9-25.7]	13.8m. [9.6-15.3]
LIPI good Median OS	NR [17.36-NR]	25.7m. [25.6-NR]	14.4 m. [9.6-18.1]
LIPI intermediate Median OS	NR [9.2-NR]	16.9 m. [12.8-NR]	13.8 m. [8.5-15.8]
LIPI poor Median OS	7.9m. [2.3-NR]	6.2m. [5.7-NR]	6.5 m. [6-NR]
P value	P = 0.01	P = 0.02	P = 0.19

NR: not reached; OS: overall survival; PFS: progression-free survival.

Conclusion: Pretreatment LIPI correlates with ICI survival in monotherapy and in combination with chemotherapy in front-line in advanced NSCLC pts. The correlation is not statistically significant in the chemotherapy alone group. The value of LIPI for ICI upfront should be explored in prospective clinical trials.

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