



**2020 World Conference
on Lung Cancer Singapore**

wclc2020.IASLC.com | #WCLC20

CONQUERING THORACIC CANCERS WORLDWIDE

Immunotherapy alone or with chemotherapy in advanced NSCLC? Utility of clinical factors and blood-based host immune profiling

Wallace Akerley

**Huntsman Cancer Institute
Salt Lake City, UT, USA**

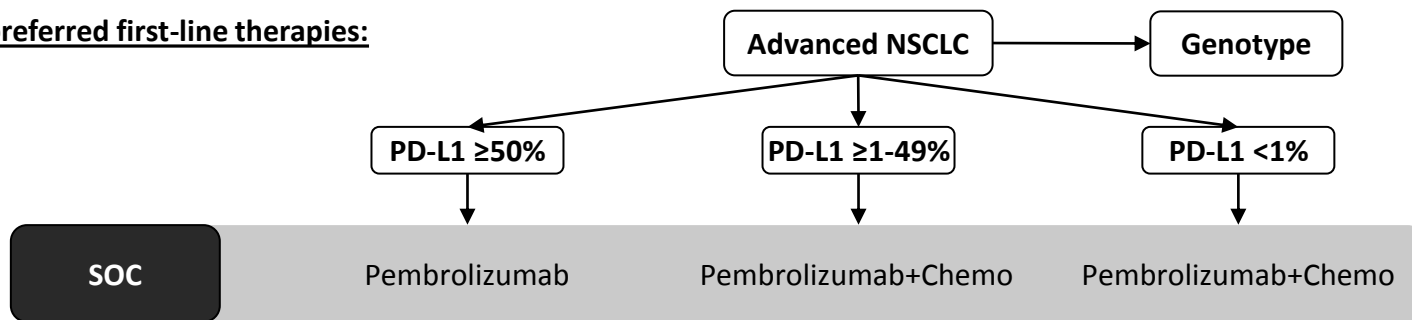


DISCLOSURES

Commercial Interest	Relationship(s)
AstraZeneca	Consultant
Biosesix	Contracted/Support Research Grant
BMS	Contracted/Support Research Grant
Calithera Biosciences	Consultant
Incyte	Contracted/Support Research Grant
Loxo Oncology	Contracted/Support Research Grant

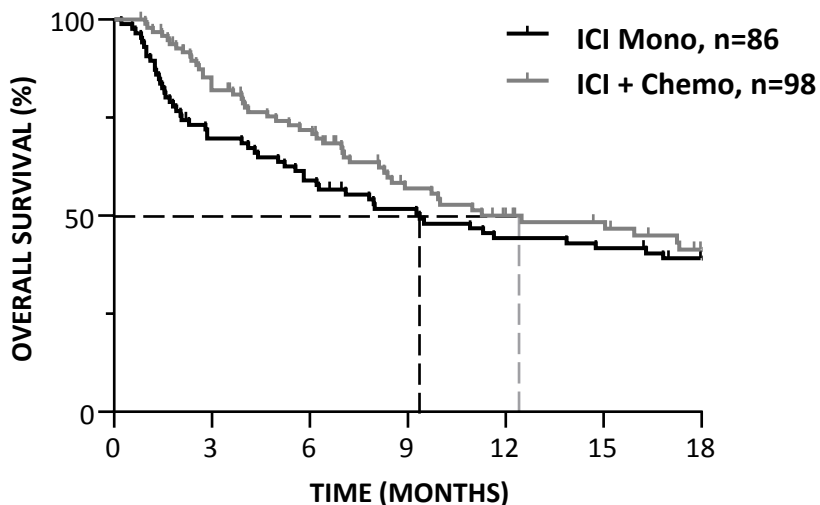


Current preferred first-line therapies:



INSIGHT observational trial (NCT03289780):

- Currently >3700 subjects enrolled across 35 sites in the US (goal n=5000)
- NSCLC of all stages, all histologies, all lines of therapies, all ECOG PS eligible; up to 3-year follow-up
- Host Immune Profiling:
 - Clinically validated, blood-based proteomic classifier that utilizes mass spectrometry and machine learning algorithm to designate labels: HIC-Hot or HIC-Cold
 - HIC-Cold: chronic inflammatory disease state associated with poor prognosis

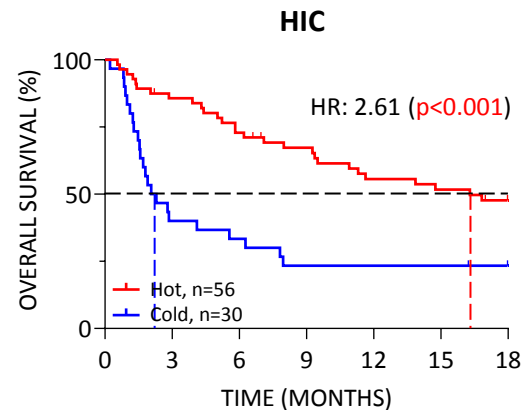
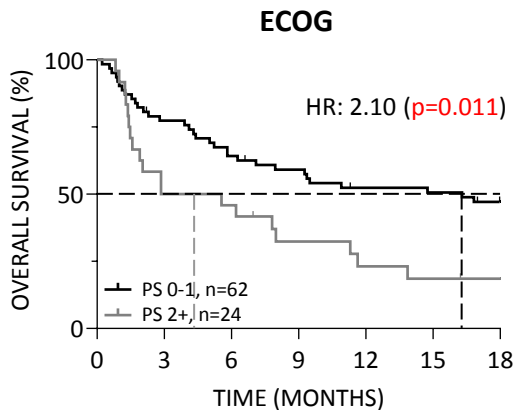
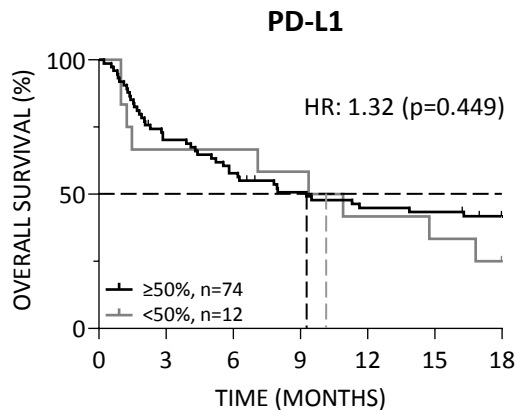


Treatment	mOS in Months (95% CI)	Hazard Ratio (95% CI), CPH p value
ICI Mono	9.4 (5.8-16.8)	0.80 (0.54-1.19), 0.28
ICI + Chemo	12.5 (8.4-und)	

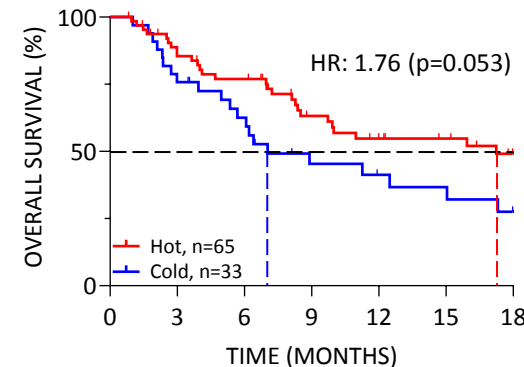
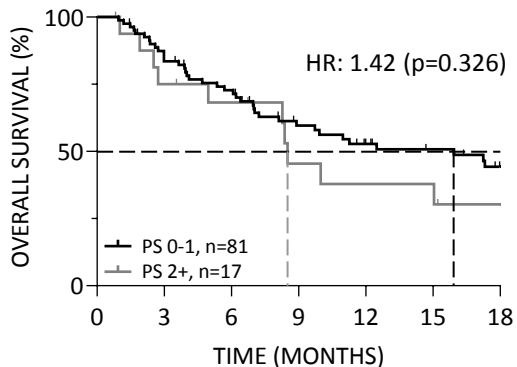
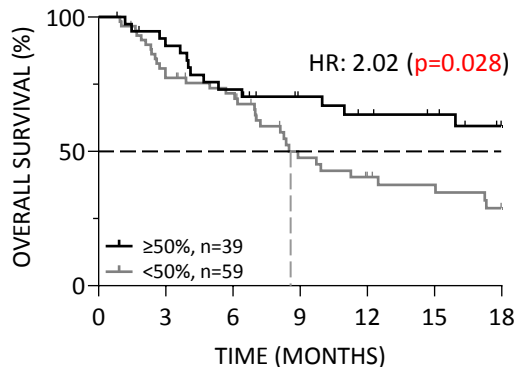
	ICI Mono (N=86)	ICI + Chemo (N=98)
Age (years)	P=0.2831	
Mean (SD)	67.8 (10.6)	66.2 (9.8)
Median (Range)	66.3 (44.9-90.2)	65.4 (36.5-84.7)
Gender, N (%)	P=0.4892	
Female	43 (50%)	44 (45%)
Male	43 (50%)	54 (55%)
Histology, N (%)	P=0.0075	
Adenocarcinoma	58 (67%)	84 (86%)
Squamous	15 (17%)	10 (10%)
NSCLC Other	13 (15%)	4 (4%)
PD-L1 Expression	P<0.0001	
High (≥50%)	74 (86%)	39 (40%)
Low (≥1% and <50%)	7 (8%)	35 (36%)
Negative (<1%)	5 (6%)	24 (25%)
Host Immune Classifier	P=0.8630	
HIC-Hot	56 (65%)	65 (66%)
HIC-Cold	30 (35%)	33 (34%)
ECOG Status	P=0.2268	
PS 0	20 (23%)	27 (28%)
PS 1	42 (49%)	54 (55%)
PS 2+	24 (28%)	17 (17%)



ICI Mono



ICI+Chemo





Multivariate analyses including:

- PD-L1: <50% vs. ≥50%
- HIC: Hot vs. Cold
- ECOG PS: 0-1 vs. 2+
- Age: <65yo vs. ≥65yo
- Histology: adeno vs. other NSCLC
- Smoking History: Ever vs. Never
- Stage: IIIB vs. IV
- Gender

Backward elimination for best fit:

ICI Monotherapy

Variable		HR (95% CI)	p value
HIC:	Cold vs. Hot	3.12 (1.62-6.00)	<0.001
Age:	≥65yo vs. <65yo	2.10 (1.13-3.90)	0.018
PD-L1:	<50% vs. ≥50%	1.78 (0.83-3.82)	0.140
ECOG:	PS 2+ vs. PS 0-1	1.44 (0.75-2.76)	0.269

ICI + Chemotherapy

Variable		HR (95% CI)	p value
Smoking:	Ever vs. Never	2.53 (0.77-8.29)	0.124
PD-L1:	<50% vs. ≥50%	1.85 (0.98-3.47)	0.056
Gender:	Male vs. Female	1.62 (0.90-2.93)	0.110



Combining blood-based Host Immune Profiling, PD-L1 and clinical factors might provide better prediction of response to ICI treatments and could guide treatment selection.

Proposed addition to treatment algorithm:

