

XXIV

SIMPOSIO DE REVISIONES EN CÁNCER

“Tratamiento médico del cáncer en el año 2022”

Retos del abordaje del paciente con CPNM metastásico para garantizar la supervivencia a largo plazo y calidad de vida

Dr. Antonio Calles
Servicio de Oncología Médica



 Hospital General Universitario
Gregorio Marañón

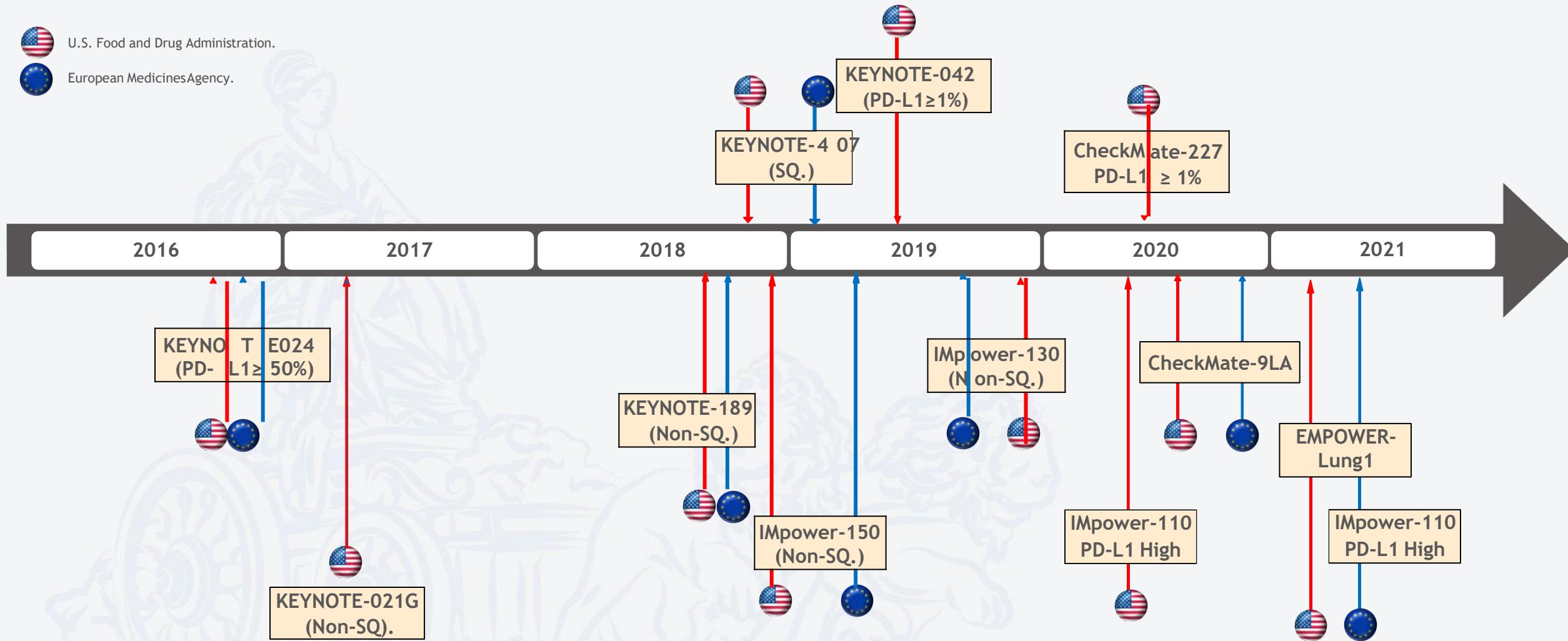
ARÁN 

Conflictos de interés

- ❑ **Honoraria:** AstraZeneca, Boehringer-Ingelheim, Pfizer, Roche, Novartis, Merck Sharp & Dohme, and Bristol-Myers Squibb.
- ❑ **Consulting or advisory role:** AstraZeneca, Boehringer-Ingelheim, Pfizer, Roche/Genentech, Eli Lilly and Company, Novartis, Takeda, Merck Sharp & Dohme, and Bristol-Myers Squibb.
- ❑ **Research funding:** Merck Sharp & Dome.
- ❑ **Travel financial support:** Roche, Boehringer-Ingelheim, Merck Sharp & Dohme, and Bristol-Myers Squibb.

The rapidly evolving immunotherapy landscape in 1st line NSCLC

-  U.S. Food and Drug Administration.
-  European Medicines Agency.

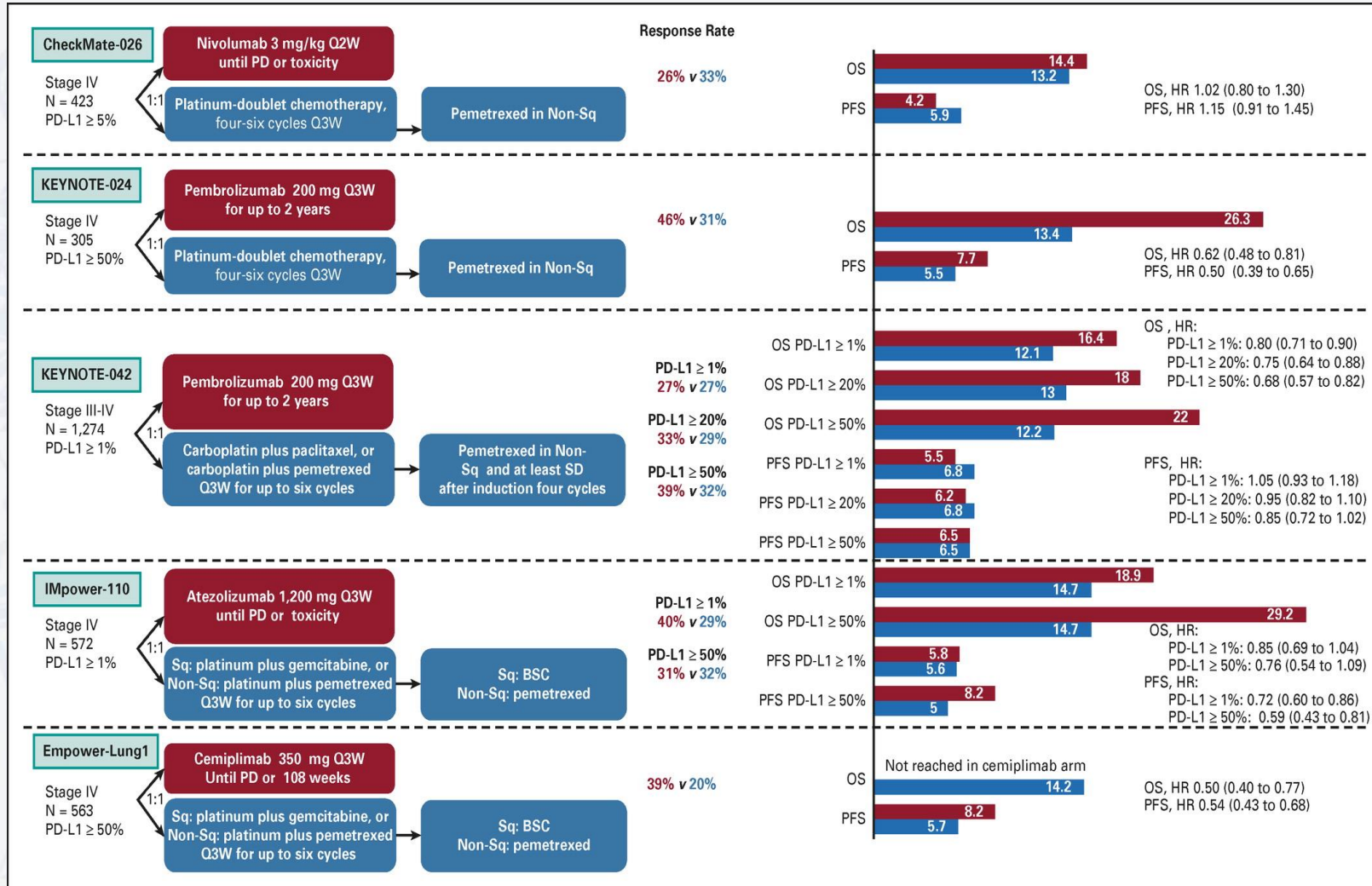


*IMpower 150, is approved in EGFR/ALK wild-type tumours by FDA, whereas EMA includes this subgroup after failure to TKII

Esquema de la presentación

1. IO en monoterapia
2. IO en combinación
3. Selección de la terapia por histología y PD-L1
4. Metástasis cerebrales
5. Largos supervivientes
6. Conclusiones

ICI alone in 1L NSCLC (Squamous & Non-Squamous)



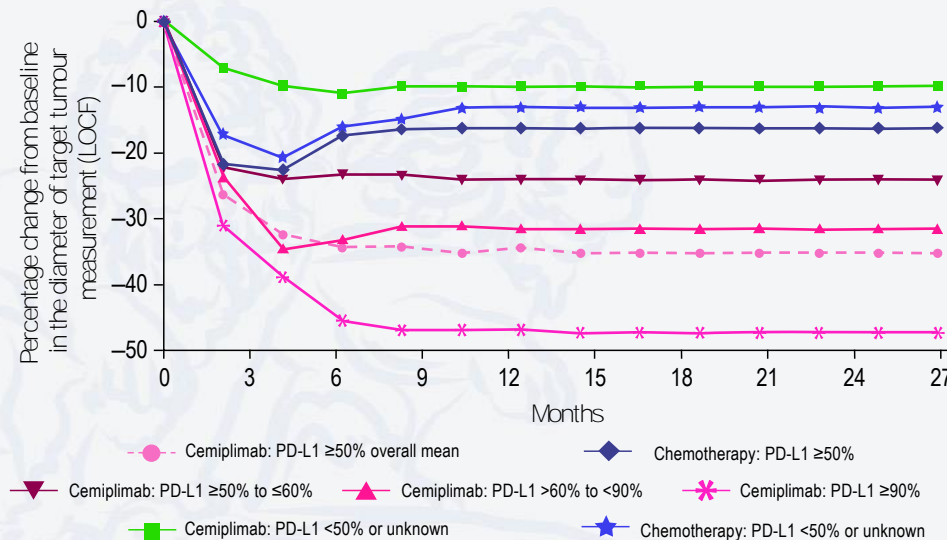
The Benefit of I-O Monotherapy Is Established in NSCLC With High PD-L1 Expression

Outcomes in NSCLC With High PD-L1 Expression

Trial	Treatment	PD-L1	ORR	Median PFS	Median OS
KEYNOTE-024 ^{1,2}	Pembrolizumab (n=154)	≥50%	44.8%	10.3 mo	30 mo
IMpower110 ³	Atezolizumab (n=107)	TC3; IC3	38.3%	8.1 mo	20.2 mo
EMPOWER-Lung 1 ^{4,5}	Cemiplimab (n=283)	≥50%	39.2%	8.2 mo	NR

- Most PD-L1 IHC clones interchangeable for TC score (TPS)
- PD-L1 levels of expression matter
- Never-smoker: wait for tumor genotype, lack of efficacy or sequential toxicity if driver mutation
- Benefit seen in KRASmut LUAC or hTMB
- Benefit in previously treated CNS mets, unresectable stage III not amenable for radiotherapy, elderly, or PS2

- Correlation of Change in Target Tumour Volume and ORR with Baseline PD-L1 Levels



PD-L1 levels	ORR, % (95% CI)
≥90%	45.9 (35.8–56.3) vs 18.1 (10.9–27.4)
>60 to <90%	39.3 (29.1–50.3) vs 20.0 (12.3–29.8)
≥50 to ≤60%	32.3 (23.1–42.6) vs 22.9 (15.0–32.6)
50% or unknown	26.0 (16.5–37.6) vs 21.6 (12.9–32.7)



Long-term survival achieved in 1/3 pts with IO monotherapy... but another 1/3 die during the 1st year

KN-024, 5-year OS update

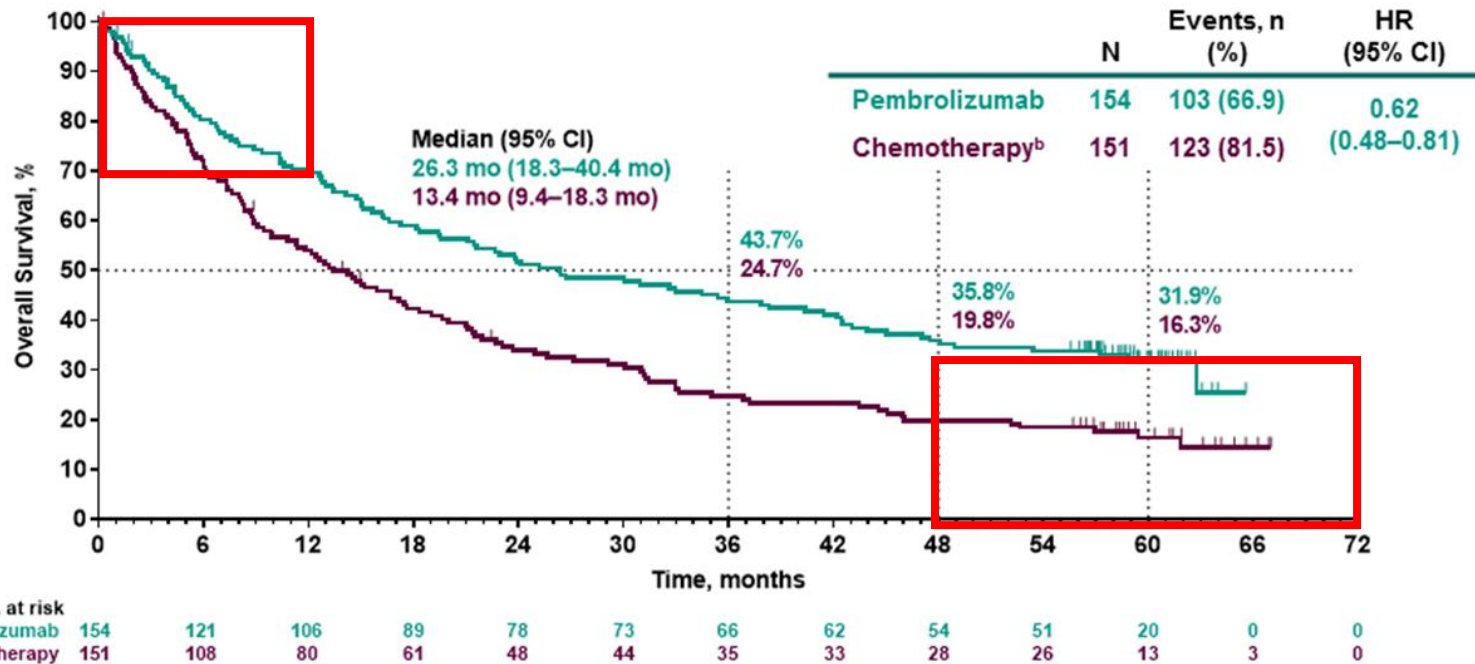
J Brahmer. ESMO 2020

Overall Survival^a

Strategies to improve OS

anti-CTLA4, TGF- β trap (bintrafusp alfa), anti-TIGIT, chemotherapy, anti-VEGF

- Failed
- No ph3 RCT



^aITT population.

^bEffective crossover rate from chemotherapy to anti-PD-(L)1 therapy, 66.0% (99 patients in total crossed over to anti-PD-[L]1 therapy: 83 patients crossed over to pembrolizumab during the study, and 16 patients received subsequent anti-PD-[L]1 therapy outside of crossover; patients may have received >1 subsequent anti-PD-[L]1 therapy). Data cutoff: June 1, 2020.

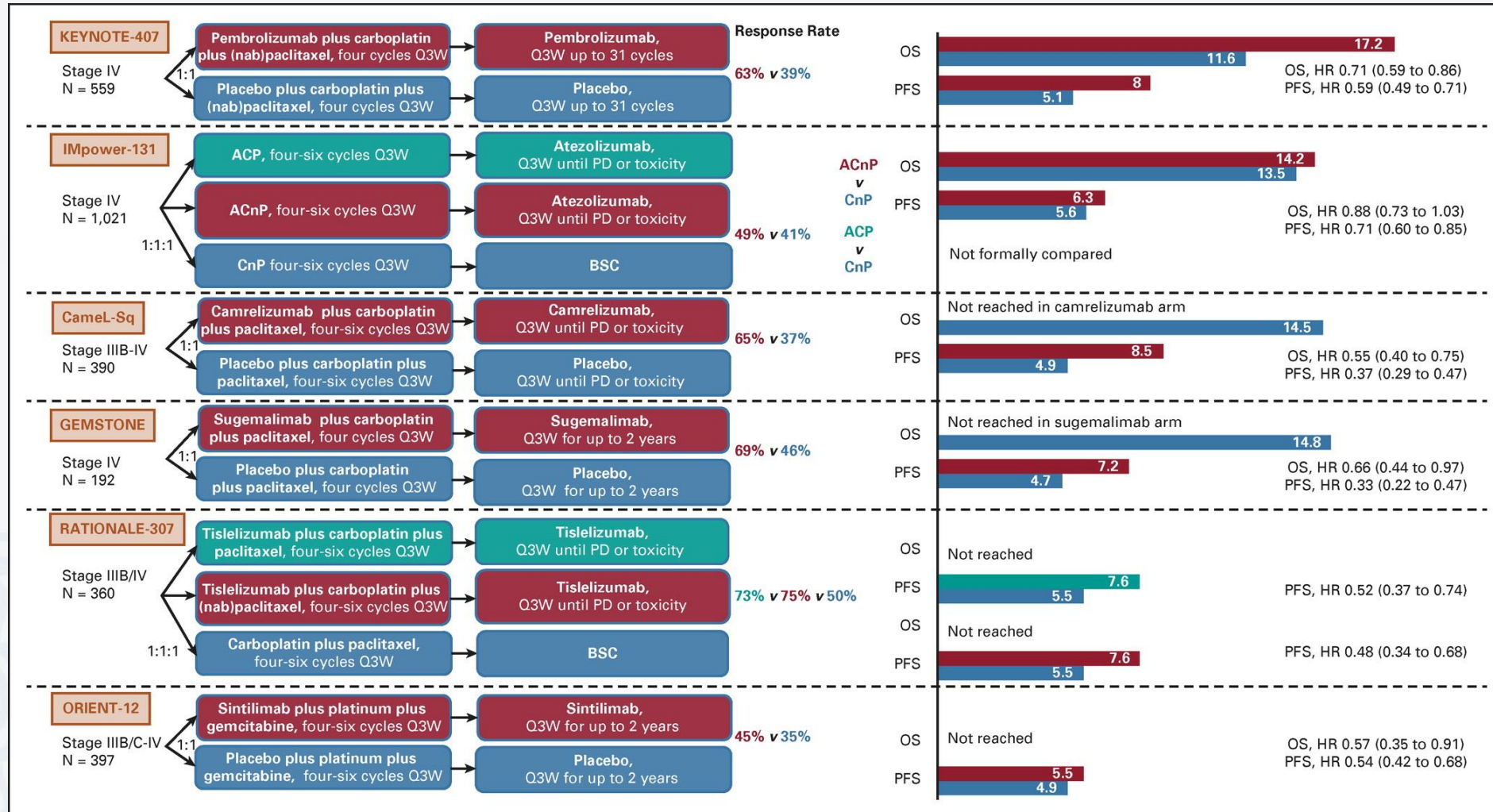
Characteristics of LT survivors

Completion of 2y of treatment
CR/RP as best response

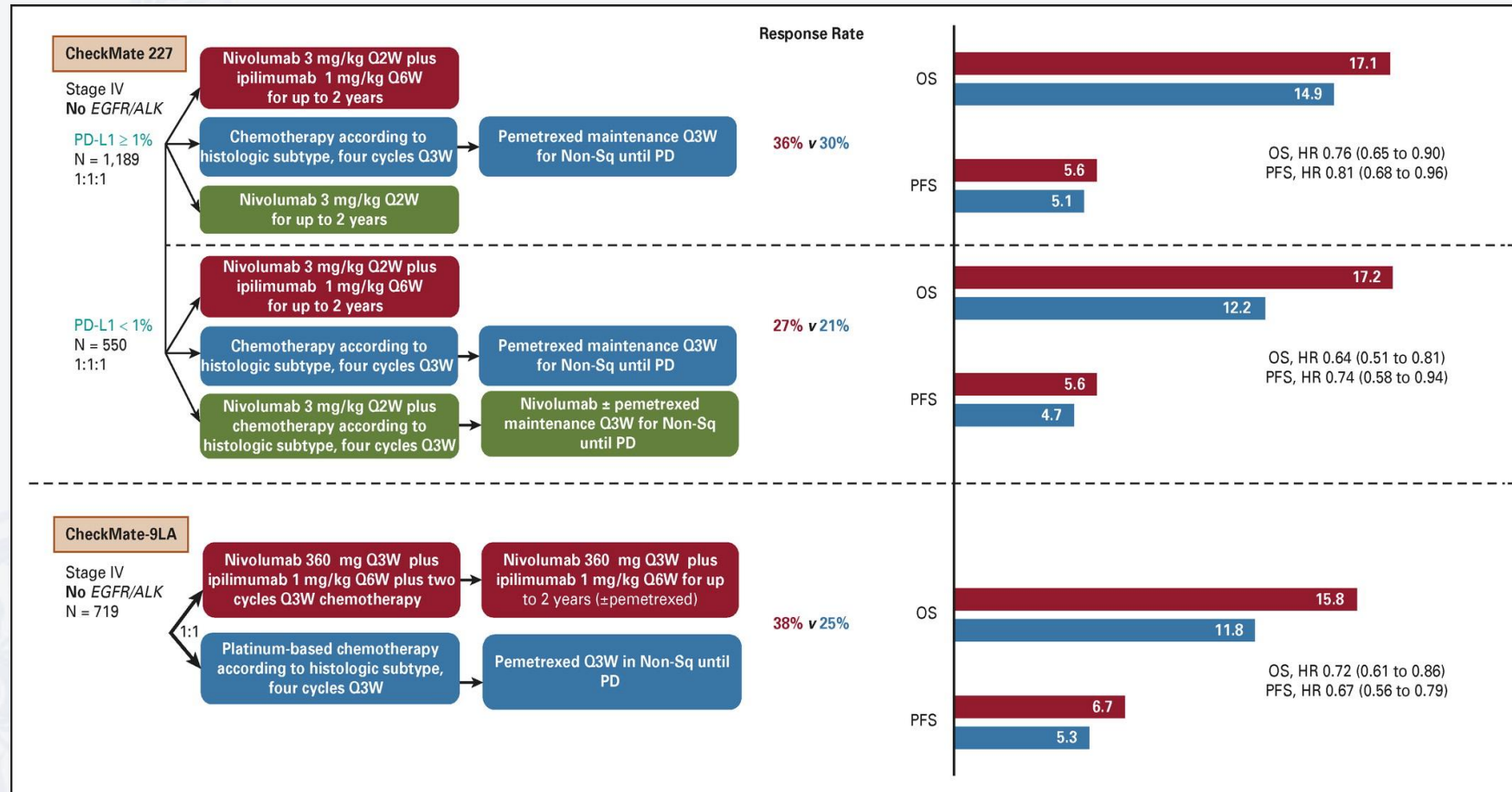
Inmuno-chemotherapy in 1L Non-Squamous NSCLC



Inmuno-chemotherapy in 1L Squamous NSCLC

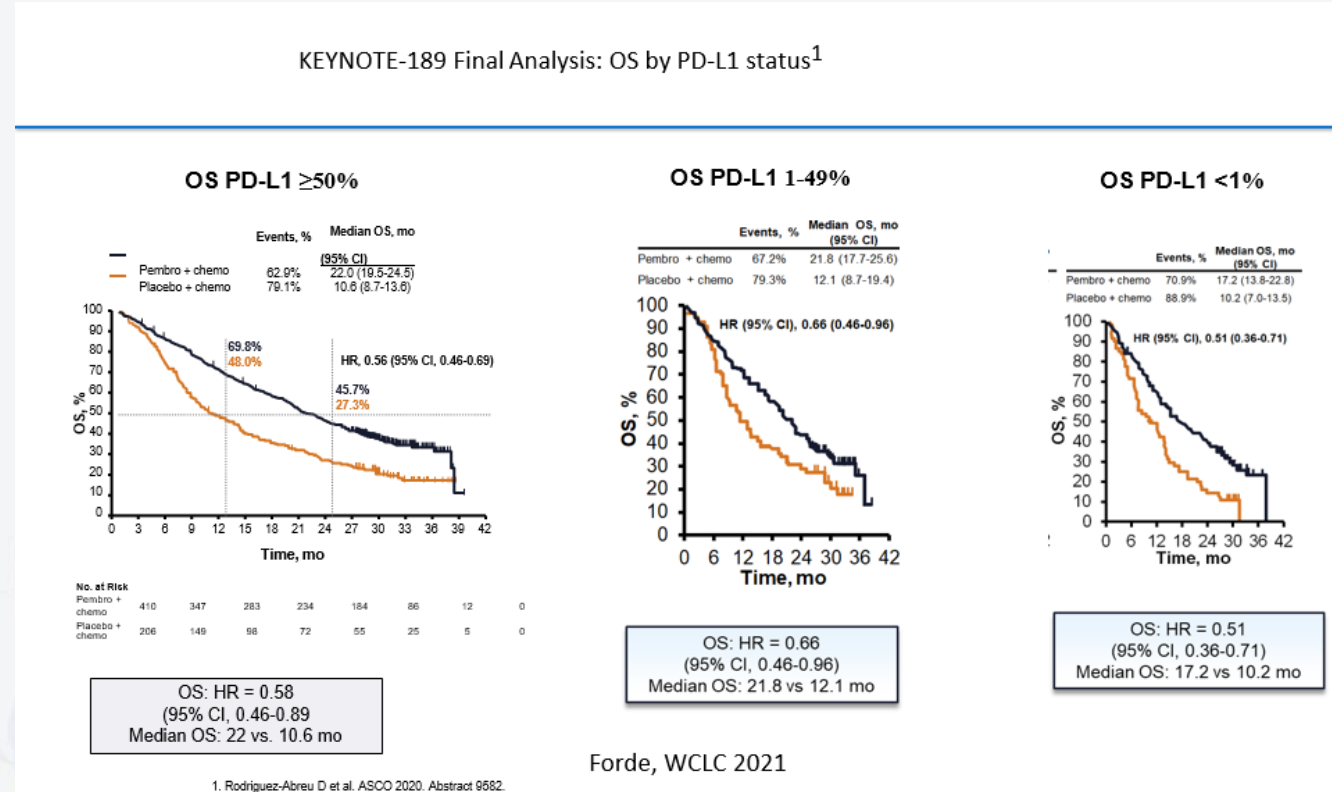


Inmuno+Inmuno +/- chemotherapy in 1L NSCLC

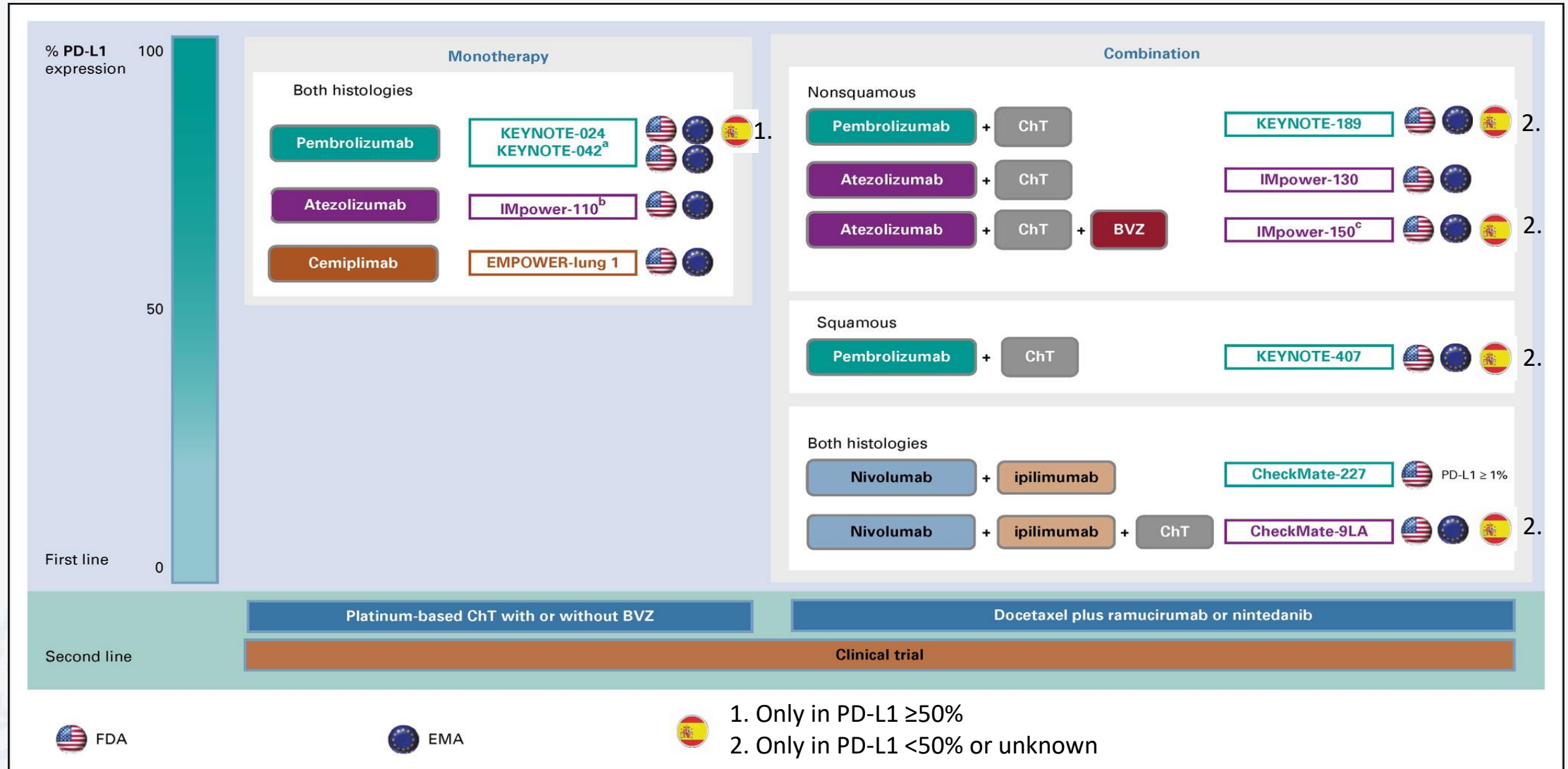


The Benefit of I-O Combinations Is Established in NSCLC regardless of PD-L1 expression

- Evita riesgo de progresión precoz/HPD
- Beneficio menos dependiente de PD-L1, TMB, carga tumoral o biología
- Incremento toxicidad asociado a quimioterapia o anti-CTLA4
- 2 ciclos de quimioterapia + IO podría ser suficiente
- Suspensión de IO por irAE no tiene por qué impactar negativamente en OS
- Largos supervivientes: CR/PR, completar tratamiento



First-line IO in Stg IV NSCLC by histology & PD-L1 ...and availability



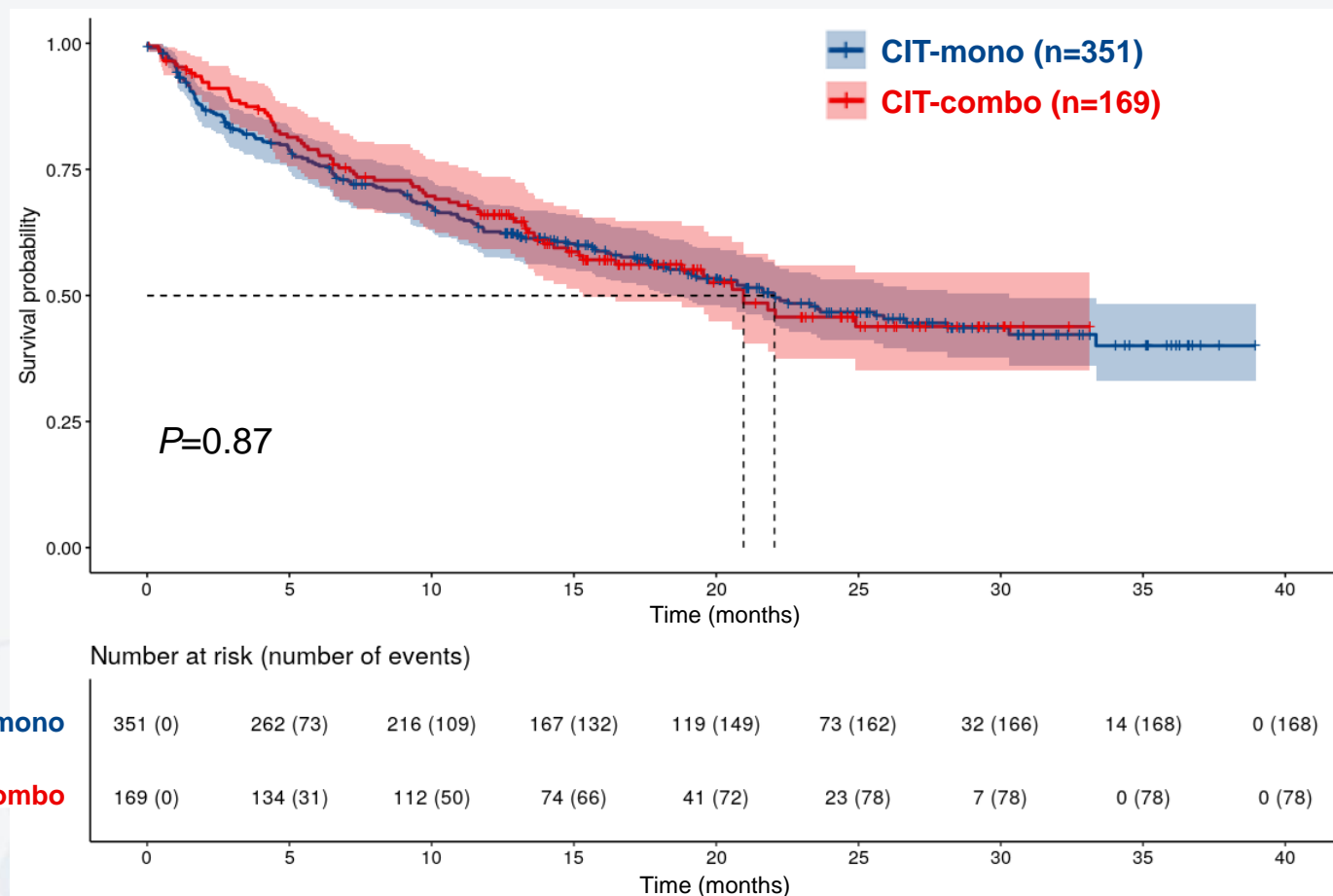
PD-L1 ≥50% NSCLC, IO alone is sufficient

Unadjusted analysis

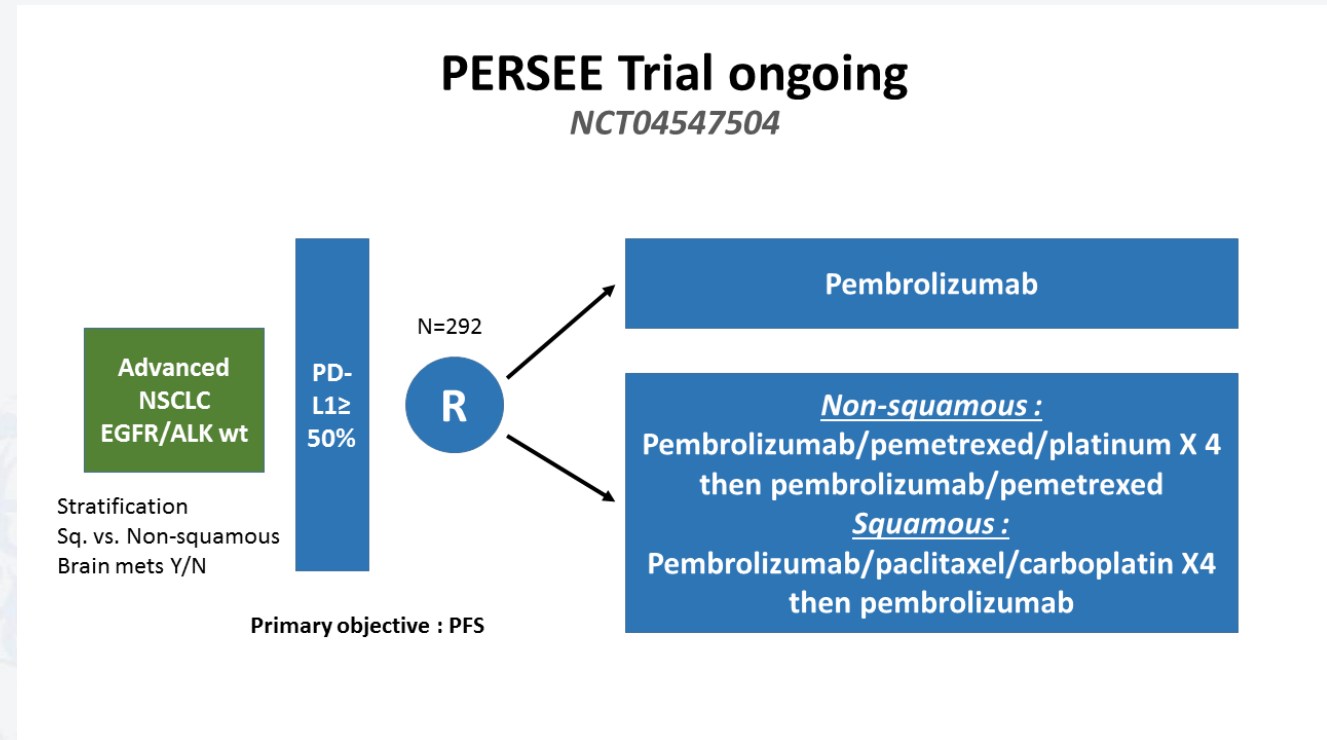
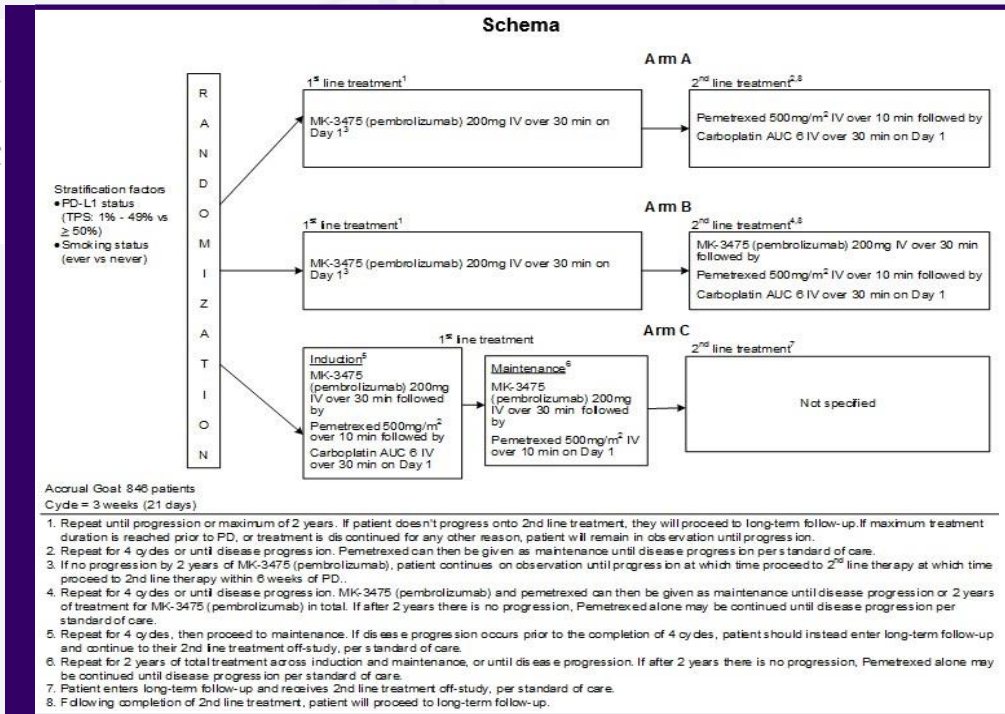
	CIT-mono (n=351)	CIT-combo (n=169)
Events, n (%)	168 (49)	78 (46)
OS, mo Median (95% CI)	22.05 (18.33, 30.29)	20.96 (15.31, NA)
Follow-up, mo Median (IQR)	23.46 (15.74, 28.71)	19.92 (14.92, 26.25)

CIT-combo vs CIT-mono (reference)	Hazard ratio (95% CI)	P value
Unadjusted analysis	0.98 (0.75, 1.28)	0.868
Adjusted analysis	1.03 (0.77, 1.39)	0.833

PD-L1 ≥ 50%



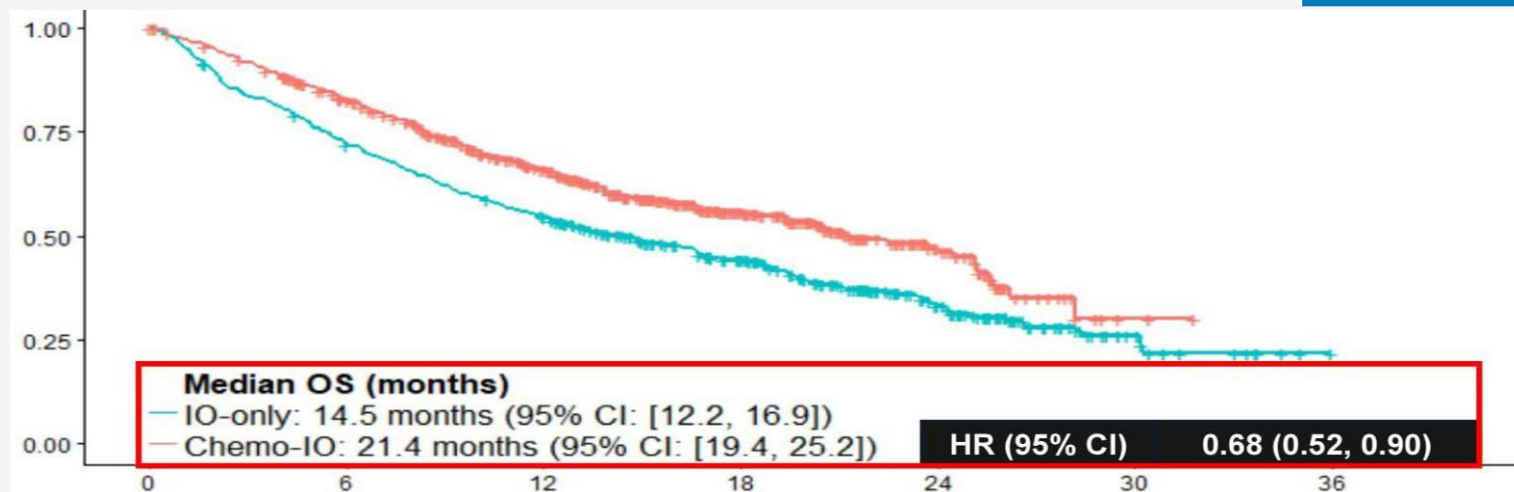
EA5163/S1709/INSIGNA



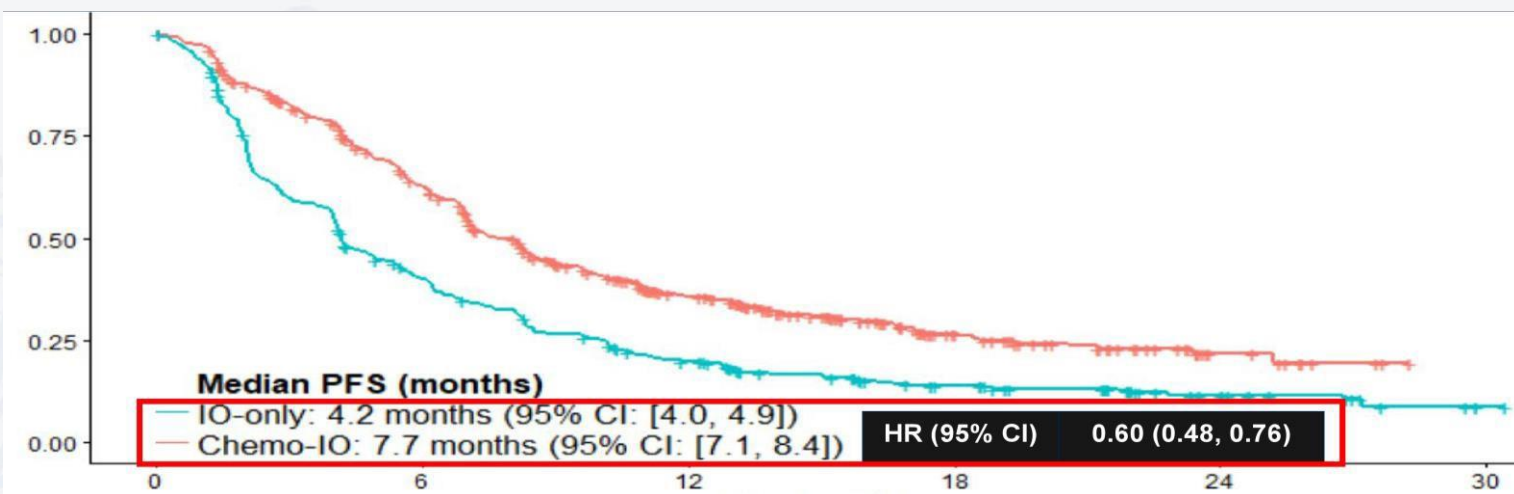
Trial*
Immunotherapy-only (PD-L1 ≥1%)
KEYNOTE-042
CHECKMATE-227
Chemo-immunotherapy
KEYNOTE-189
KEYNOTE-407
KEYNOTE-021 (cohort G)
IMPOWER-150**
IMPOWER-130
CA2099LA

Chemo-IO, N=530.
IO-only, N=239

OS



PFS



What IO-combo is better?

Median OS (HR)

Study	PD-L < 1%	PD-L1 1-49%	PD-L1 ≥ 50%
CM-227	17.2 (0.62)	15.1 (0.94)	21.2 (0.66)*
9LA	16.8 (0.62)	15.4 (0.61)	18.9 (0.67)
KN-189, 021, 407#	19 (0.63)	-	-
KN-189	17.2 (0.51)	21.8 (0.66)	22 (0.58)
KN-024	-	-	26.3 (0.62)\$

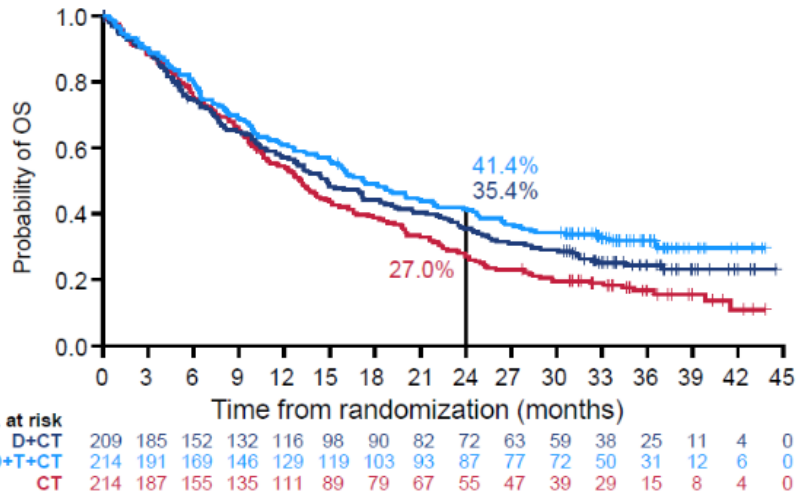
Pooled analysis; *Four Year FU; \$ Five yr OS

Hellman, NEJM, 2019; Paz-Ares. Lancet Onc, 2021; Borghaei, Cancer 2020; Gandhi, NEJM 2018, Brahmer ESMO 2020, Paz-Ares, ASCO 2021; Rodrigues-Abreu ASCO 2020

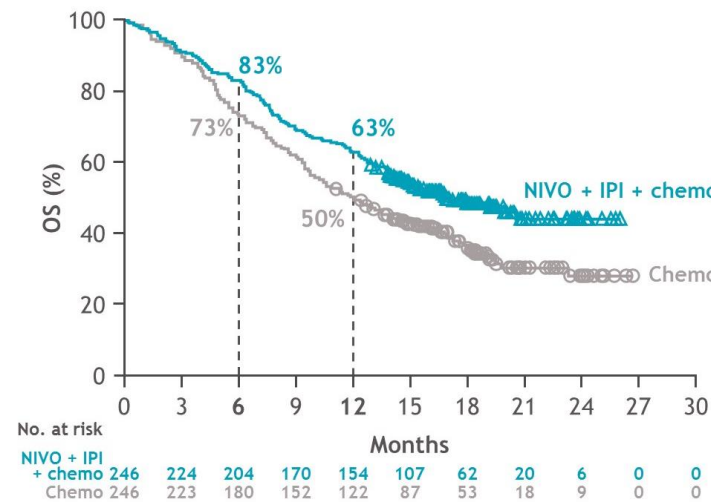
OS in Patients With Nonsquamous NSCLC

	POSEIDON^{1,a}	CM9LA^{2,b}	KN189^{3,c}
OS HR (95% CI)	D + T + CTx: 0.70 (0.56-0.87)	0.69 (0.55-0.87)	0.56 (0.46-0.69)
OS median, m	17.2 vs 13.1	17.0 vs 11.9	22.0 vs 10.6

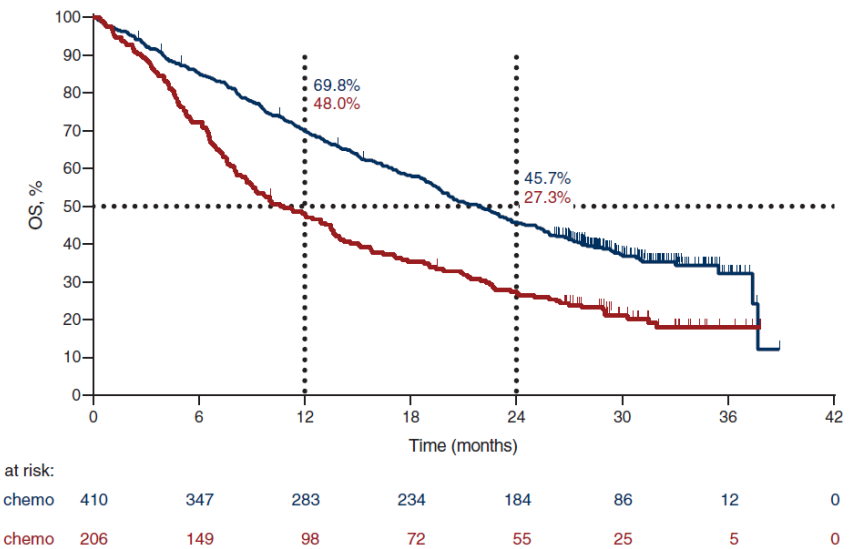
POSEIDON



CheckMate 9LA



KEYNOTE-189



^aMedian follow-up in censored patients at data cutoff: 34.9 months (range: 0-44.5).¹ ^bMinimum follow-up of 12.7 months.² ^cMedian follow-up of 31.0 months.³

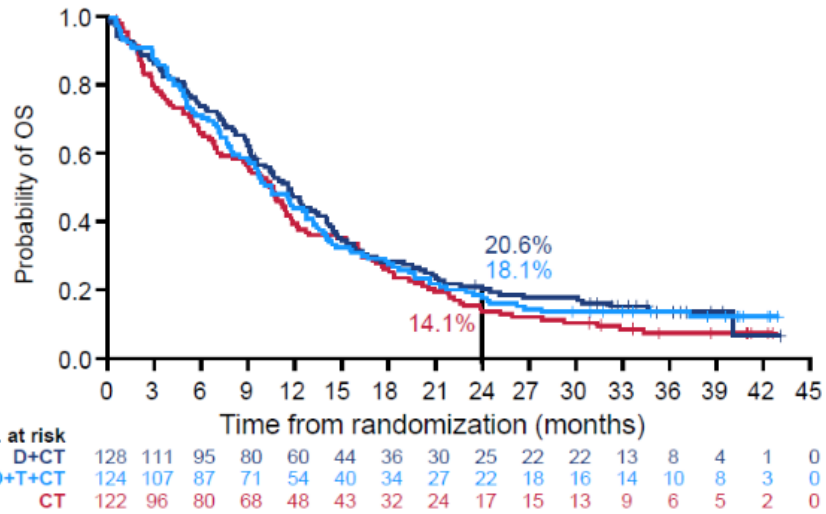
D, durvalumab; CI, confidence interval; CM9LA, CheckMate 9LA; CT/CTx/chemo, chemotherapy; HR, hazard ratio; KM, Kaplan-Meier; KN189, KeyNote 189; NSCLC, non-small cell lung cancer; OS, overall survival; pembro, pembrolizumab.

1. Johnson ML, et al. Presented at: 2021 World Conference on Lung Cancer; September 8-14, 2021; virtual. 2. Reck M, et al. Presented at: ASCO 2020; May 29-June 2, 2020; virtual. Abstract 9501000. 3. Rodríguez-Abreu D. *Ann Oncol.* 2021;32(7):881-895.

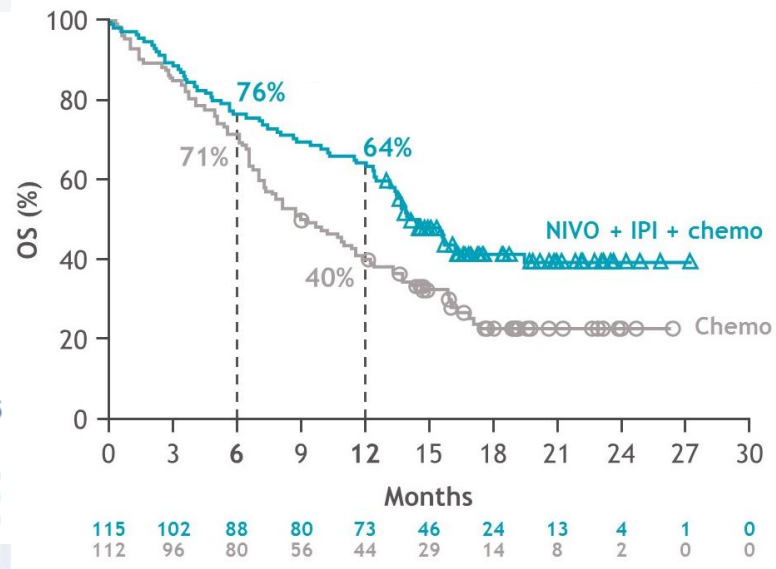
OS in Patients With Squamous NSCLC

	POSEIDON ^{1,a}	CM9LA ^{2,b}	KN407 ^{3,c}
OS HR (95% CI)	D + T + CTx: 0.88 (0.68-1.16)	0.62 (0.45-0.86)	0.71 (0.58-0.88)
OS median, m	10.4 vs 10.5	14.5 vs 9.1	17.1 vs 11.6

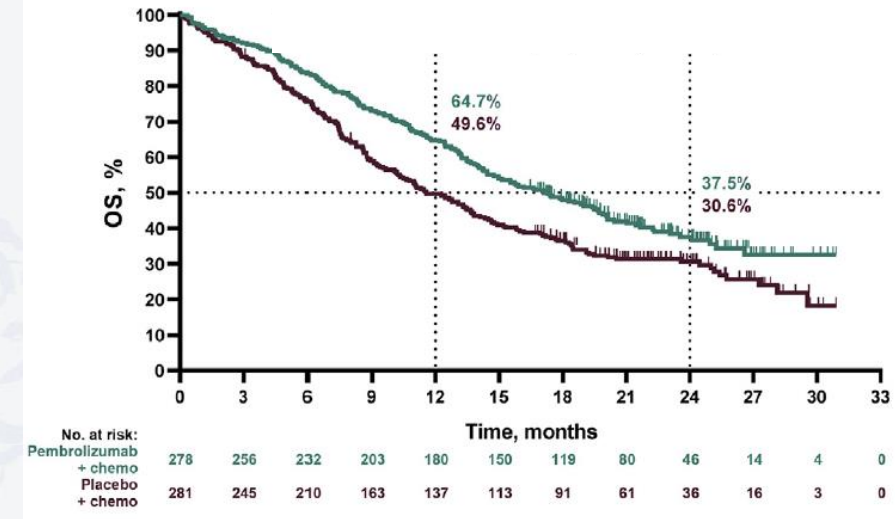
POSEIDON



CheckMate 9LA



KEYNOTE-407



^aMedian follow-up in censored patients at data cutoff: 34.9 months (range: 0-44.5). ¹Minimum follow-up of 12.7 months. ²Median follow-up of 14.3 months (range: 0.1-31.3). ³

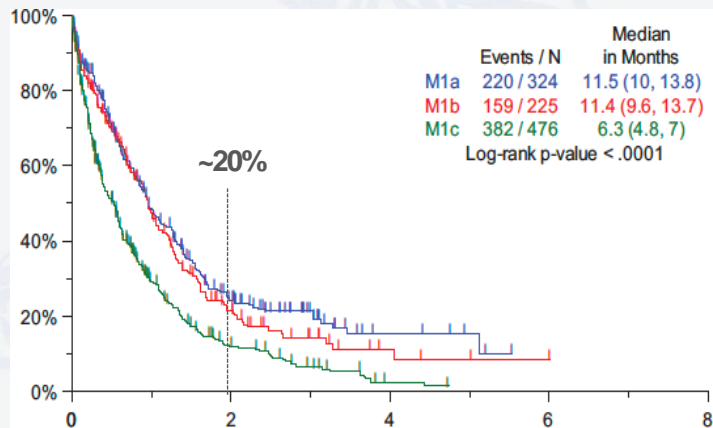
CI, confidence interval; CM9LA, CheckMate 9LA; CT/CTx/chemo, chemotherapy; D, durvalumab; HR, hazard ratio; KN407, KeyNote 407; NSCLC, non-small cell lung cancer; OS, overall survival; T, tremelimumab.

1. Johnson ML, et al. Presented at: 2021 World Conference on Lung Cancer; September 8-14, 2021; virtual. Reck M, et al. Presented at: ASCO 2020; May 29-June 2, 2020; virtual. 3. Paz-Ares L, et al. *J Thorac Oncol.* 2020;15(10):1657-1669.

Combos improve outcomes, long-term survivors

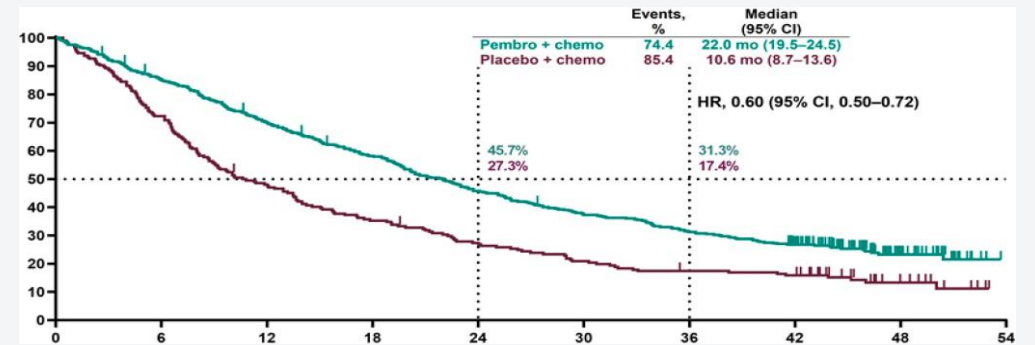
2-year OS in Stage IV 8th TNM is ~20%

Proposed	Events / N	MST	24 Month	60 Month
IA1	68 / 781	NR	97%	92%
IA2	505 / 3105	NR	94%	83%
IA3	546 / 2417	NR	90%	77%
IB	560 / 1928	NR	87%	68%
IIA	215 / 585	NR	79%	60%
IIB	605 / 1453	66.0	72%	53%
IIIA	2052 / 3200	29.3	55%	36%
IIIB	1551 / 2140	19.0	44%	26%
IIIC	831 / 986	12.6	24%	13%
IVA	336 / 484	11.5	23%	10%
IVB	328 / 398	6.0	10%	0%



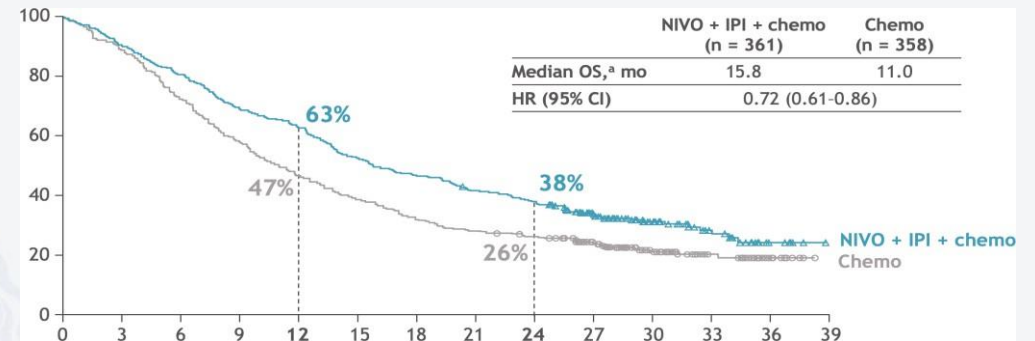
KEYNOTE 189

2-yOS: 46%



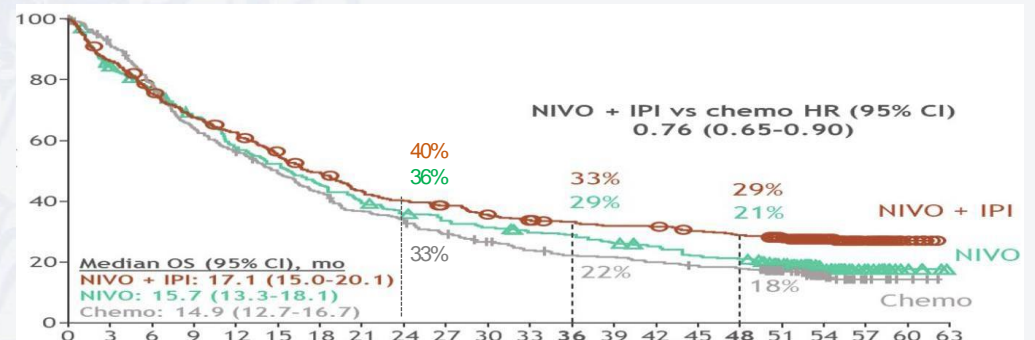
CheckMate9LA

2-yOS: 38%

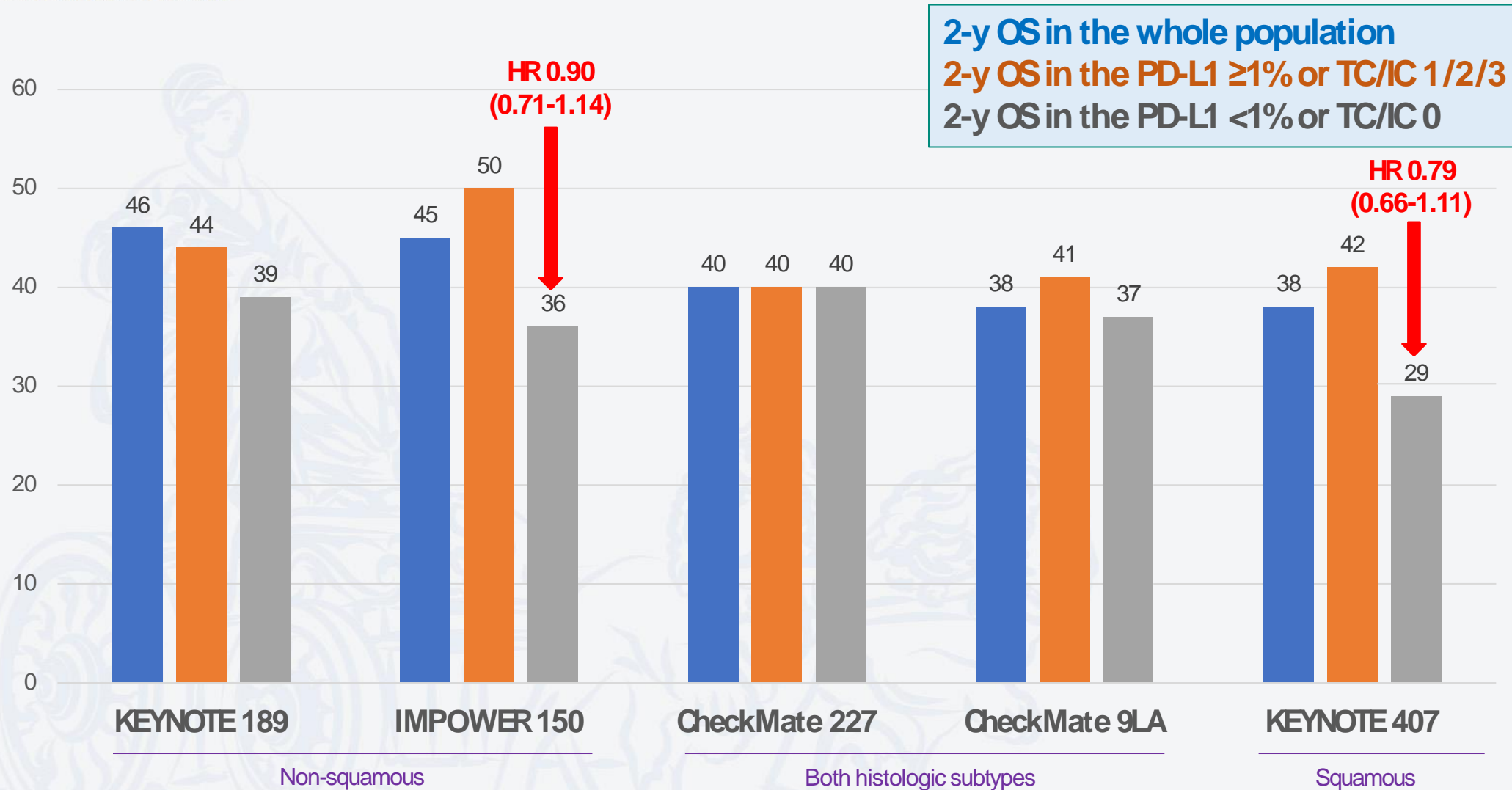


CheckMate227
(PD-L1≥1%)

2-yOS: 40%



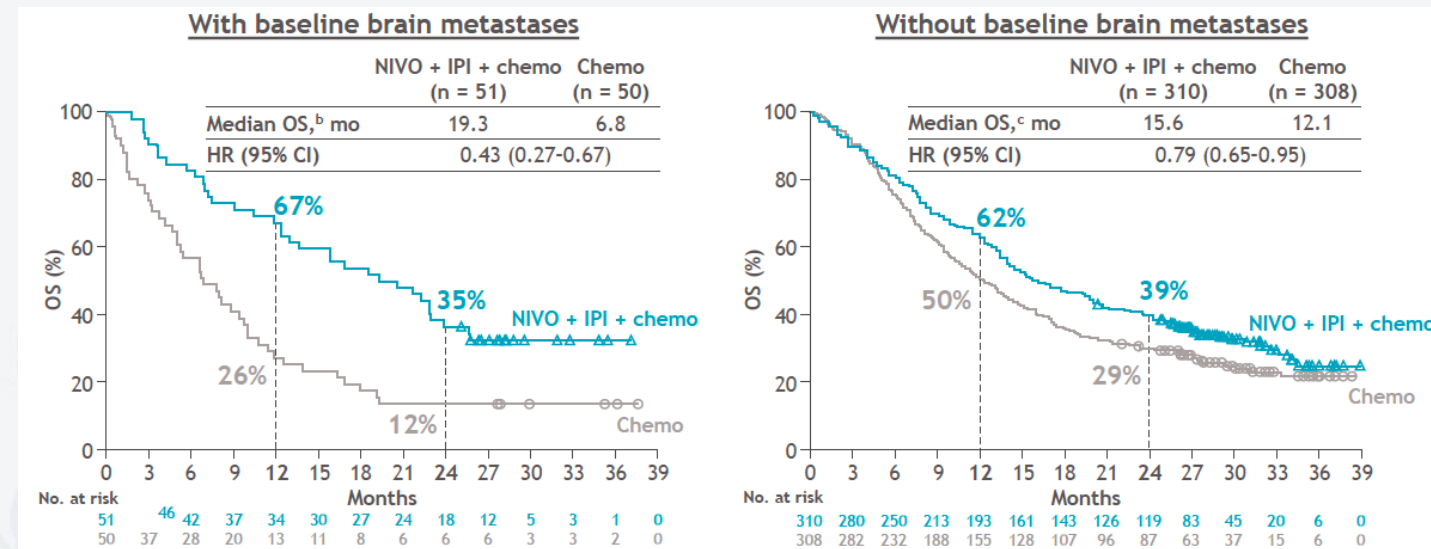
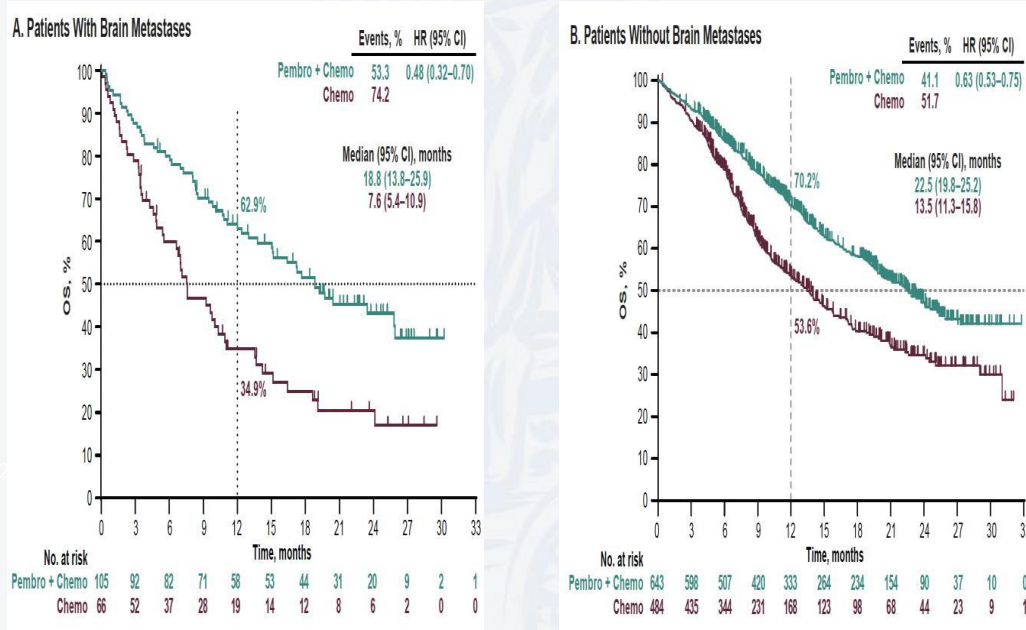
Similar 2-year OS regardless of the strategy



Brain metastases and chemo-immunotherapy (selected population)

Pooled analyses KN021, KN189, KN407

CM-9LA



Untreated brain metastasis and chemo-immunotherapy ATEZOBRAIN TRIAL (SLCG-GECP)

Single arm phase II clinical trial

Key Eligibility Criteria:

Stage IV non-squamous NSCLC
Untreated brain metastases
Treatment naïve
EGFR/ALK negative, any PD-L1
ECOG PS 0-1
Anticonvulsivants and dexamethasone
≤ 4 mg qd allowed
Measurable systemic and brain lesion/s

Carboplatin (5 AUCs) +
Pemetrexed 500mg/m² +
Atezolizumab 1200mg
Q3W for 4-6 cycles



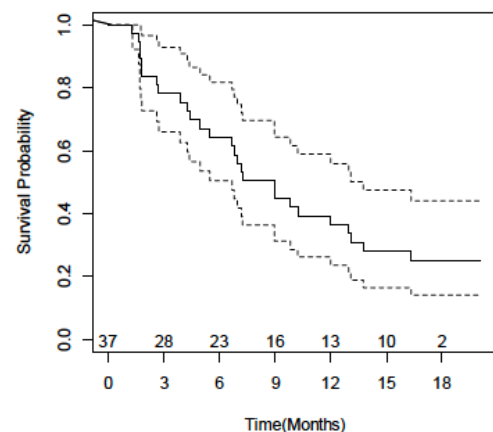
Pemetrexed 500mg/m² +
Atezolizumab 1200mg Q3W
until tumor progression (*),
unacceptable toxicity or 2 years

Tumor evaluation by body CT scan and brain MRI Q6W
until the 12th week and thereafter Q9W until PD

(*) If exclusive CNS PD, patients could continue on study after brain RT

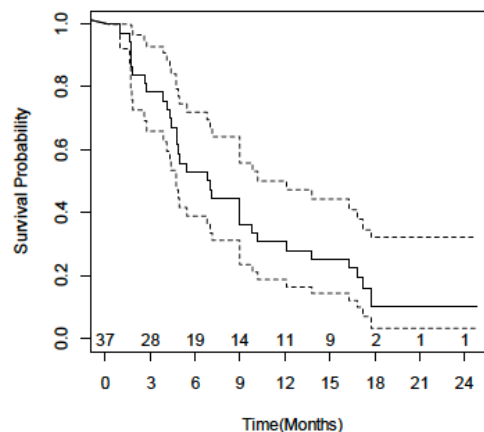
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Systemic PFS by RECIST v1.1



Median PFS = 8.9 months (95% CI 6.7- 13.8)
18 months PFS rate = 24.9%

Intracranial PFS by RANO-BM



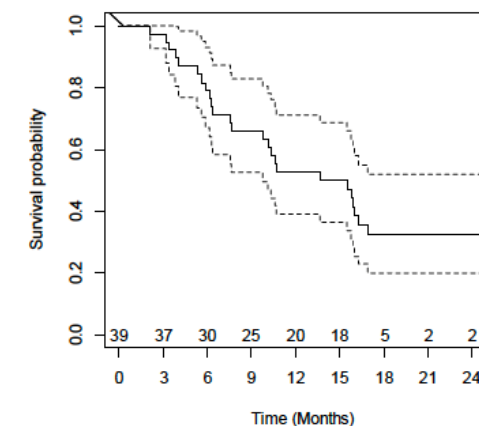
Median icPFS = 6.9 months (95% CI 4.7 – 12.1)
18 months icPFS rate = 10.4%

	Best Intracranial Response (RANO-BM)	Best Systemic Response (RECIST v1.1)
CR	4 (10%)	0
PR	12 (30%)	19 (47.5%)
SD	19 (47.5%)	16 (40%)
PD	4 (10%)	3 (7.5%)
NE	1 (2.5%)	2 (5%)
ORR	16 (40%)	19 (47.5%)

Only 4 patients had discordance among systemic and CNS response:

- 2 with PD in body and SD in brain
- 2 with PD in brain and PR in body

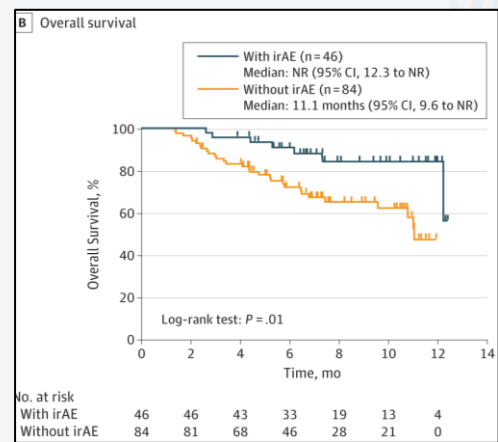
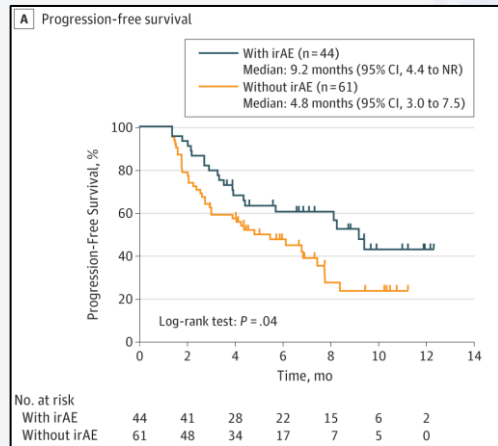
Overall Survival



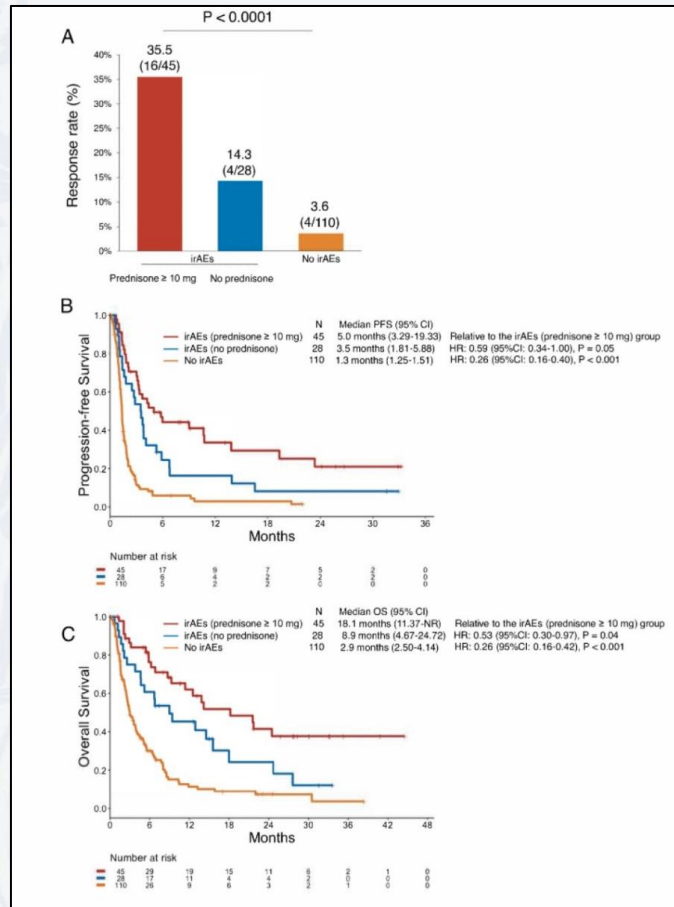
Median OS = 13.6 (95% CI 9.7 – NR)
2y OS rate = 32%

irAEs and Response to Immunotherapy Associated with PFS and OS benefit

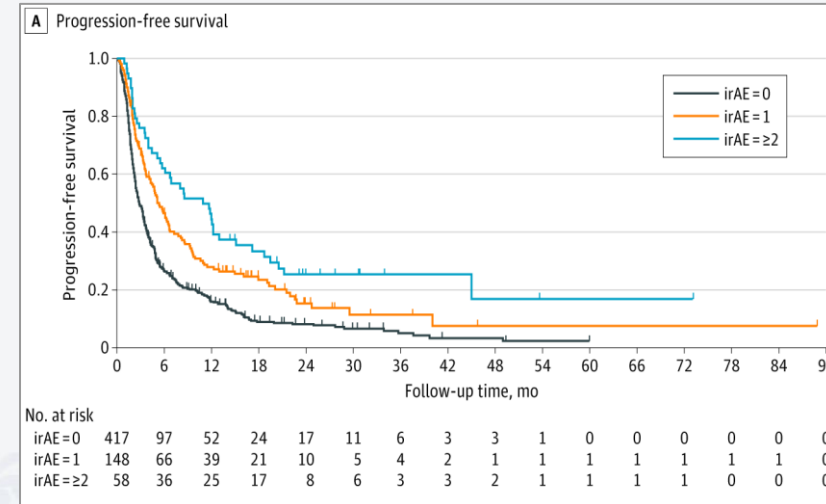
NSCLC



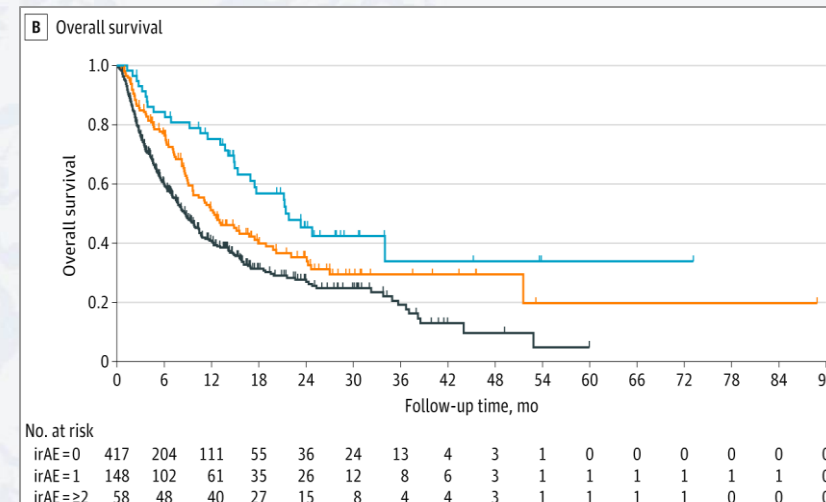
SCLC



Multisystem irAEs (NSCLC)



1 irAE: HR 0.67
 $p = 0.001$
 ≥ 2 irAEs: HR 0.38
 $p < 0.001$



1 irAE: HR 0.86
 $p = 0.253$
 ≥ 2 irAEs: HR 0.56
 $p = 0.005$

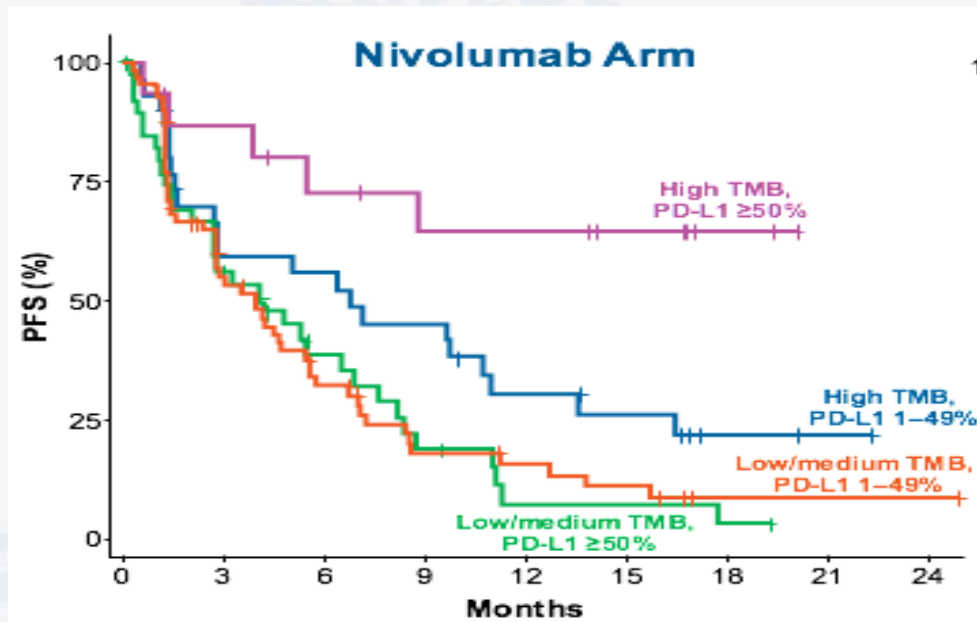
Haratani et al, JAMA Oncol 2018

Ricciuti et al, JTO CRR 2021

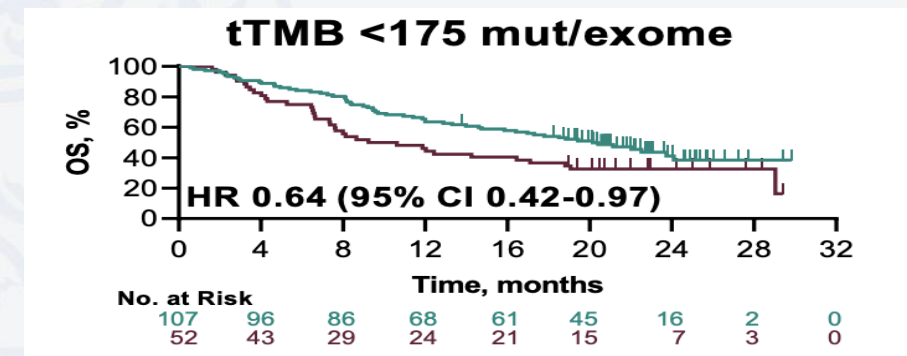
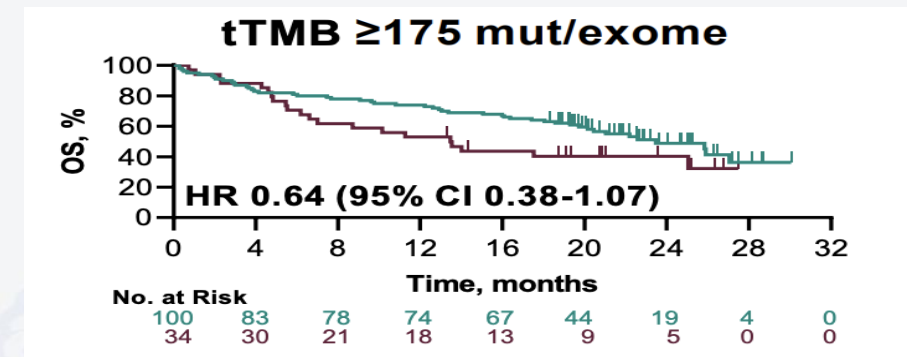
Shankar, Naidoo et al, JAMA Oncol 2020

Tumor Mutational Burden (TMB) to predict benefit from ICI

In combination with anti-CTLA4
CM-227



In combination with chemotherapy
KN-189

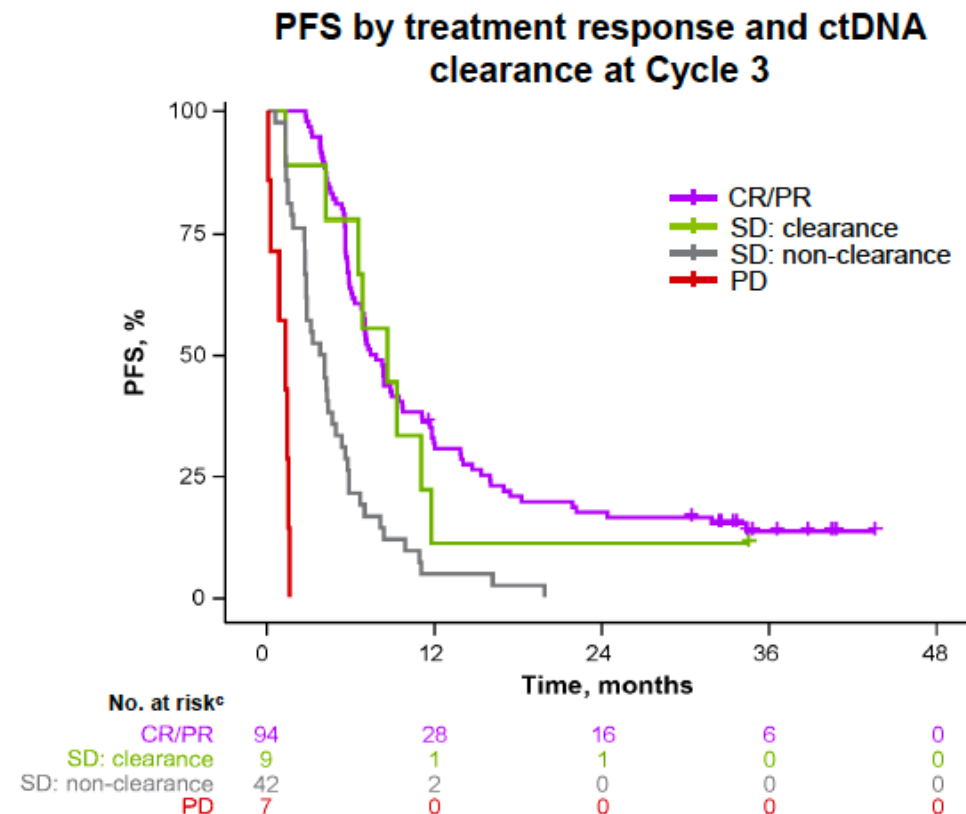


ctDNA clearance^a can risk stratify patients with SD

- 30.4% of patients clear pathogenic driver ctDNA mutations with treatment
- Clearance of ctDNA at Cycle 3 can risk stratify patients with SD

ctDNA clearance at Cycle 3 identifies patients with SD who have improved PFS

	All patients	CR/PR	SD	PD
PFS HR^{b,c}	0.79	1.08	0.41	<0.01
(95% CI)	(0.54, 1.17)	(0.67, 1.76)	(0.19, 0.89)	(0, infinity)
Median PFS for Cycle 3 non-clearance vs clearance, months	5.7 vs 7.2	8.2 vs 7.2	3.9 vs 8.5	0.8 vs 1.5



^a ctDNA clearance was assessed in patients who were ctDNA+ at baseline; "clearance" was defined as becoming ctDNA- at a later on-treatment time point, and "non-clearance" was defined as remaining ctDNA+ at all on-treatment time points. ^b Reference population: patients with no ctDNA clearance. ^c Data in training dataset from all 3 IMpower150 treatment arms were pooled.

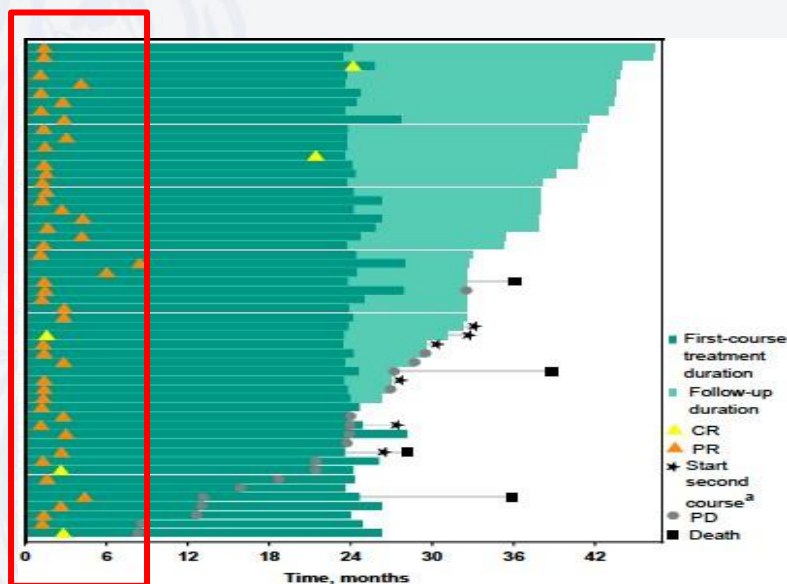
Patients who completed treatment, better outcome

KEYNOTE 189

Best response	N = 56
Objective response, n (%)	49 (87.5)
Best objective response, n (%)	
CR	6 (10.7)
PR	43 (76.8)
SD	7 (12.5)

- 2-year OS rate from completion of 35 cycles (2 years) was 79.6%
- At data cutoff, 45/56 patients (80.4%) were alive, 28 without PD
- 7 patients started second-course pembrolizumab
 - 2 had a second-course best response of SD by investigator assessment
 - 2 had best response of PD, and 3 were not assessed as of data cutoff

KEYNOTE 407



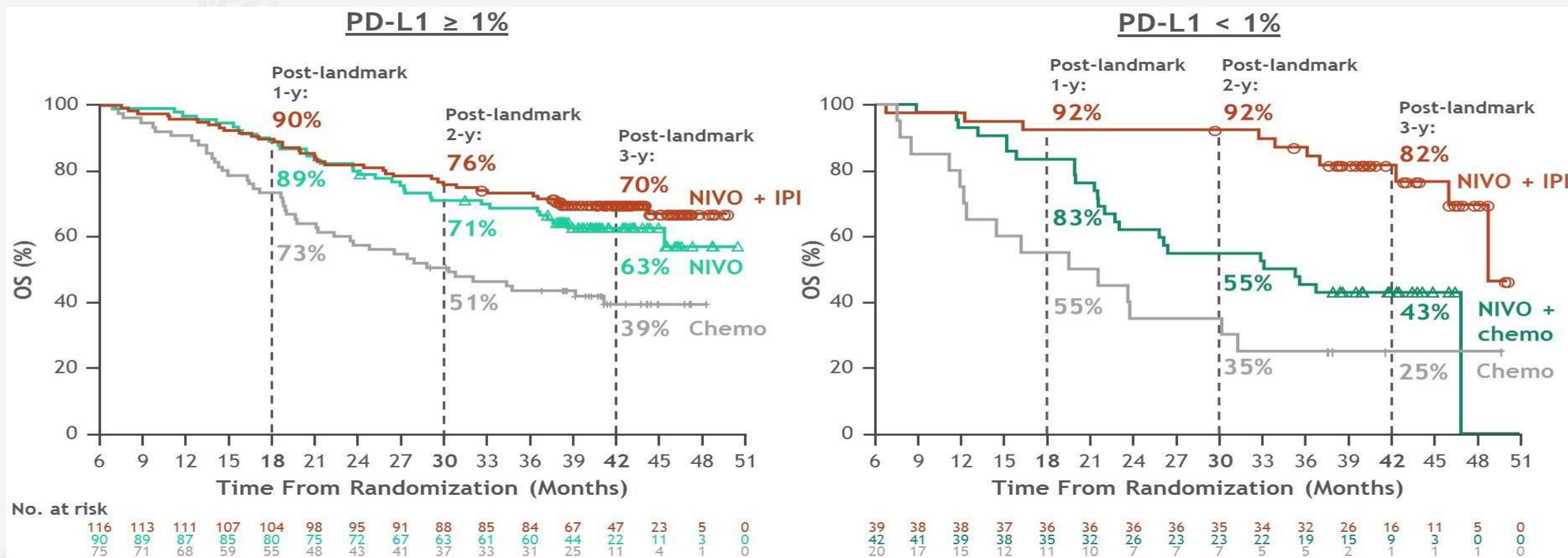
35 Cycles of pembrolizumab completed

	n = 55
ORR ^b , n (%)	51 (92.7)
Best overall response, n (%)	
Complete response	5 (9.1)
Partial response	46 (83.6)
Stable disease	4 (7.3)
Progressive disease	0
DOR, median (range), mo	NR (7.1–45.0+)
1-y OS rate from completion of pembro, %	96.0
1-y PFS rate from completion of pembro ^c , %	82.6

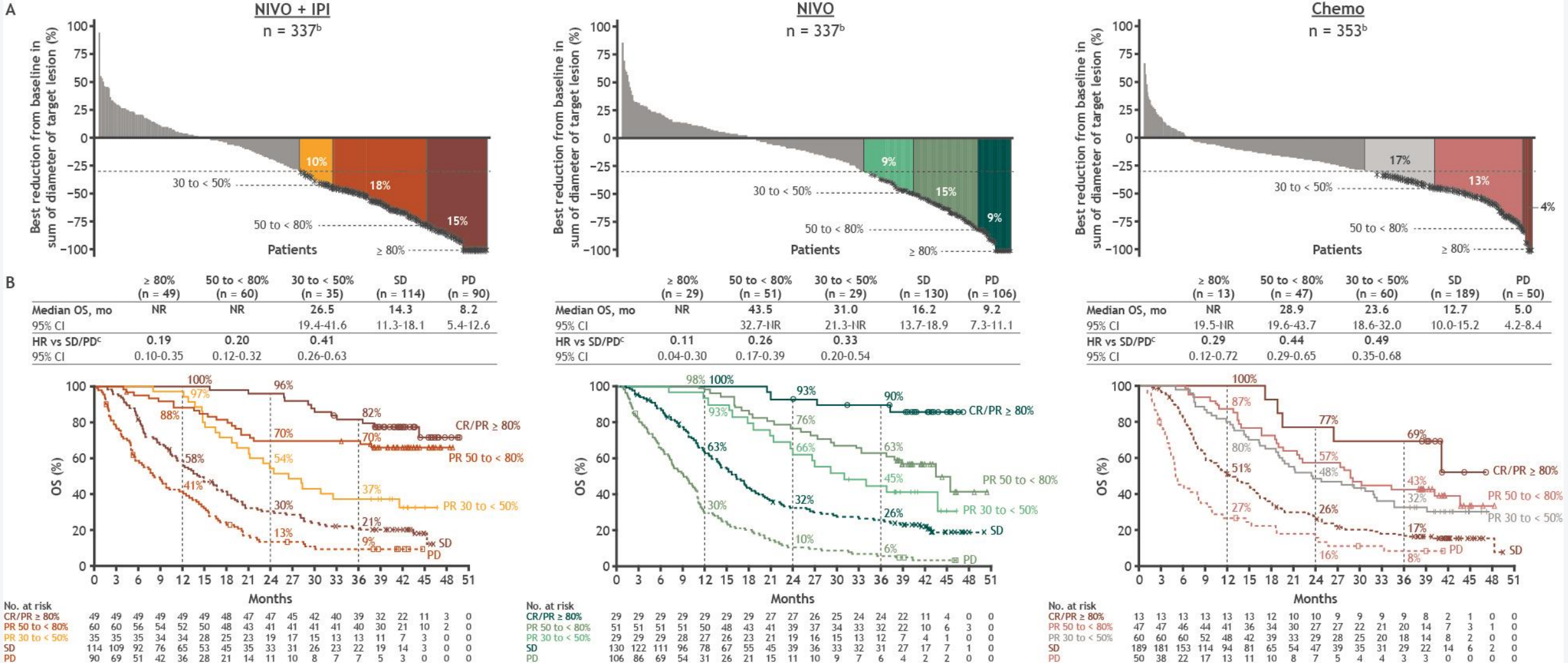
- Median (range) time from completion of 35 cycles of pembrolizumab to data cutoff was 16.1 (6.0–24.6) mo
- 7 patients initiated a second course of pembrolizumab
 - 6 patients (86%) were alive at data cutoff

Patients who completed treatment, better outcome

CM227: Post-landmark OS in CR/PR PD-L1 ≥ 1% and PD-L1 < 1%



OS by response and tumor burden reduction with NIVO + IPI, NIVO and chemo (PD-L1 ≥ 1%)



Conclusiones

- The treatment landscape is changing: More options, more ability to tailor treatment.
- Biomarkers other than PD-L1 might be helpful in deciding how to treat patients.
- Patient preferences must be taken into account given multiple options.
- Single agent checkpoint inhibitor for PD-L1 high expressing tumors seems to be the best option given clinical efficacy and side effect profile. Improvements are needed, however.
- Combination of chemotherapy and a checkpoint inhibitor is a good option for most patients. IO/IO combination are intriguing and offer another options for some patients.

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“Tratamiento médico del cáncer en el año 2022”

Gracias

antonio.calles@live.com

