

III JORNADA TRASLACIONAL DE ONCOLOGÍA DE PRECISIÓN:

A TRAVÉS DE LAS VÍAS DE SEÑALIZACIÓN
SEVILLA, 12 Y 13 DE FEBRERO DE 2026

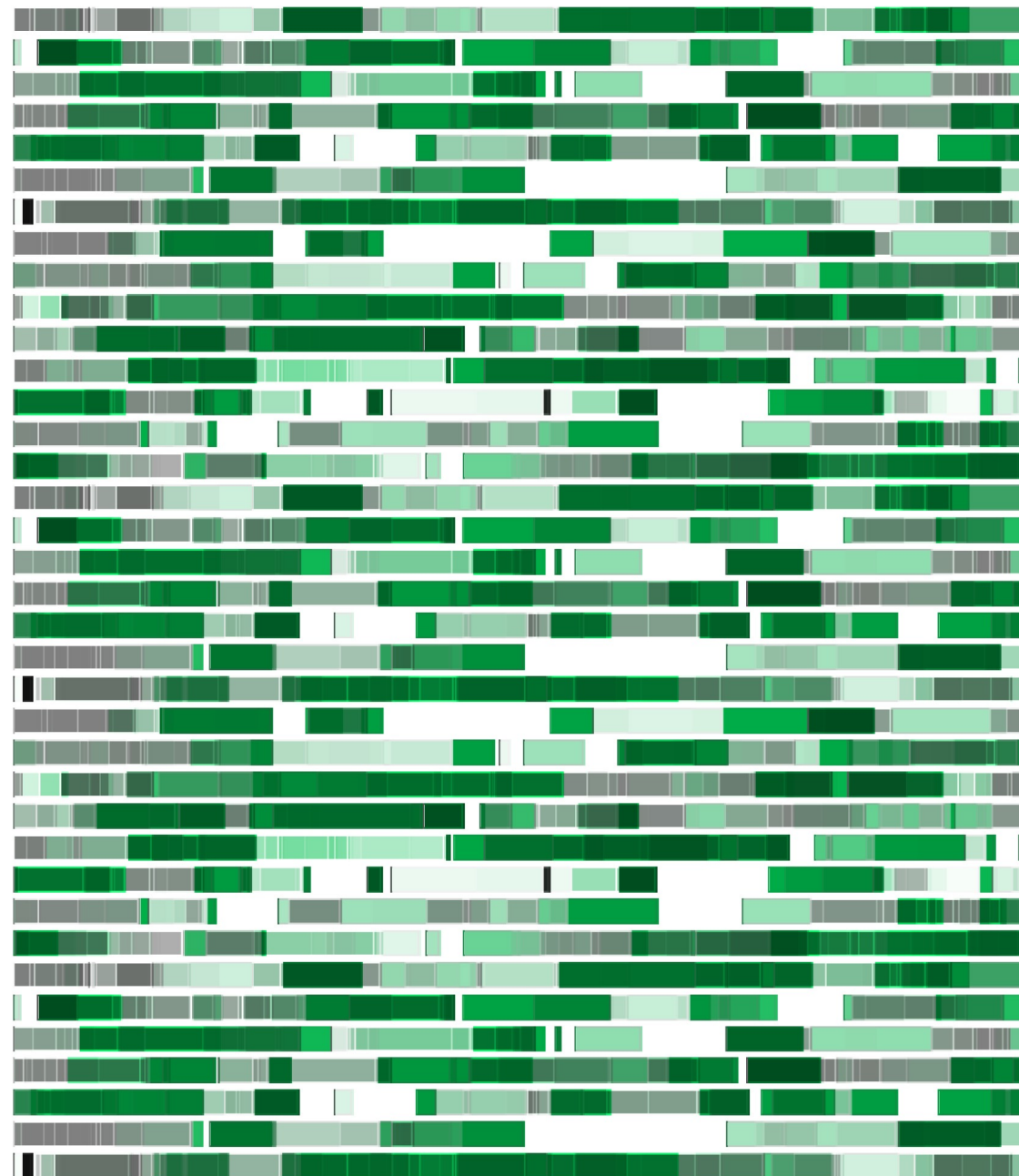
Ventajas e inconvenientes de la neoadyuvancia frente a la adyuvancia en el CPNM (Cáncer de Pulmón No Microcítico) estadios iniciales

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Organizador por:

HENDERE HEALTHCARE





Disclosures

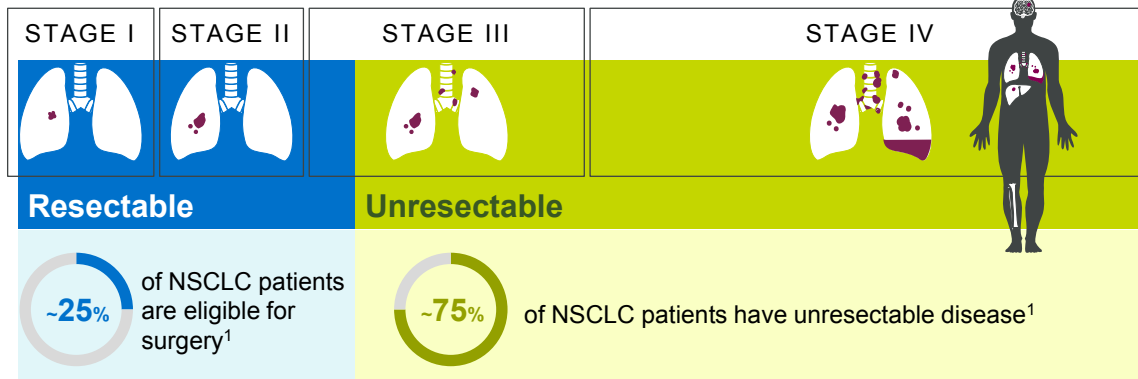
- **Advisory / Consultancy** : AstraZeneca, Boehringer Ingelheim, Bristol-Myers Squibb, MSD, Novartis, Roche, Takeda, Pfizer, Johnson&Johnson
- **Speaker Bureau / Expert testimony**: AstraZeneca, Boehringer Ingelheim, Bristol-Myers Squibb,
MSD, Novartis, Pfizer, Roche, Takeda, Pierre-Fabre, Regeneron
- **Travel / Accommodation / Expenses** :Bristol-Myers Squibb, Pfizer, Roche, Takeda, Astra Zeneca.



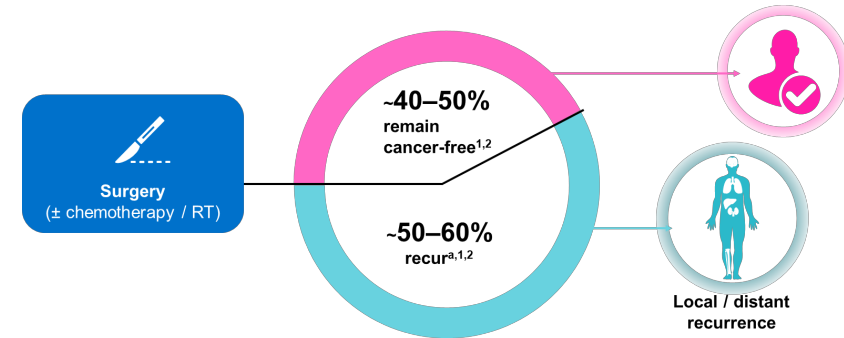
Introduction

Locally Advanced Lung Cancer: Where Surgery Alone Falls Short

NSCLC Staging and Surgical Eligibility



Recurrence Rates After Initial Treatment of Resectable NSCLC



After initial treatment, more than half of patients with resectable NSCLC experience recurrence within 5 years

Role of the Multidisciplinary Team in Treatment Decisions

+ Multidisciplinary teams make key decisions on treatment strategy

- Thoracic surgeon
- Medical oncologist
- Radiation oncologist
- Pulmonologist
- Radiologist
- Oncology pharmacist
- Pathologist
- Oncology nurse
- Nuclear medicine physician

Patients with resectable tumours may have multiple treatment options, including surgery, radiotherapy and chemotherapy

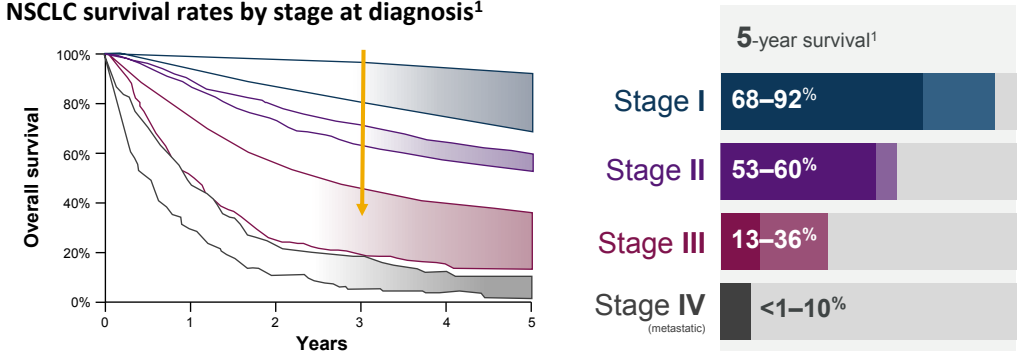
Key functions of the multidisciplinary team are to:

- Identify which patients are eligible for resection, especially those with Stage III disease
- Make decisions on key treatment strategies, including choice of neoadjuvant and adjuvant treatments
- Choose neoadjuvant and adjuvant treatment strategies, considering each patient on a case-by-case basis

Different institutions and countries will have different approaches to the roles and functions of the multidisciplinary team

Five-Year Survival Rates by NSCLC Stage at Diagnosis

5-year NSCLC survival rates by stage at diagnosis¹



Adapted from Global Data. 2016. ^aDiagnosis statistics based on 7 major market countries (EU5, US, and Japan).



Introduction

Neoadjuvant

Strengths

Activation of the immune system (immune priming) while the tumor is still present

Early control of micrometastatic disease

Assessment of pathological response (pCR/MPR) at surgery

Potential reduction in tumor stage (downstaging)

Efficacy ?

Weaknesses

Risk of preoperative attrition, with 16–22% of patients in clinical trials failing to reach surgery due to disease progression or treatment-related toxicity

Potential delays in surgical scheduling

Adjuvant

Strengths

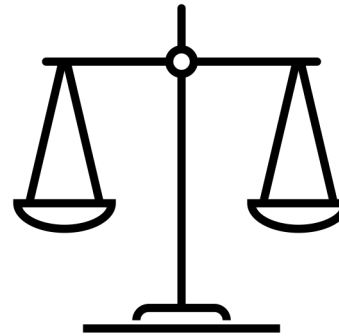
Treatment is administered after confirming a complete R0 resection and is based on accurate pathological staging following surgery.

Weaknesses

Low treatment adherence (many patients do not initiate or complete all cycles due to postoperative recovery)

Delayed initiation of systemic therapy against residual disease.

Cost





Outline

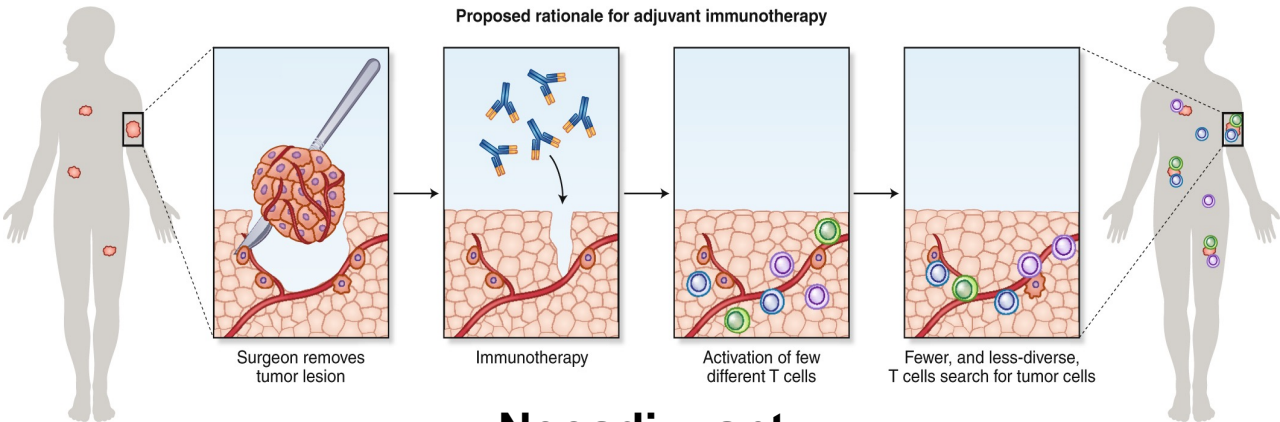
- 1. Biological Advantages:** Immune activation and systemic control
- 2. Clinical Efficacy Signal:** Efficacy and pCR/MPR as a surrogate of Benefit
- 3. Risks and Attrition:** Progression or toxicity preventing surgery
- 4. Treatment Delivery and Adherence:** Neoadjuvant feasibility/ Adjuvant non-compliance
- 5. Clinical Trade-offs:** Timing of systemic therapy/ Cost and real-world implications



Biological Advantages: Immune activation and systemic control

Adjuvant

Proposed rationale for adjuvant immunotherapy

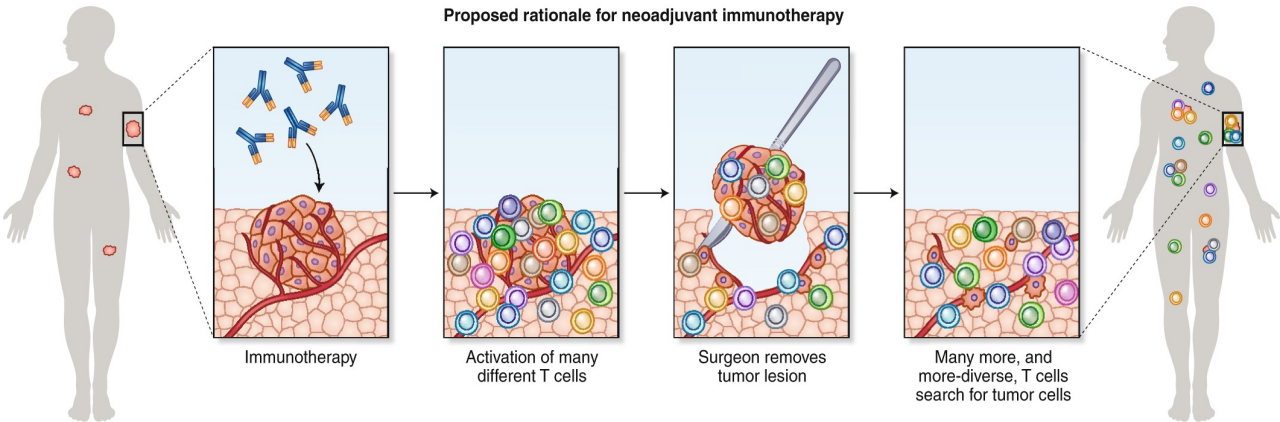


Robust activation of immune system prior to surgery (tumor neoantigen burden, low clonal resistance)^{1,2}

Neoadjuvant CT plus ICIs: Possible maximal response upfront and assessment of pathologic response to guide adjuvant therapy^{1,2}

Neoadjuvant

Proposed rationale for neoadjuvant immunotherapy



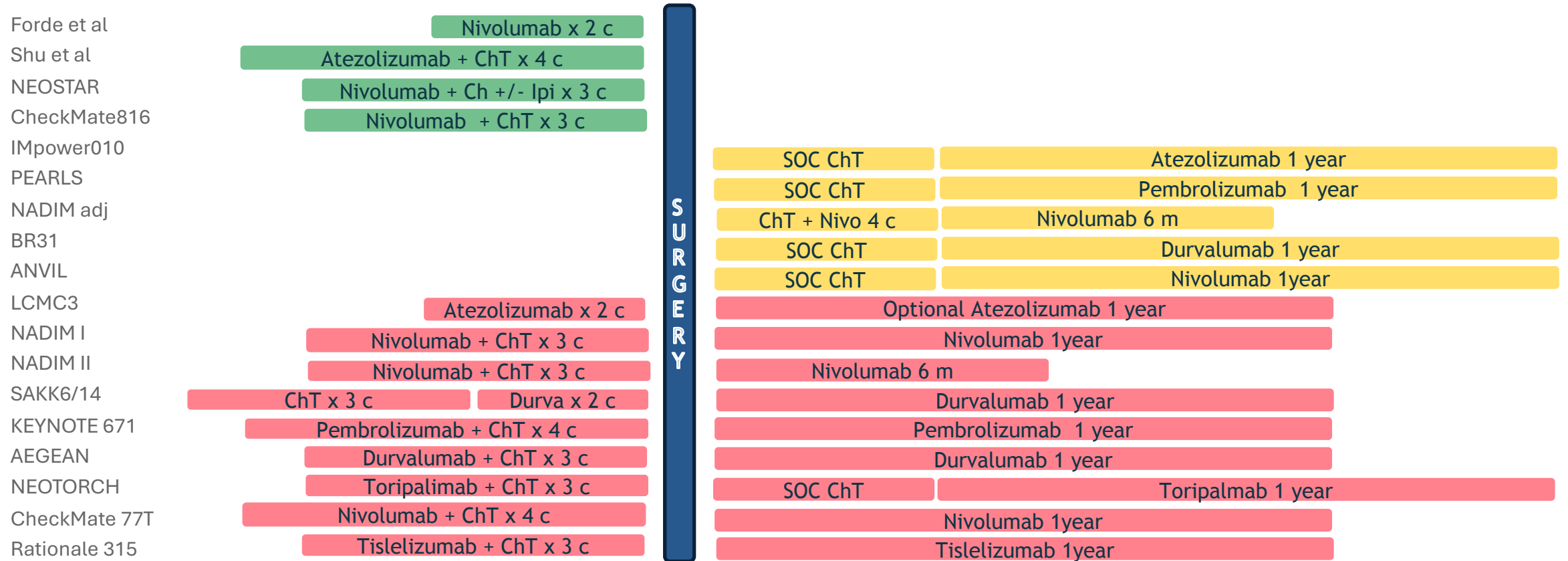
Rapid readout of activity based on surrogate endpoints (MPR, pCR)³; translational analyses on pre- and post-therapy samples

Perioperative ICIs: Treatment throughout the surgical setting → potential enhanced micrometastatic disease killing and antitumor immunity



Clinical Efficacy Signal: Efficacy and pCR/MPR as a surrogate of Benefit

Summary of Key Neoadjuvant, Perioperative, and Adjuvant Studies in Operable NSCLC



Wakelee N Engl J Med, 2023 Cascone N Engl J Med, 2024 Lu JAMA, 2024 Yue Ann Oncol, 2023 Yue Ann Oncol, 2024 Felip Lancet, 2021 O'Brien Lancet Oncol, 2022 Goss Ann Oncol, 2024 Awad MM Ann Oncol. 2025 Heymach JV N Engl J Med. 2023 Forde PM N Engl J Med. 2022 Forde NEJM 2018 Shu Lancet Oncol 2020 Cascone Nat Medicine 2021 Rothschild JCO 2021 Provencio Lancet Oncol 2020 Provencio NEJM 2023 Yue Lancet Respir Med. 2025



Clinical Efficacy Signal: Efficacy and pCR/MPR as a surrogate of Benefit

What Works: Efficacy Data from Modern Resectable NSCLC Trials

Trial	Setting	Drug	n	Primary endpoint	STAGES	HR (EFS/DFS)	Median EFS/DFS (ICI vs placebo)	pCR	OS
CM-816	Neoadj	Nivolumab	358	EFS /pCR	IB-III A	0.63 (0.43-0.91) p=0.005	43.8 vs 18,4 m	24% vs 2.2%	65.4% vs 55% (5 y)
KN-671	Periop	Pembrolizumab	797	EFS/OS	II-III B	0.58 (0.46-0.72) p < 0.00001	47.2 vs 18.3 m	18,1% vs 4%	67.1% vs 51.5% (4 y)
AEGEAN	Periop	Durvalumab	802	EFS/pCR	II-III	0.68 (0.53-0.88) p= 0.004	NR vs 30 m	17,2% vs 4.3%	Not reported
CM-77T	Periop	Nivolumab	735	EFS	IIA-III B	0.58 (0.42-0.81) p=0.00025	NR vs 18.4 m	25,3% VS 4.7%	Not reported
NEOTORCH	Periop	Toripalimab	501	EFS/MPR	II-III B	0.40 (0.28-0.57) p < 0.001	NR vs 15.1 m	24,8% vs 1%	81% 2 y
RATIONALE 315	Periop	Tislelizumab	453	MPR	II-III A	0.56 (0.40-0.79) p=0.0003	NR vs 15.1 m	41% vs 6%	89% 2 y
IMpower010	Adj	Atezolizumab	1269	DFS	IB-III A	(Stage IB-III A): 0.81(0.67, 0.99)p=040	65,6 vs 47,8 m	NA	ITT 79% 3 y
PEARLS	Adj	Pembrolizumab	1177	DFS	II-III A	0.76 (0.63-0.91) p= 0.0014	53.6 VS 42 m	NA	2% (1.5 y)
BR31	Adj	Durvalumab	1360	DFS PDL1 >25%	IB-III A	PD-L1 25%: 0.935 (0.70-1.247)	-	NA	Not reported



Clinical Efficacy Signal: Efficacy and pCR/MPR as a surrogate of Benefit

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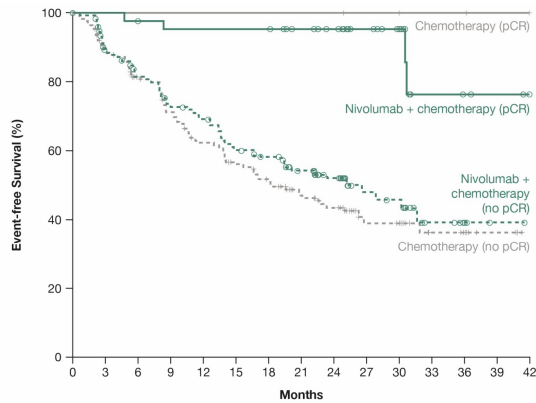
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Clinical Efficacy Signal: Efficacy and pCR/MPR as a surrogate of Benefit

Subgroup Analyses by pCR: EFS by pCR status

CheckMate 816 (neoadjuvant)

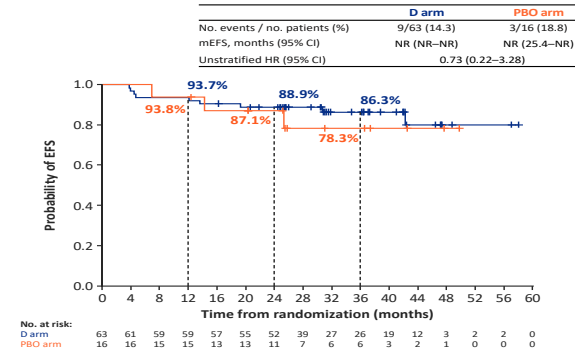


pCR:
HR not
calculated

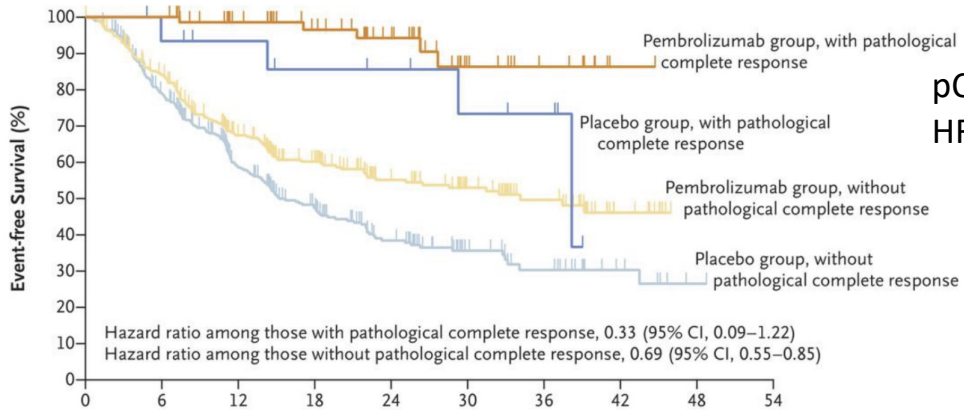
No pCR:
HR 0.84

AEGEAN (perioperative)

pCR



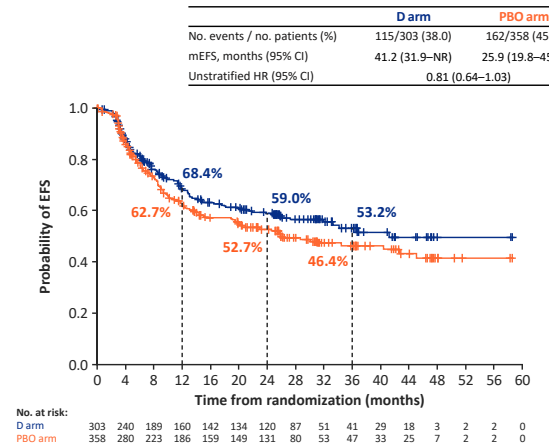
KEYNOTE-671 (perioperative)



pCR:
HR 0.33

No pCR:
HR 0.69

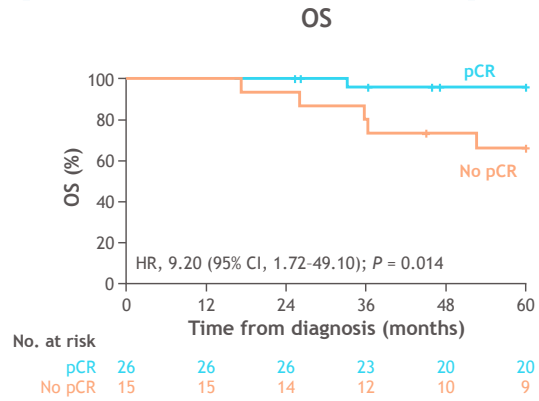
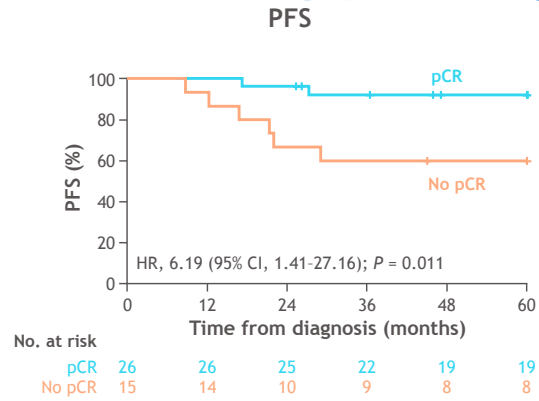
No
pCR





Clinical Efficacy Signal: Efficacy and pCR/MPR as a surrogate of Benefit

PFS and OS by pathologic response in resected patients NADIM II

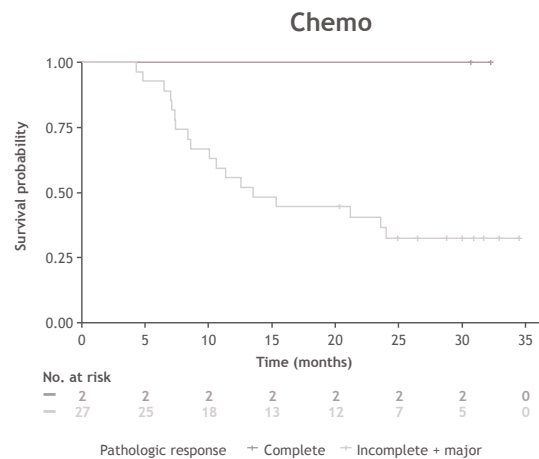
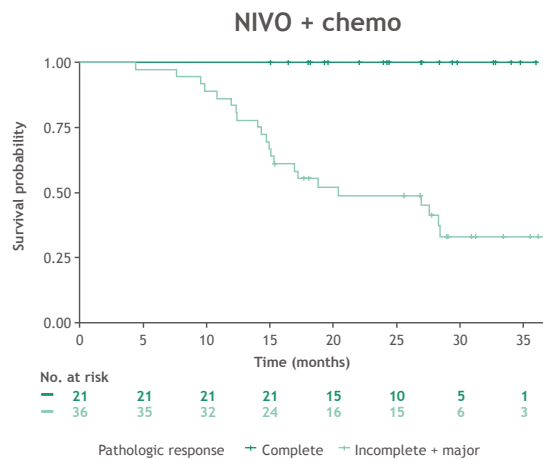


5-year PFS rates

- pCR: 92.0% (95% CI, 70.5-97.9)
- No pCR: 60.0% (95% CI, 31.8-79.7)

5-year OS rates

- pCR: 95.8% (95% CI, 73.9-99.4)
- No pCR: 66.0% (95% CI, 36.5-84.3)



pCR is the most critical prognostic factor, with dramatic improvements in both PFS and OS.

Achieving pathological complete response should be a primary treatment goal

The treatment comparison suggests modest differences between regimens, but pCR status appears more impactful than the specific treatment approach

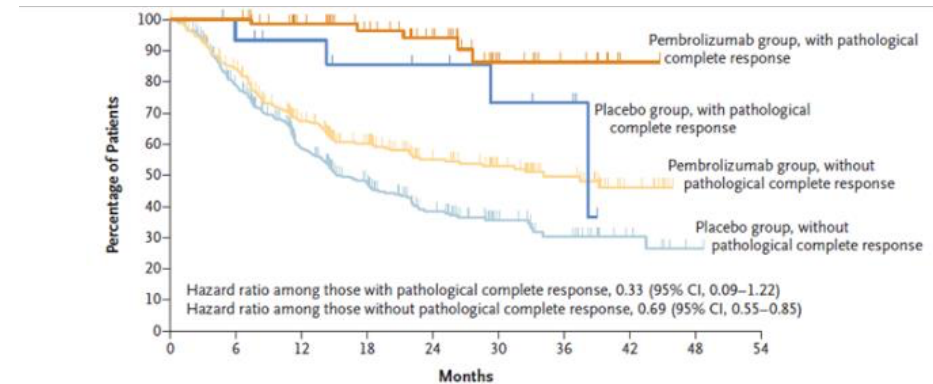
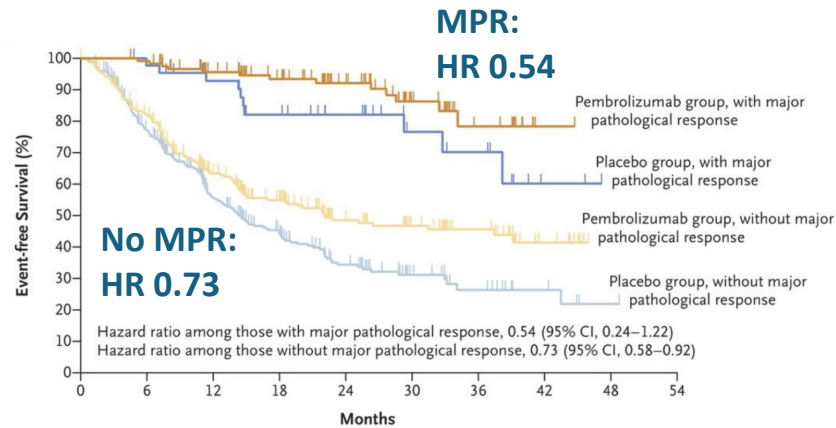
These findings support pCR as a valid surrogate endpoint for long-term outcomes in neoadjuvant therapy



Clinical Efficacy Signal: Efficacy and pCR/MPR as a surrogate of Benefit

Tailoring Treatment: Subgroup Analyses by MPR

KEYNOTE-671



No. at Risk		0	6	12	18	24	30	36	42	48	54
With major pathological response											
Pembrolizumab group		120	117	99	79	60	30	15	1	0	0
Placebo group		44	42	36	28	22	12	10	2	0	0
Without major pathological response											
Pembrolizumab group		277	213	137	93	57	42	27	10	0	0
Placebo group		356	252	147	96	52	26	14	7	1	0

No. at Risk		0	6	12	18	24	30	36	42	48	54
With pathological complete response											
Pembrolizumab group		72	72	59	46	33	15	8	1	0	0
Placebo group		16	14	12	10	9	5	4	0	0	0
Without major pathological response											
Pembrolizumab group		325	258	177	126	84	57	34	10	0	0
Placebo group		384	280	171	114	65	33	20	9	1	0

mPR was 30.2% (95% CI, 25.7-35.0) in the pembrolizumab group and 11.0% (95% CI, 8.1-14.5) in the placebo group (difference, 19.2; 95% CI, 13.9-24.7; P<0.0001).

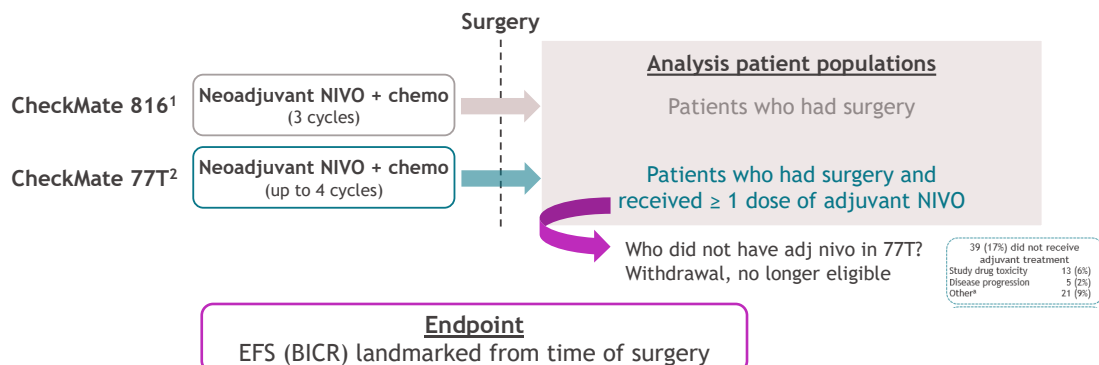
Pathological complete response occurred in 72 subjects (18.1%; 95% CI, 14.5-22.3) in the pembrolizumab group and in 16 subjects (4.0%; 95% CI, 2.3-6.4) in the placebo group (difference, 14.2; 95% CI, 10.1-18.7; P<0.001).



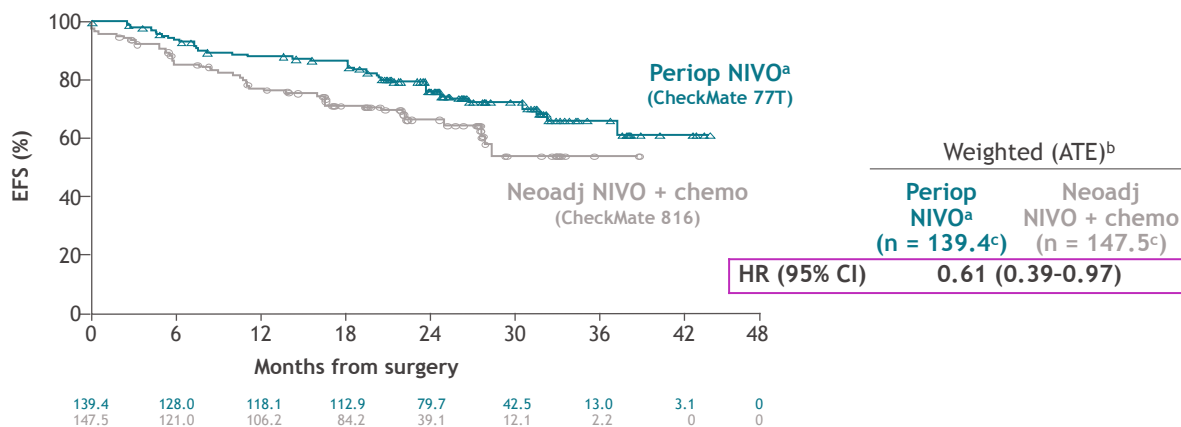
Clinical Efficacy Signal: Efficacy and pCR/MPR as a surrogate of Benefit

Individual Patient Level Analysis of CM816 and CM77T

Perioperative NIVO vs Neoadjuvant NIVO + chemo



EFS (BICR) from definitive surgery



• HR (95% CI): ATT^d weighted analysis, 0.56 (0.35-0.90); unweighted analysis, 0.59 (0.38-0.92)

Baseline characteristics: analysis populations

	Unweighted	
	Perioperative NIVO (n = 139), %	Neoadjuvant NIVO + chemo (n = 147), %
Age < 65 years	48	52
Male	73	69
Asian	27	50
ECOG PS ≥ 1	33	25
Disease stage		
Stage IB-II	35	37
Stage III non-N2	24	16
Stage III N2	40	47
Squamous NSCLC	50	46
Current/former smoker, ^b	94	90
Tumor PD-L1 expression ≥ 1%	58	50

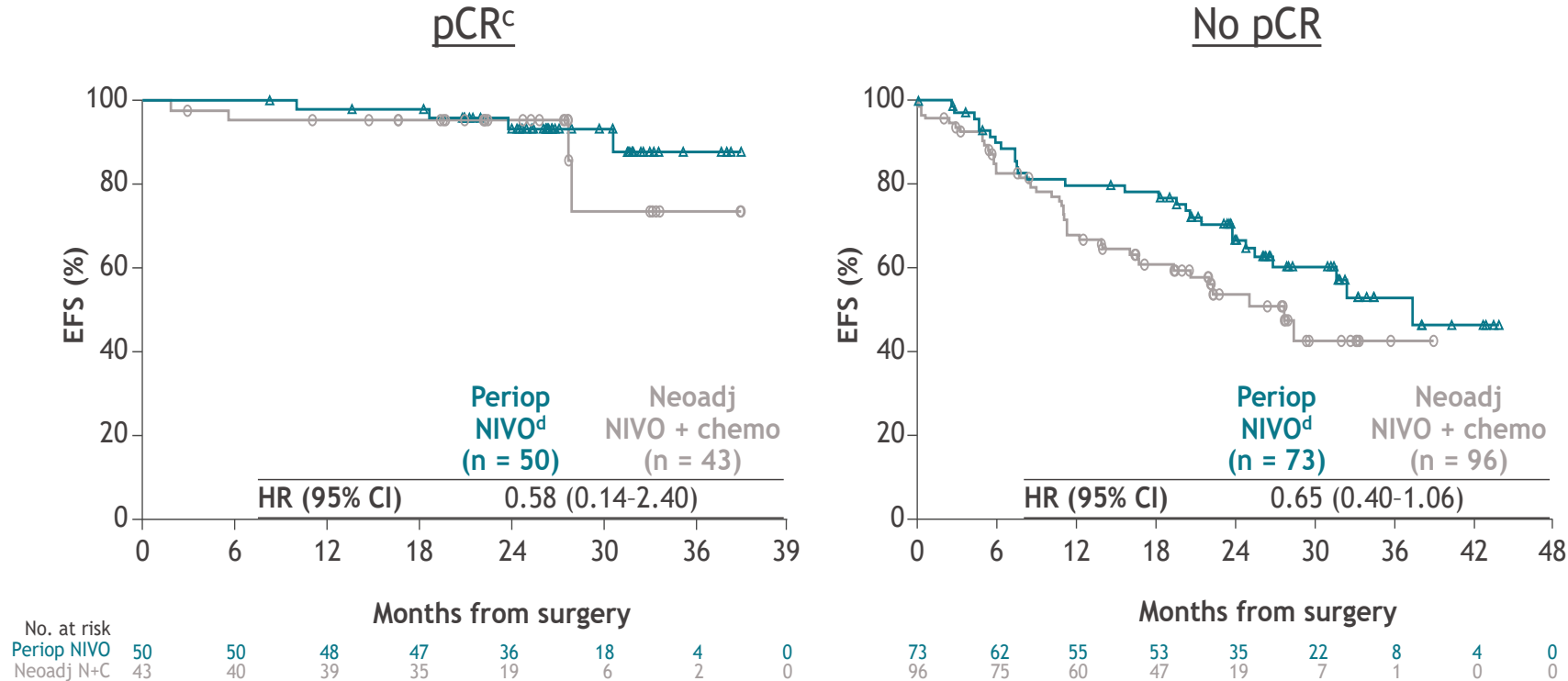
- In lieu of a head-to-head trial, exploratory propensity score weighting analyses (ATT^a and ATE^b) were performed to allow simplified reproduction of a randomized trial by adjusting for clinically relevant baseline demographics and disease characteristics between study populations and reducing the confounding effects of these factors
- Median duration of follow-up: 29.5 months (CheckMate 816) and 33.3 months (CheckMate 77T)

Approximately 40% reduction in risk of disease recurrence or death after surgery was observed in patients who received ≥ 1 dose of adjuvant NIVO following neoadjuvant NIVO + chemo treatment and surgery compared with those who did not receive adjuvant NIVO



Clinical Efficacy Signal: Efficacy and pCR/MPR as a surrogate of Benefit

Individual Patient Level Analysis of CM816 and CM77T



Among patients without pathological complete response, we observe a decline in EFS over time in both arms.

EFS drops to approximately 40-45% by 48 months in both groups.

The hazard ratio is 0.65 (95% CI: 0.40-1.06), showing a trend favoring perioperative NIVO, though not statistically significant

Median follow-up: CheckMate 816, 29.5 months; CheckMate 77T, 33.3 months. ^aPatients with non-evaluable pCR status were excluded. ^bUnweighted analyses. ^cpCR rates in this analysis population: perioperative NIVO, 40.7%; neoadjuvant NIVO + chemo, 30.5%. ^dIncludes only patients who received ≥ 1 dose of adjuvant NIVO.

In patients achieving pathological complete response, both treatment arms show excellent outcomes with EFS remaining above 85% at 39 months.

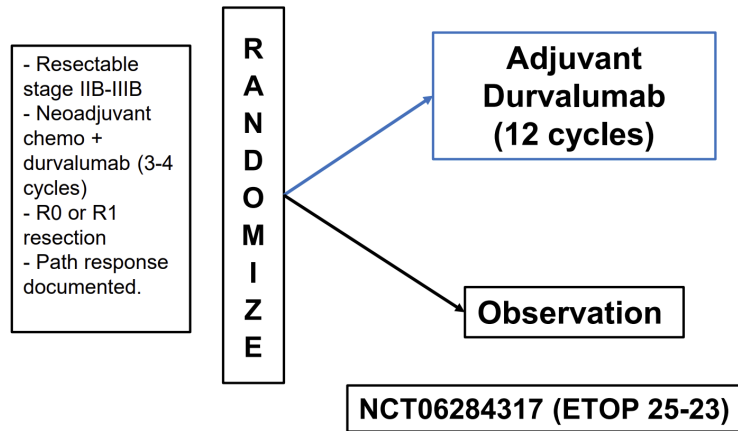
The hazard ratio is 0.58 with a 95% confidence interval of 0.14 to 2.40, suggesting no significant difference between groups.

This demonstrates that regardless of treatment approach, achieving pCR is associated with favorable prognosis.



Clinical Efficacy Signal: Efficacy and pCR/MPR as a surrogate of Benefit

ADOPT-LUNG



Primary Endpoint:

- DFS in non-PCR group

Sample Size:

- 290

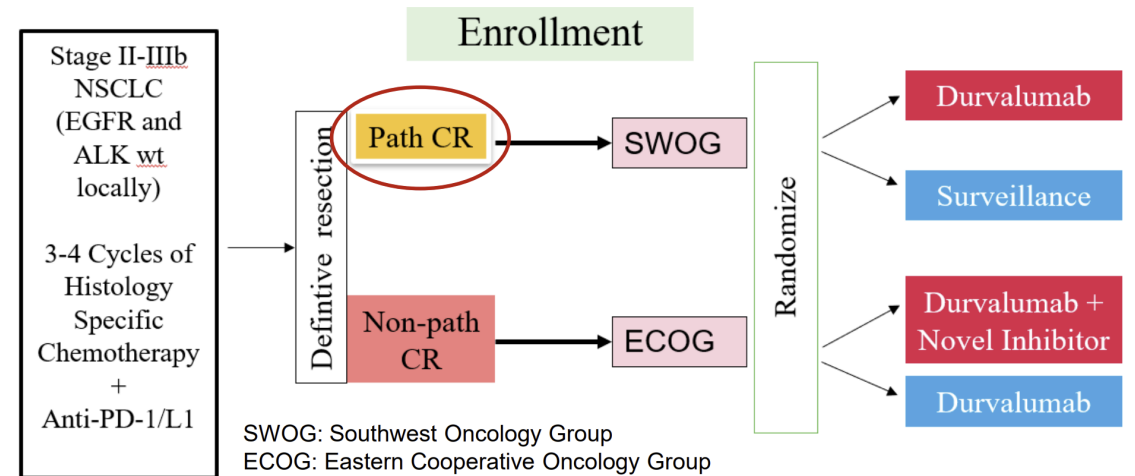
Study Start:

- Oct 2024

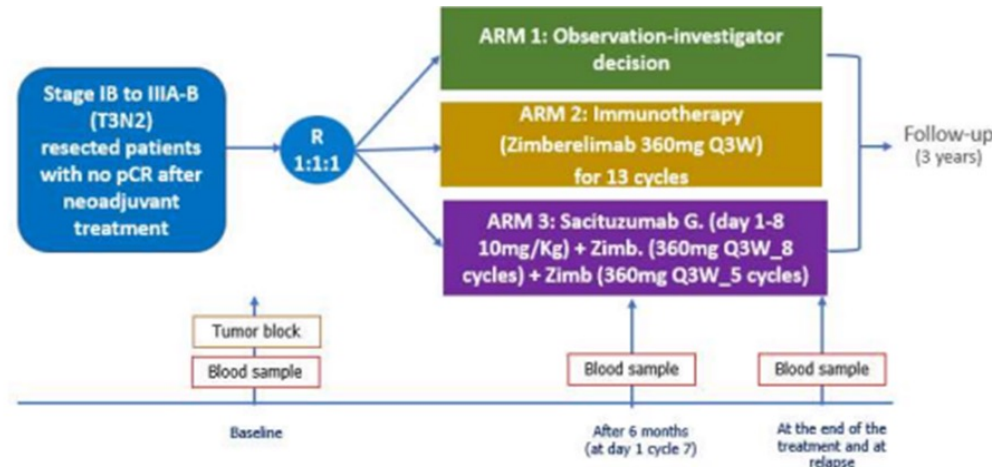
Study Completion:

- Mar 2030

CLEAR-INSIGHT



ARIAN





Risks and Attrition: Progression or toxicity preventing surgery

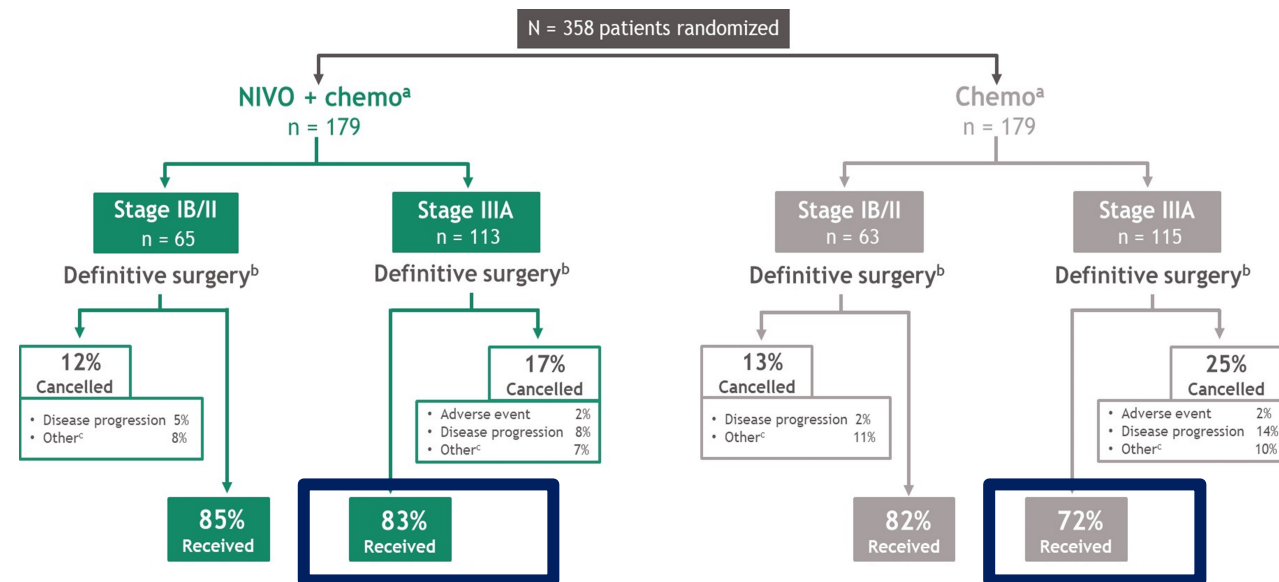
Neotorch¹

	Toripalimab + Chemo (N=202)	Placebo + Chemo (N=202)
No surgery performed n(%)	36 (17.8)	54 (26.7)
Patient underwent surgery n(%)	166 (82.2)	148 (73.3)
R0 resection n(%*)	159 (95.8)	137 (92.6)
95% CI	91.5, 98.3	87.1, 96.2
Differences between arms	3.2	
95% CI	-2.0, 8.4	

AEGEAN³

Study phase*	D arm (N=366)	PBO arm (N=374)
Surgery		
Underwent surgery [†] , n (%)	295 (80.6)	302 (80.7)
Did not undergo surgery ^{†‡} , n (%)	71 (19.4)	72 (19.3)
Completed surgery [†] , n (%)	284 (77.6)	287 (76.7)
- R0 resection, n (% of completed surgery)	269 (94.7)	262 (91.3)
Did not complete surgery [†] , n (%)	11 (3.0)	15 (4.0)

CheckMate 816²



KEYNOTE 671⁴

	Pembro Arm	Placebo Arm
Underwent in-study surgery	325 (82.1%)	317 (79.4%)



Treatment Delivery and Adherence: Neoadjuvant feasibility/ Adjuvant non-compliance



Contents lists available at [ScienceDirect](#)

Lung Cancer

journal homepage: www.elsevier.com/locate/lungcan

Research Paper

Attrition with adjuvant, neoadjuvant, and perioperative immunotherapy-based treatment protocols in patients with resectable non-small-cell lung cancer. A meta-analysis of prospective trials

Francesco Guerrera^{a,b,1}, Filippo Tommaso Gallina^{c,1,*}, Eleonora Balzani^{d,1},
Francesca Ambrosi^{e,f}, Alessandro Di Federico^{g,h}, Eleonora Faccioliⁱ, Giorgio Facheris^j,
Roberto Ferrara^{k,l}, Alessandra Ferro^m, Federica Filipelloⁿ, Raffaele Giusti^o, Carlo Greco^{p,q},
Marco Mammana^r, Daniele Marinelli^s, Antonio Nuccio^{t,u}, Alessandra Pittaro^v,
Matteo Sepulcri^w, Giuseppe Viscardi^x, Pietro Bertoglio^y

Feature / Metric	Neoadjuvant (Preoperative)	Adjuvant (Postoperative)
Scheduled Compliance Rate	93%	61%
Treatment Omission Rate	0.6%	9.6%
Incomplete Treatment Cycles	11.3%	34.6%
Grade 3–4 Adverse Events	23.5%	21.5%
R0 Resection Rate	97%	N/A (Surgery occurs before)
Surgical Dropout Rate	16.3%	N/A



Clinical Trade-offs → Timing of systemic therapy/ Cost and real-world implications

Key Concerns After Prior Neoadjuvant Therapy: Financial Toxicity and Patient Time

- Cost-effectiveness studies for neoadjuvant, adjuvant, and perioperative strategies have all shown the addition of IO to be cost-effective
- Total cost of neoadjuvant regimen is lower owing to less cycles of chemo-IO
- IF all have similar efficacy, the financial toxicity of adjuvant/perioperative regimens COULD be much higher

Table 1. ICER per QALY

Settings	ICER (cost) per QALY
Neoadjuvant	
CheckMate-816 (no PD-L1 selection)	\$32,846
Perioperative	
KEYNOTE-671 (no PD-L1 selection)	\$94,222
Adjuvant	
IMpower010 (PD-L1 50% cutoff for use)	\$68,858

Abbreviations: ICER, incremental cost-effectiveness ratio; QALY, quality adjust life year.

IO status at Recurrence	Neo Nivo		Adj Atezo	
	Stage IB-IIIa, any PD-L1	Stage IB-IIIa, PD-L1 > 1%	Stage II-IIIa, PD-L1 > 1%	Stage II-IIIa, PD-L1 > 50%
No IO	-\$86,599	-\$95,405	-\$20,112	-\$39,641
Ineffective IO	-\$57,250	-\$87,387	\$34,051	-\$24,670
Effective IO	-\$103,924	-\$100,339	-\$58,101	-\$42,318

- Difference in number of infusions for each strategy:
 - Neoadjuvant: 3
 - Adjuvant: 16-20
 - Perioperative: 16-17
- Potential substantial differences in costs for co-pays, parking, time off work, caregiver burden, and even direct financial costs to patients

Muthusamy Annals of Onc 2023; Tian Front. Immunol 2023



Take home messages

- **Surgery is the cornerstone** of early-stage NSCLC treatment.
- **Perioperative therapy should be tailored** by the multidisciplinary Tumor Board.
- **Neoadjuvant therapy primes the immune system** and controls micrometastatic disease early.
- **Higher adherence and fewer infusions** reduce patient burden and financial toxicity.
- **R0 resection rates remain excellent**, making neoadjuvant strategies a compelling option despite attrition risk.

GRacias!

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