



6th Annual

LEAD 2024

Enriching Experiences for Women in Hematology & Oncology

Clinical Updates

Christine A. Garcia, MD, MPH

Clinical Updates in Lung Cancer 2024

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Weill Cornell Medicine

@christinemphmd

LEAD2024: Leadership, Empowerment, and Development



It's been an exciting year for lung cancer!

2024 ASCO[®]
ANNUAL MEETING

#ASCO Lung

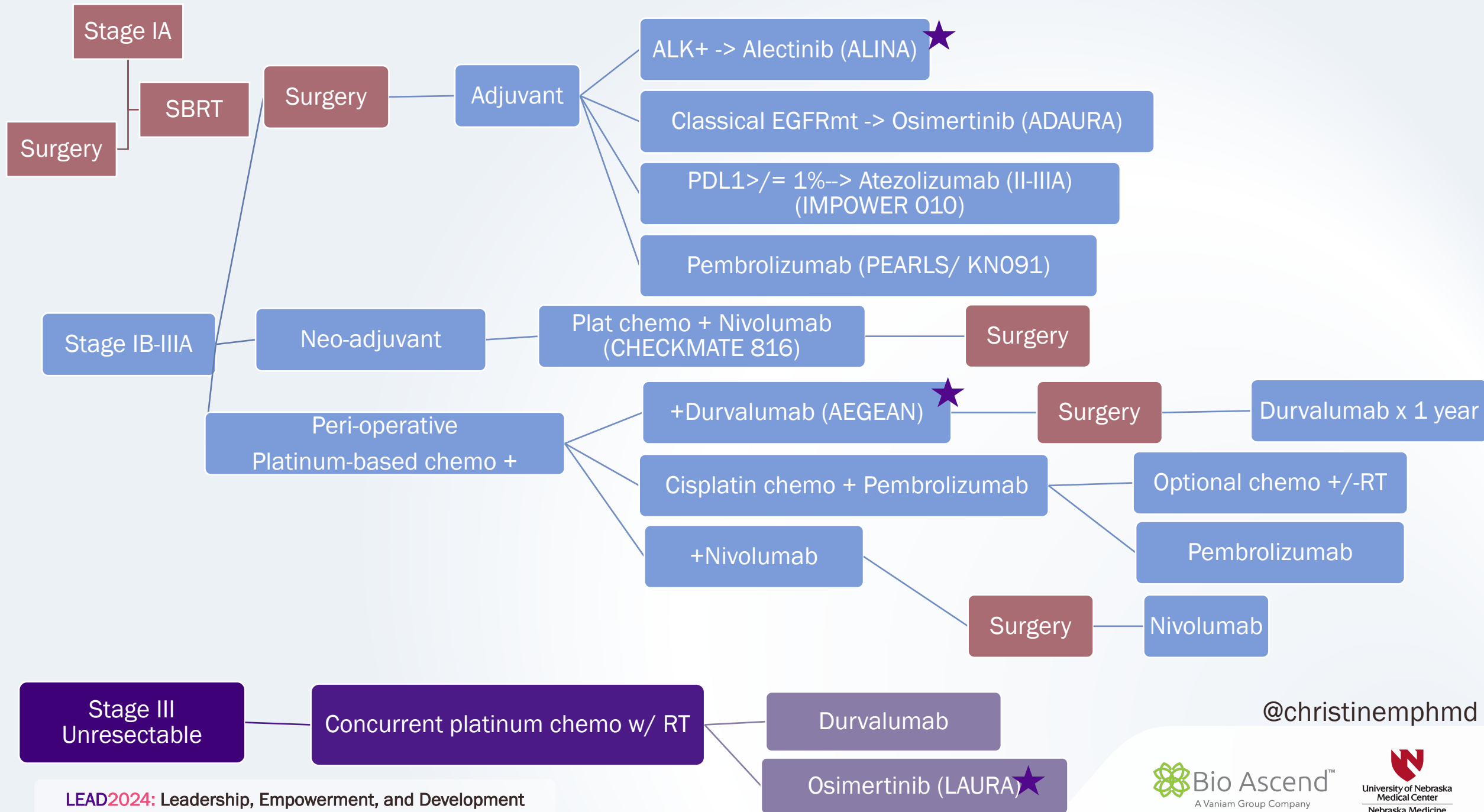
Early Lung Cancer

Metastatic

Small Cell Lung Cancer

Focus on FDA Approvals
end of 2023-2024





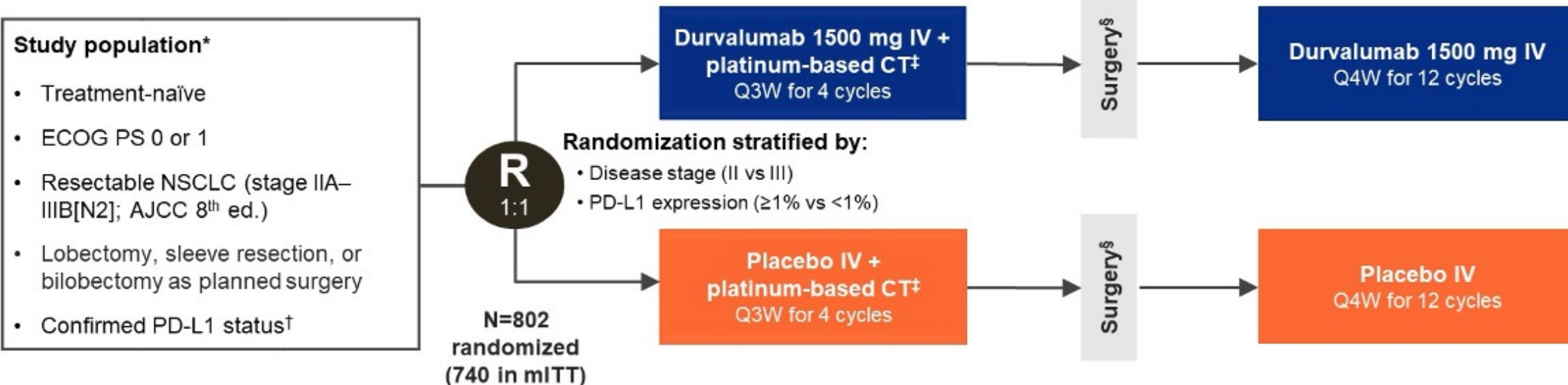
@christinemphmd

FDA
approval
8/16/2024

Outcomes with Perioperative Durvalumab in Patients with Resectable NSCLC and Baseline N2 Lymph Node Involvement (N2 R-NSCLC)

An Exploratory Subgroup Analysis of AEGEAN

John V. Heymach,¹ Martin Reck,² Tetsuya Mitsudomi,³ Janis M. Taube,⁴ Alexander Spira,⁵ Jamie Chafft,⁶ Gary J. Doherty,⁷ Helen Mann,⁷ Tamer M. Fouad,⁸ David Harpole⁹



Primary endpoints: pCR by central lab (per IASLC 2020¹) and EFS using BICR (per RECIST v1.1)

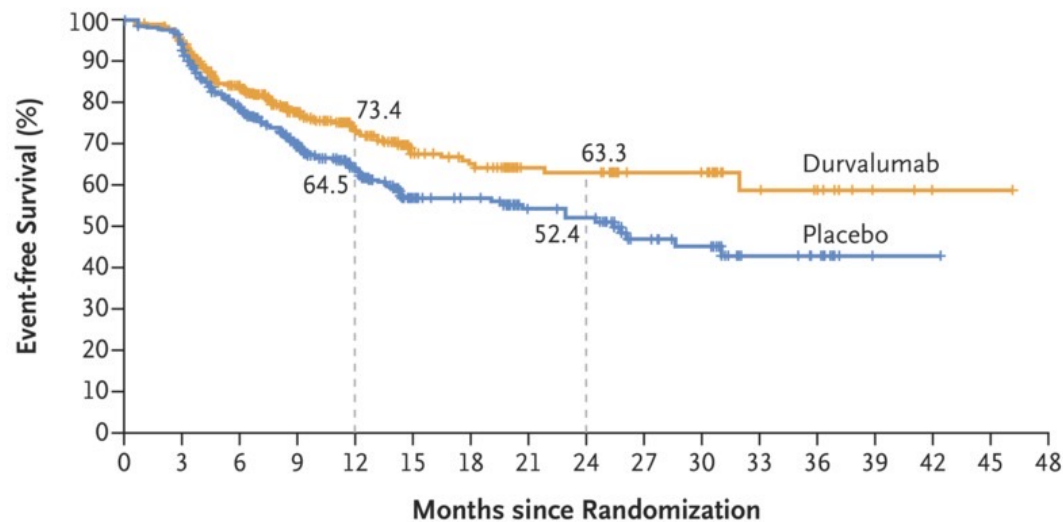
Key secondary endpoints: MPR by central lab (per IASLC 2020¹), DFS using BICR (per RECIST v1.1)[¶] and OS[¶]

All efficacy analyses were performed on the mITT population (N=740), which included all randomized patients without documented EGFR/ALK aberrations

Heymach J et al. ASCO 2024;Abstract 8011.

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A Event-free Survival



	No. of Events/ No. of Patients	Median Event-free Survival (95%CI)
Durvalumab	98/366 (26.8)	NR (31.9–NR)
Placebo	138/374 (36.9)	25.9 (18.9–NR)

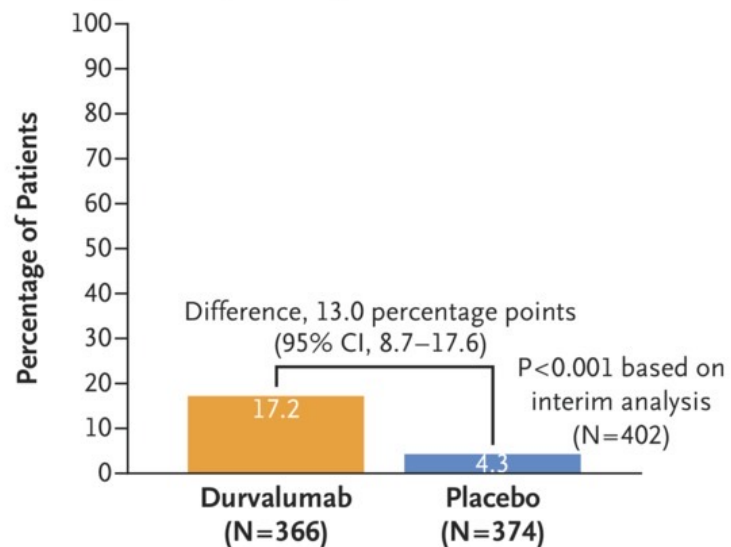
mo

Stratified hazard ratio for disease progression, recurrence, or death, 0.68 (95% CI, 0.53–0.88)
P=0.004 by stratified log-rank test

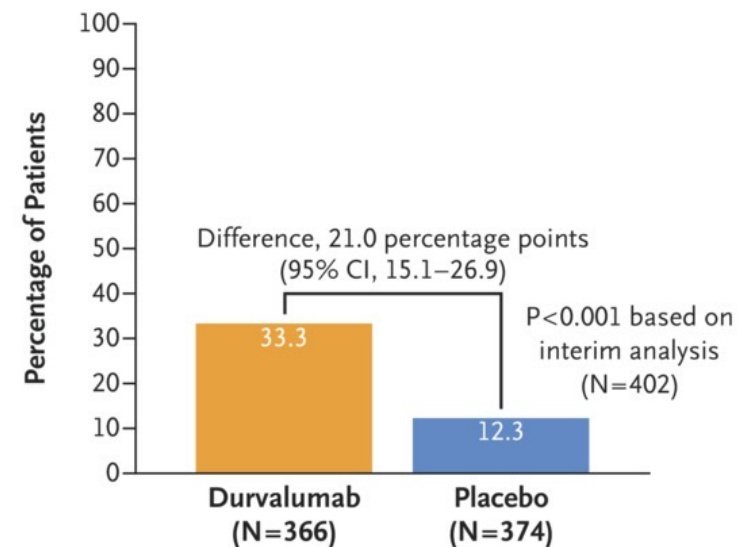
No. at Risk

Durvalumab	366	336	271	194
Placebo	374	339	257	184

A Pathological Complete Response

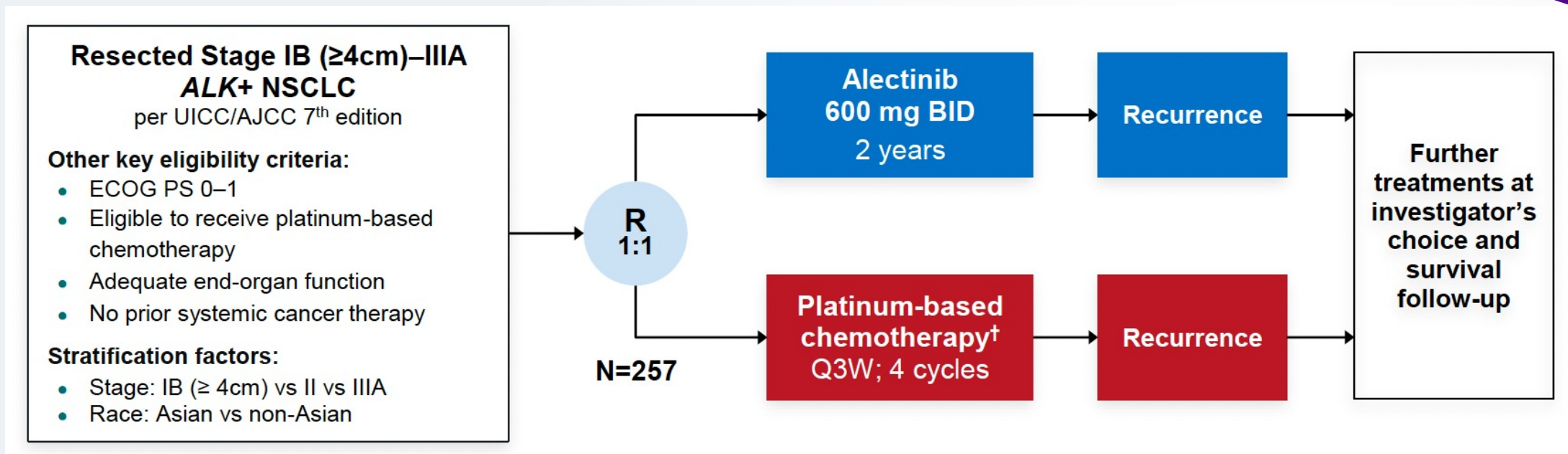


B Major Pathological Response



FDA
approval
4/18/2024

ALINA: Resected IB-IIIa ALK+ NSCLC



Primary endpoint

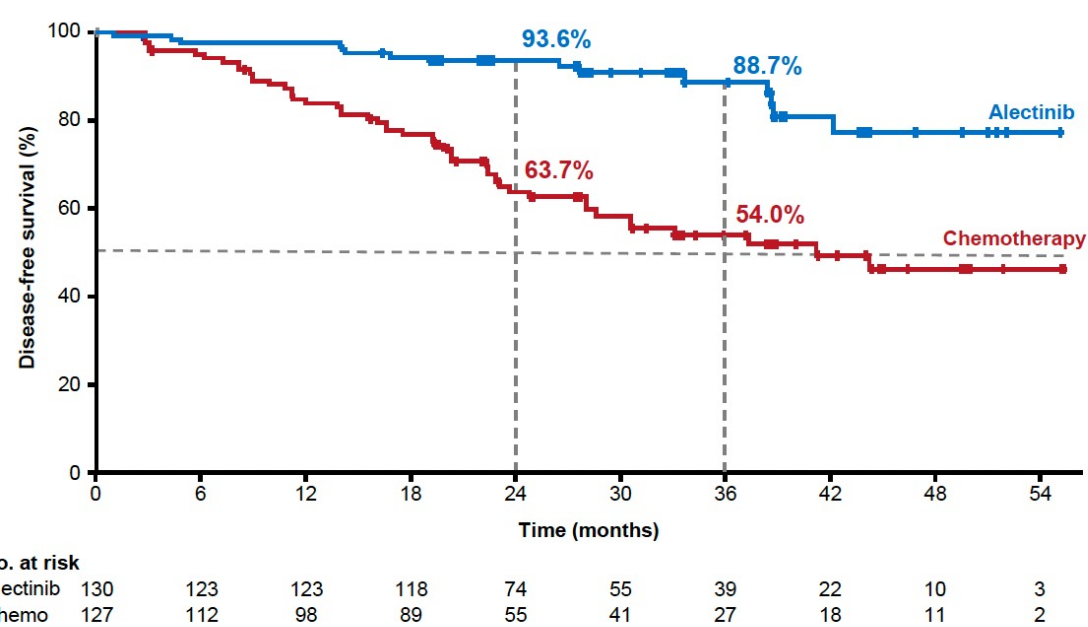
- DFS per investigator,[‡] tested hierarchically:
 - Stage II–IIIa → ITT (Stage IB–IIIa)

Other endpoints

- CNS disease-free survival
- OS
- Safety

Disease assessments (including brain MRI)[§] were conducted: at baseline, every 12 weeks for year 1–2, every 24 weeks for year 3–5, then annually

ALINA: Disease-free survival: ITT stage IB–IIIA

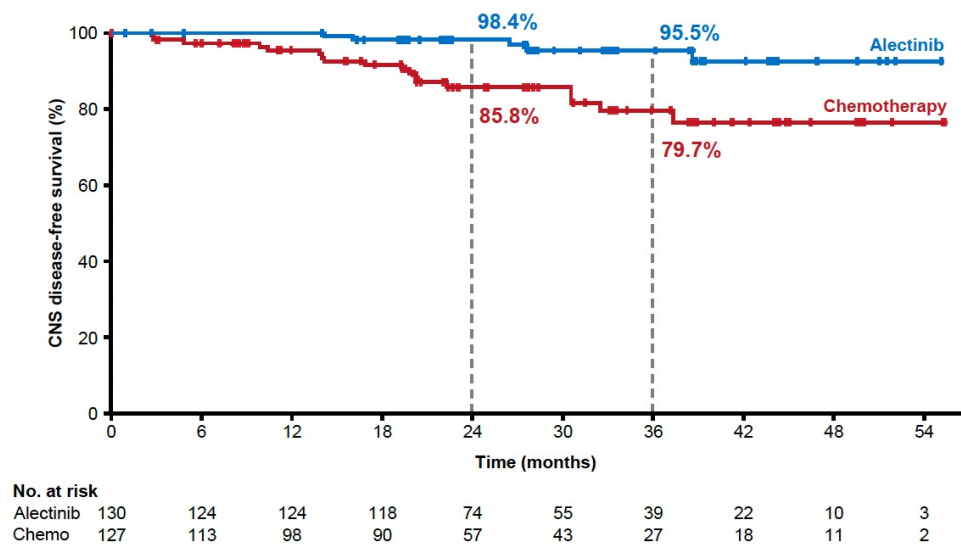


	Alectinib (N=130)	Chemotherapy (N=127)
Patients with event	15 (12%)	50 (39%)
Death	0	1
Recurrence	15	49
Median DFS, months (95% CI)	Not reached	41.3 (28.5, NE)
DFS HR (95% CI)	0.24 (0.13, 0.43) p†<0.0001	

At the data cutoff date, **OS data were immature** with only 6 (2.3%) OS events reported†

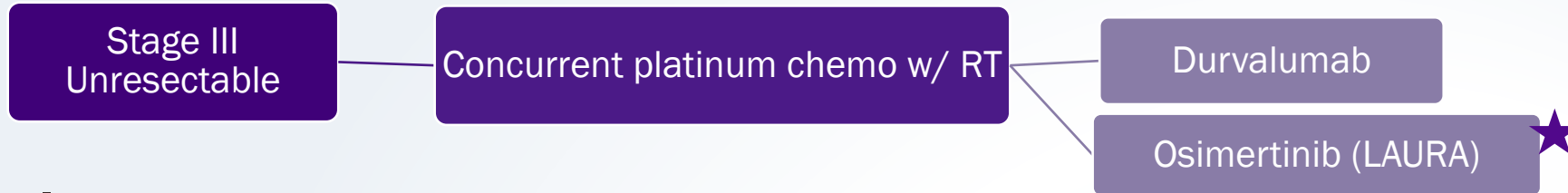
Median survival follow up: alectinib, 27.8 months; chemotherapy, 28.4 months

CNS-DFS in ITT

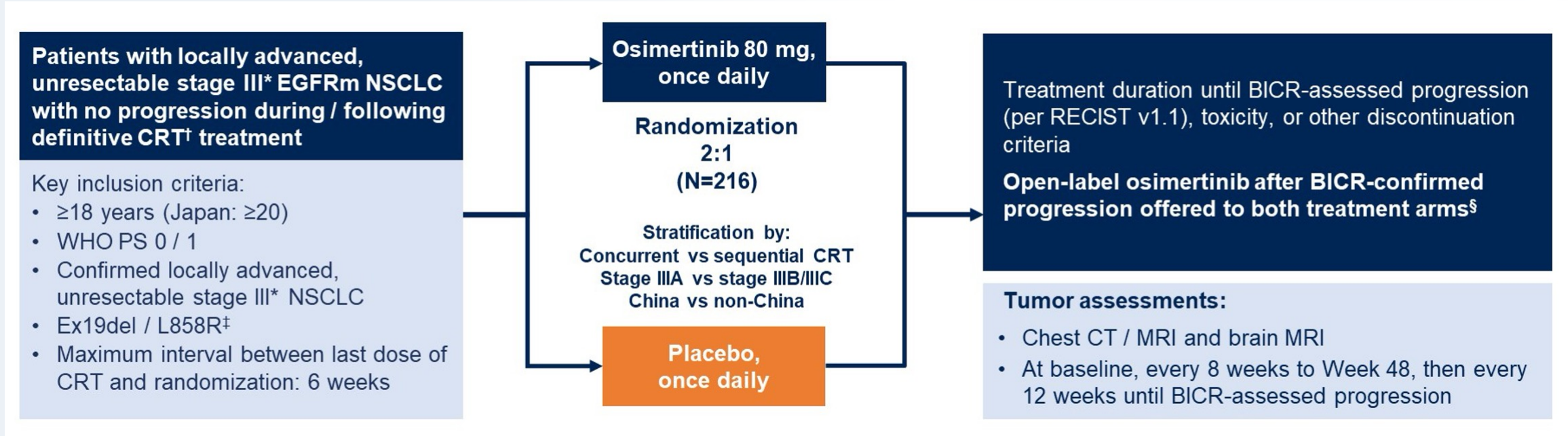


	Alectinib (N=130)	Chemotherapy (N=127)
Patients with event	5	18
Death	1	4
Brain recurrence	4	14
CNS-DFS HR* (95% CI)	0.22 (0.08, 0.58)	

Stage III- Unresectable



LAURA Trial



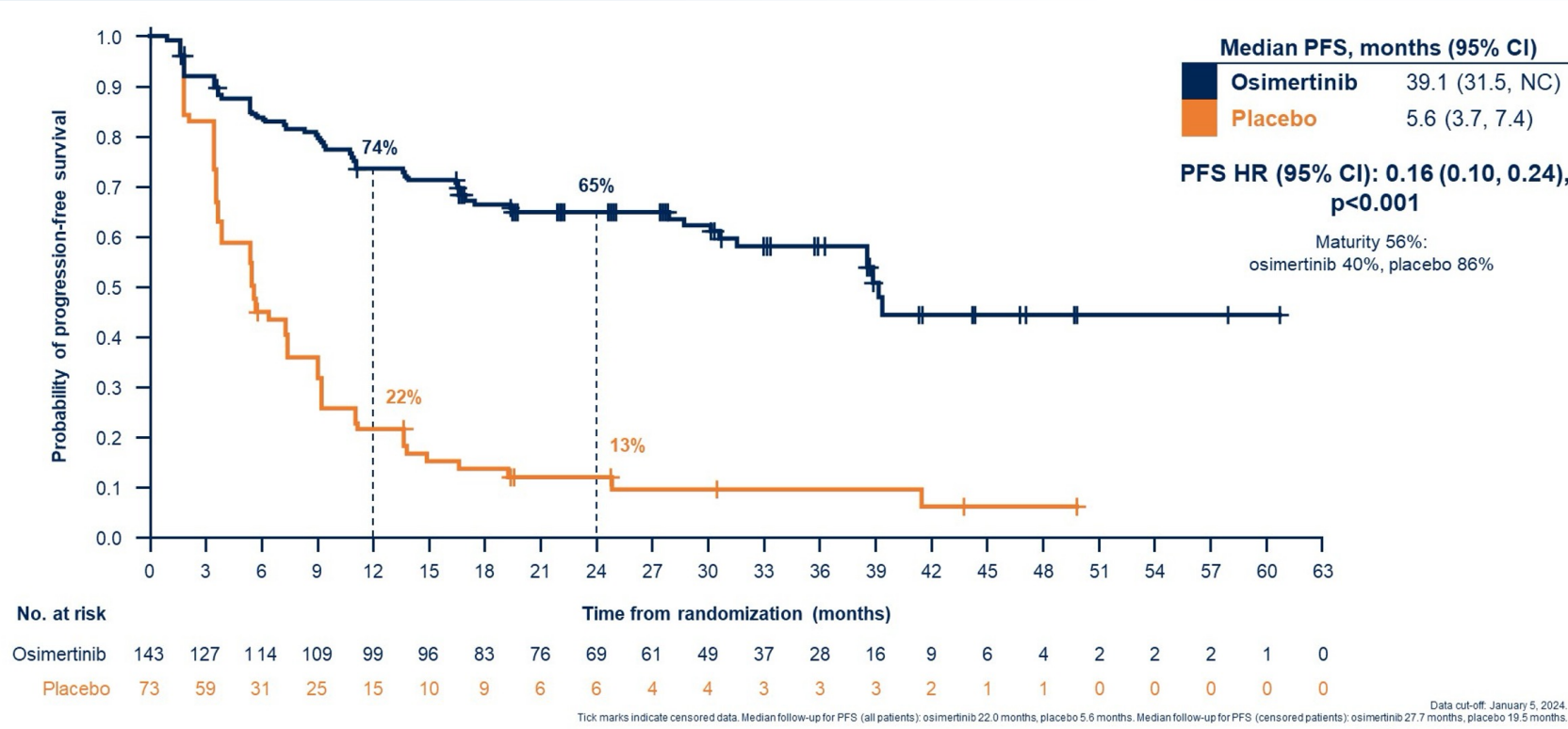
Ramalingam SS et al. ASCO 2024;Abstract LBA4. Lu S et al. *N Engl J Med* 2024 June 2;[Online ahead of print]

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FDA approval
9/25/2024

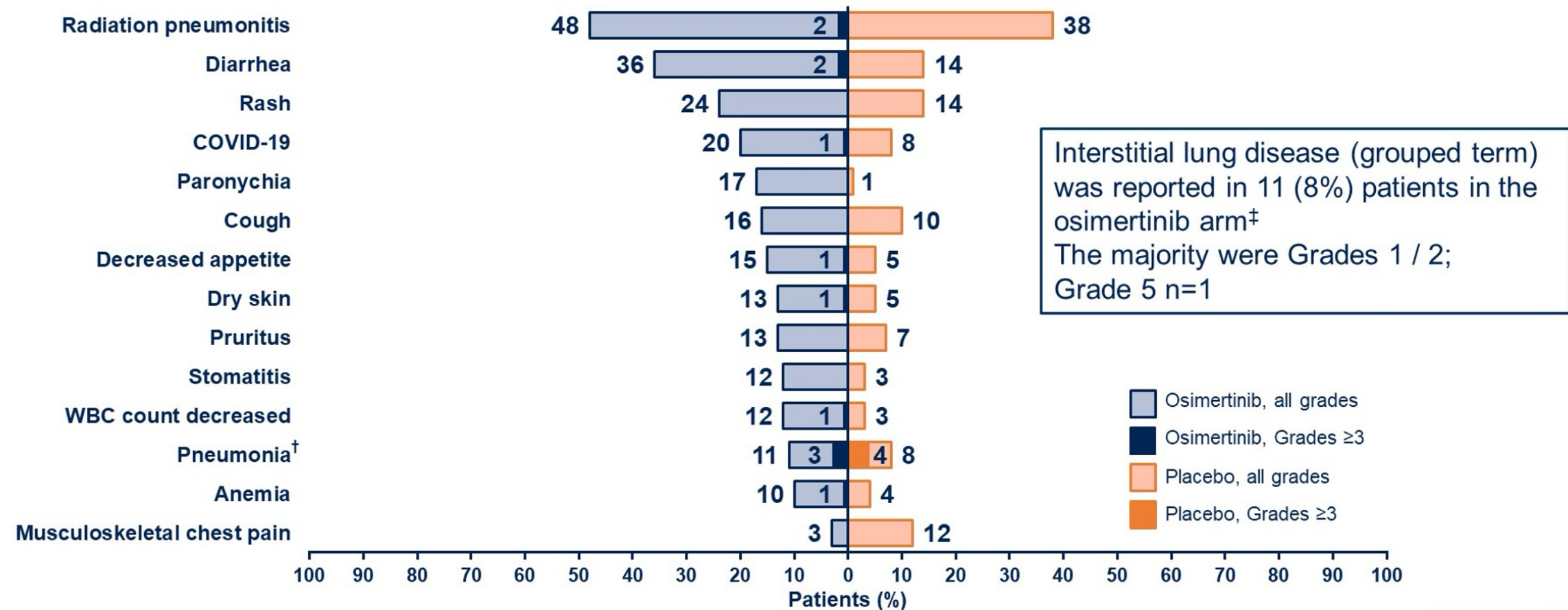
Characteristics, %	Osimertinib (n=143)	Placebo (n=73)
AJCC / UICC staging (8 th edition) at diagnosis: IIIA / IIIB / IIIC	36 / 47 / 17	33 / 52 / 15
Histology: adenocarcinoma / other	97 / 3	95 / 5
EGFR mutation at randomization.* Ex19del / L858R	52 / 48 [†]	59 / 41
Type of CRT: concurrent CRT / sequential CRT	92 / 8	85 / 15
Response to prior CRT: CR / PR / SD / PD / NE	3 / 47 / 43 / 0 / 8	4 / 37 / 51 / 0 / 8
Target lesion size by BICR:‡ mean (SD), mm	33 (18)	36 (17)

LAURA: PFS Outcomes by BICR



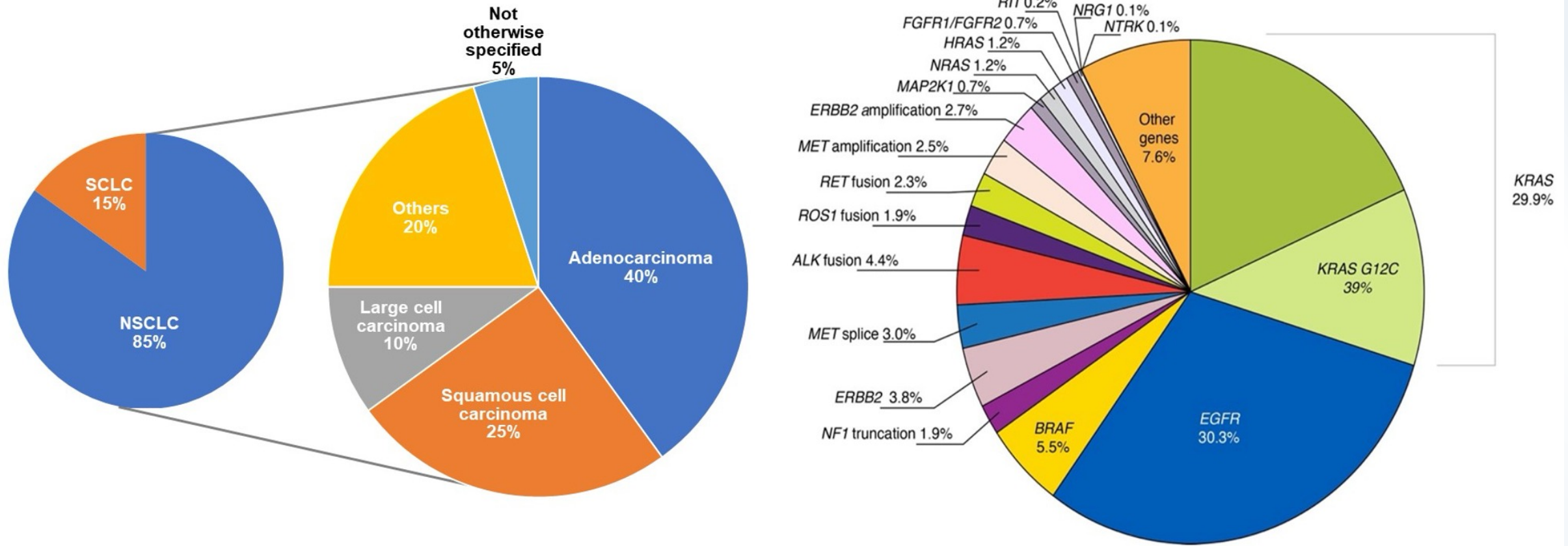
LAURA: Safety Profile

The most common AE in both arms was radiation pneumonitis; the majority were low grade (no Grade 4 / 5), non-serious and manageable



*AEs with incidence of 10% or more in either treatment arm are shown. Patients with multiple events in the same category counted only once in that category. Patients with events in more than one category are counted once in each of those categories. Includes AEs with an onset date on or after the date of first dose and up to and including 28 days following the discontinuation of study treatment and before starting subsequent cancer therapy; †One grade 5 AE of pneumonia was reported in the osimertinib arm; ‡Interstitial lung disease (grouped term) was reported in 1 patient (1%) in placebo arm; AE was pneumonitis, Grade 1. Data cut-off: January 5, 2024.

Landscape of Lung Cancer



Gubens M. ASCO 2024 Education Session ; Addeo et al. Cancer Treatment Reviews 2021.

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Molecular Biomarker-Positive Advanced NSCLC 9/2024

Target	1L Meds
EGFR mt Exon 19 del, L858R	Osimertinib Osi + chemo (FLAURA 2), ★ <u>Ami+Laz+chemo (MARIPOSA)</u> ★
EGFR mt Uncommon	Exon 20 ins: Ami_+ Chemo (PAPILLON) S768!, L861Q, G719X: Afat or Osi
ALK fusion	Alectinib, brigatinib, Ceritinib, <u>Lorlatinib</u> (Crozotinib) ★
ROS1	Crizotinib, Entrectinib, <u>Repotrectinib</u> ★
BRAF V600E	Dabrafenib/Trametinib, Encorafenib/Binimetinib
NTRK fusion	Larotrectinib, Entrectinib
RET fusion ★	Selpercatinib, pralsetinib
MET exon 14 skipping	Capmatinib, Tepotinib
HER2 mt or IHC 3+	

FLAURA2 Phase III study design

FDA
approval
2/16/2024

Safety run-in period (N=30)
Published in ESMO Open, 2021¹

Patients with untreated locally advanced / metastatic EGFRm NSCLC

Key inclusion criteria:

- Aged ≥ 18 years (Japan: ≥ 20 years)
- Pathologically confirmed non-squamous NSCLC
- Ex19del / L858R (local / central test)
- WHO PS 0 / 1
- No prior systemic therapy for advanced NSCLC
- Stable CNS metastases were allowed*
- Brain scans at baseline (MRI / CT)

Stratification by:

- **Race** (Chinese Asian / non-Chinese Asian / non-Asian)
- **EGFRm** (local / central test)
- **WHO PS** (0 / 1)

Osimertinib 80 mg (QD)
+ pemetrexed 500 mg/m²
+ carboplatin AUC5
or cisplatin 75 mg/m²
(Q3W for 4 cycles for
platinum-based
treatments)

Maintenance
osimertinib 80 mg (QD)
+ pemetrexed (Q3W)[†]

**Randomization
1:1 (N=557)**

Osimertinib 80 mg (QD)

Follow-up:

- RECIST 1.1 assessment at 6 and 12 weeks, then every 12 weeks until RECIST 1.1 defined radiological disease progression or other withdrawal criteria were met

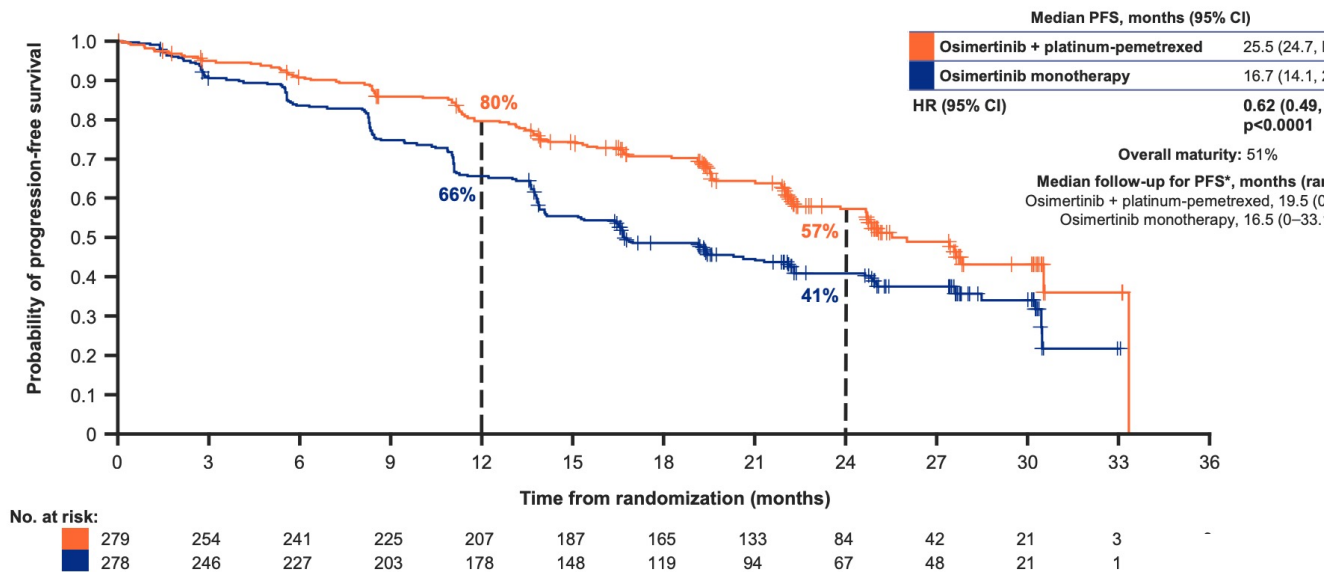
• **Primary endpoint:** PFS by investigator assessment per RECIST 1.1^{‡§}

- **Sensitivity analysis:** PFS by BICR assessment per RECIST 1.1

• **Secondary endpoints:** OS, ORR, DoR, DCR, HRQoL, safety (AEs by CTCAE v5) and PFS2[‡]

Progression-free survival per investigator

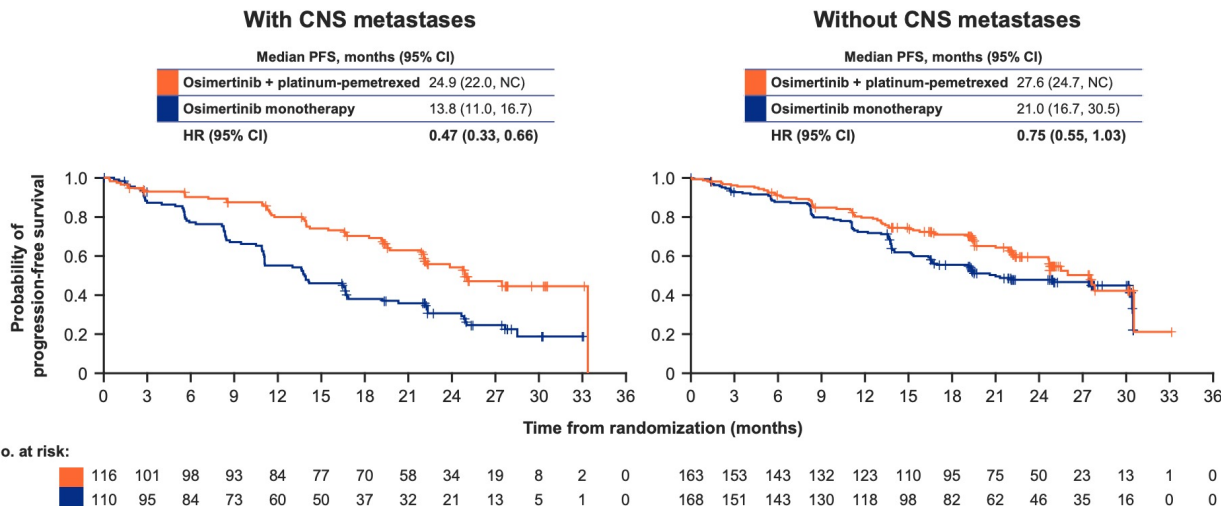
- Median PFS was improved by ~8.8 months with osimertinib plus platinum-pemetrexed vs osimertinib monotherapy



10 months improvement in PFS
w/ CNS mets

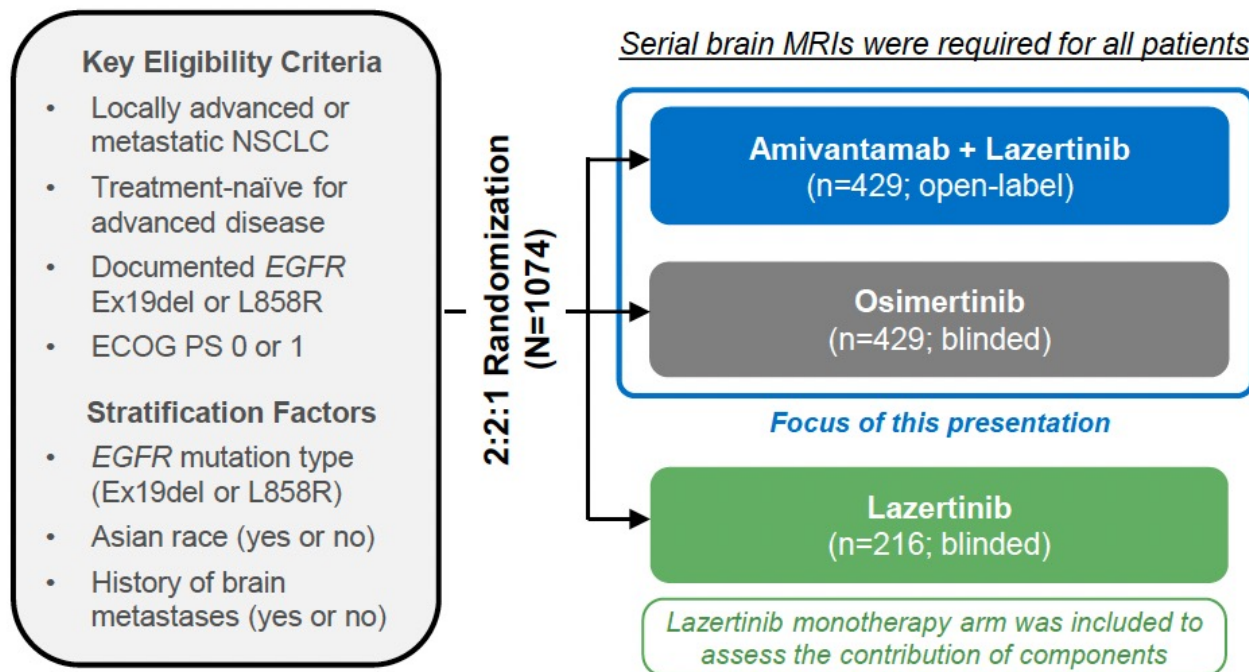
PFS per investigator in patients with / without CNS metastases at baseline*

9 months improvement in PFS



MARIPOSA Long Term Follow up

Phase 3 MARIPOSA Study Design



Primary endpoint of progression-free survival (PFS) by BICR per RECIST v1.1:

- **Amivantamab + lazertinib** vs osimertinib

Endpoints reported in this presentation^a:

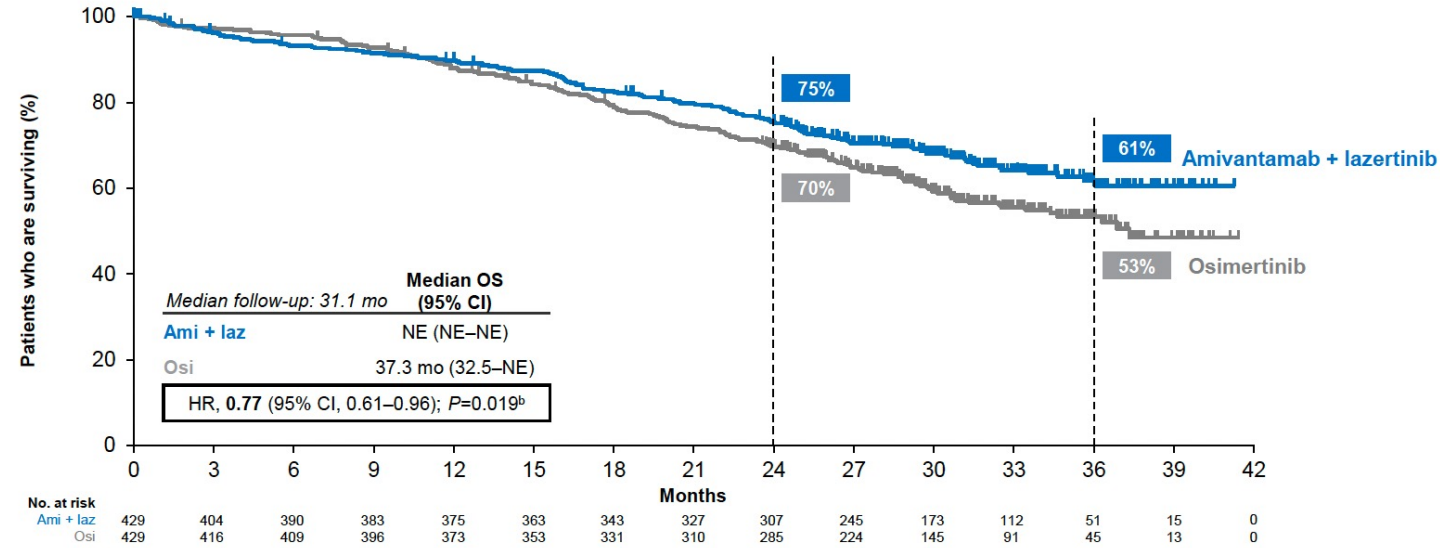
- Intracranial PFS (icPFS)
- Intracranial DoR (icDoR)
- Intracranial ORR (icORR)
- Time to treatment discontinuation (TTD)
- Time to subsequent therapy (TTST)
- PFS after first subsequent therapy (PFS2)
- Overall survival

^aEndpoints not part of formal statistical testing; all *P*-values in this presentation are nominal

Updated Overall Survival Analysis^a

A strong OS trend favoring amivantamab + lazertinib was observed

MAF
Ami
1L EGI

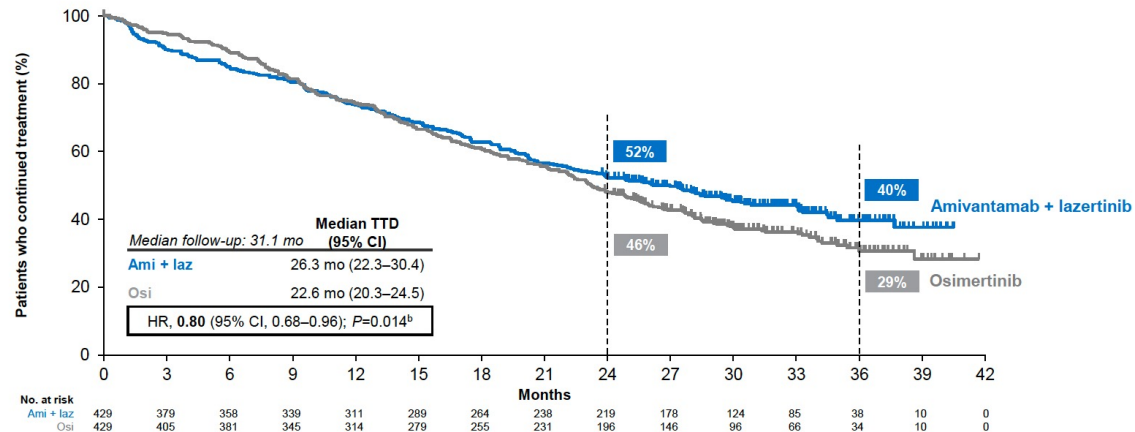


OS curves separate early and widen over time favoring amivantamab + lazertinib, with 61% of patients alive at 3 years vs 53% with osimertinib

Time to Treatment Discontinuation^a

Amivantamab + lazertinib demonstrated significantly longer TTD vs osimertinib

MAI
Am
1L EG

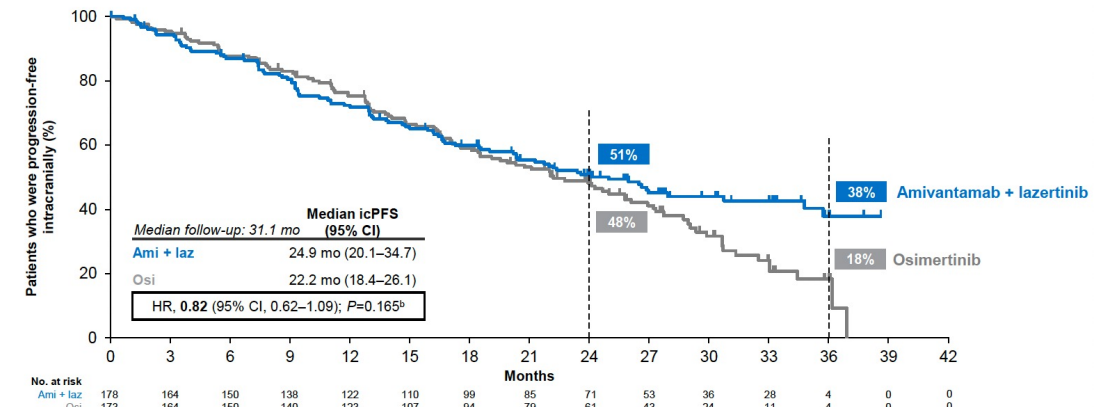


More patients remained on treatment at 3 years with amivantamab + lazertinib (40% vs 29%)

Intracranial PFS^a

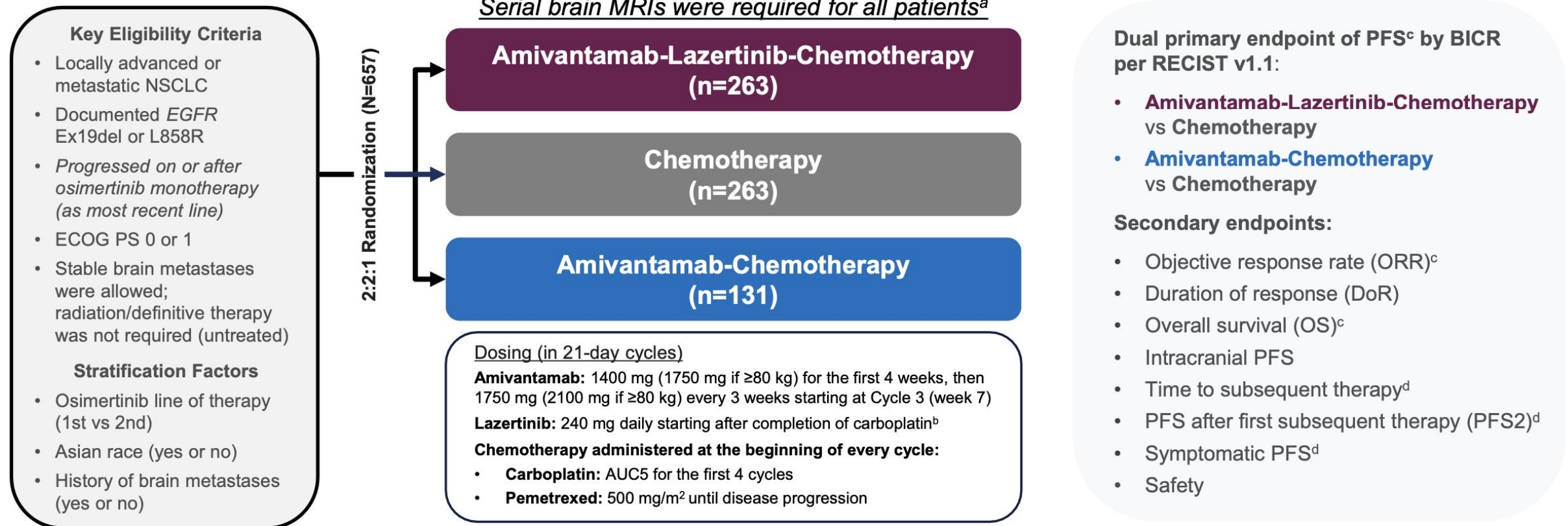
MARIPOSA required serial brain imaging for all patients, which provides robust evaluation of CNS outcomes
Amivantamab + lazertinib showed a favorable trend in icPFS with sustained and durable CNS control at 3 years

MAF
Ami
1L EGI



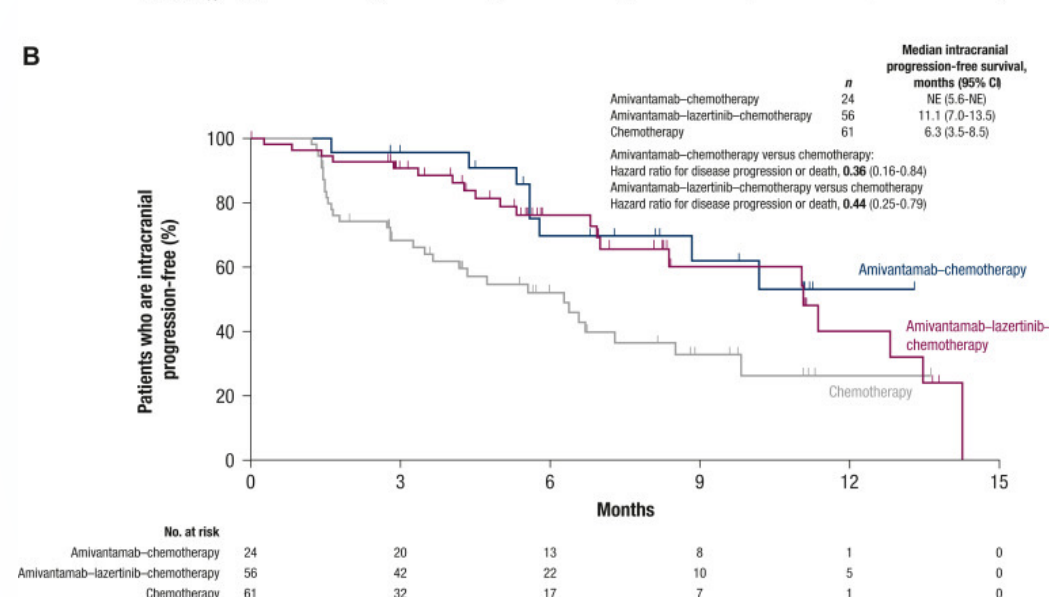
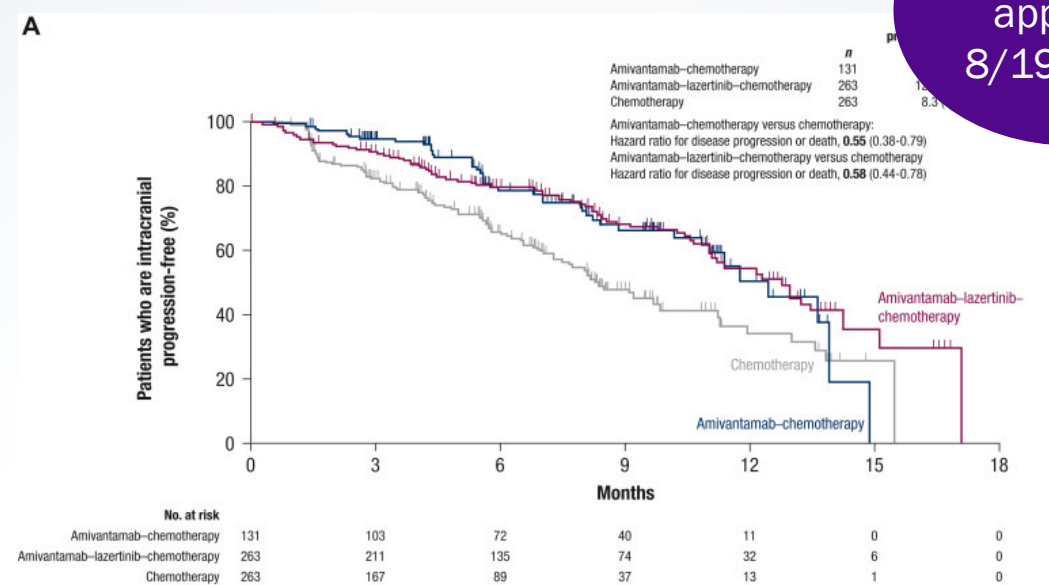
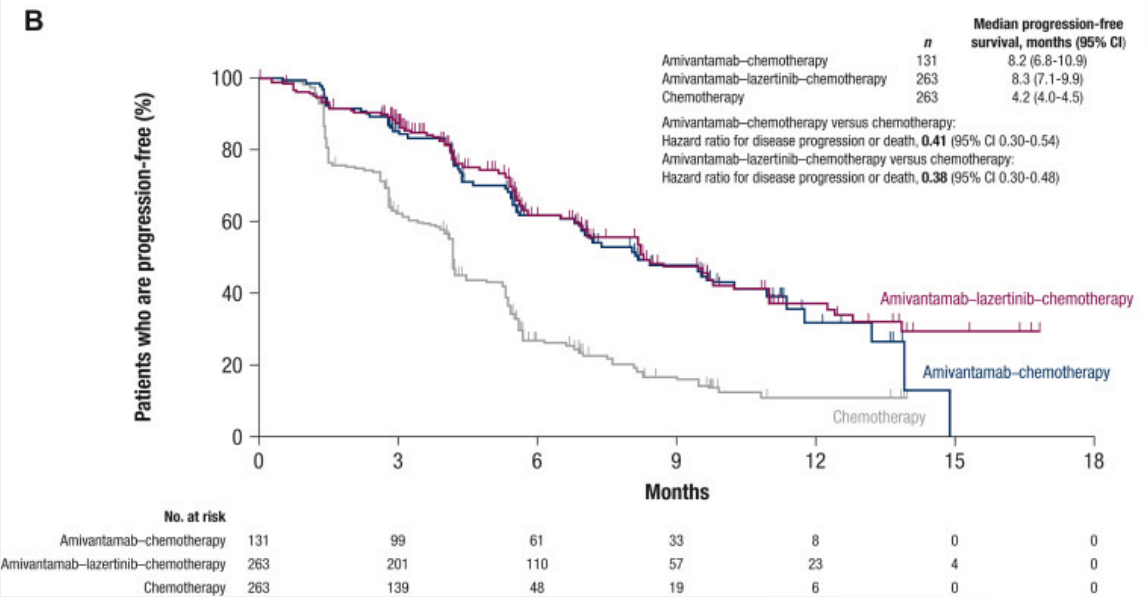
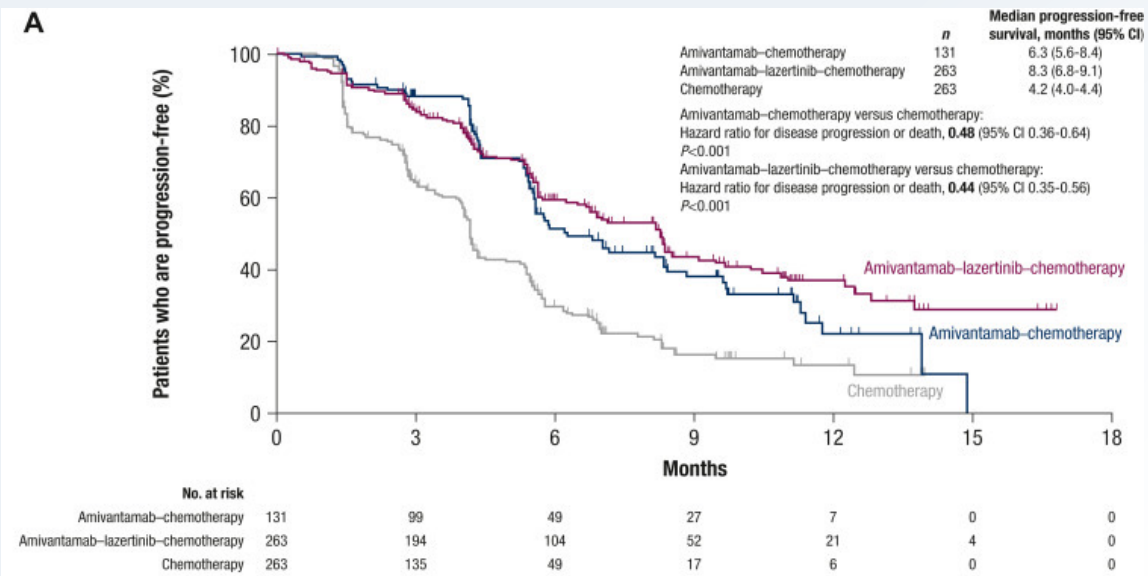
3-year landmark icPFS was double for amivantamab + lazertinib vs osimertinib (38% vs 18%)

MARIPOSA-2: Amivantamab plus chemo after Osimertinib



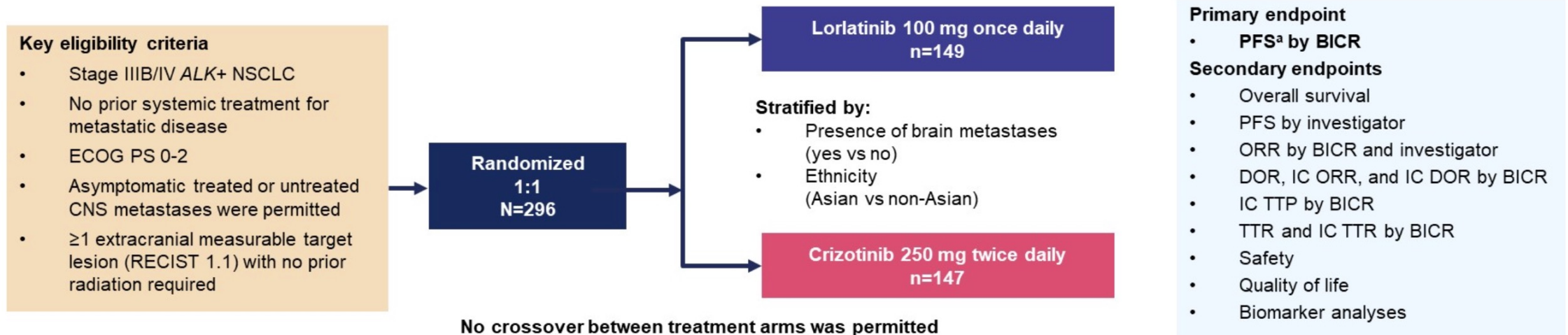
MARIPOSA-2: Amivantamab plus chemo after Osimertinib

FDA approval
8/19/2024



CROWN: A Randomized Global Phase 3 Study

- Lorlatinib is a brain-penetrant, third-generation ALK TKI that has broader coverage of *ALK* resistance mutations than second-generation ALK TKIs^{1,2}



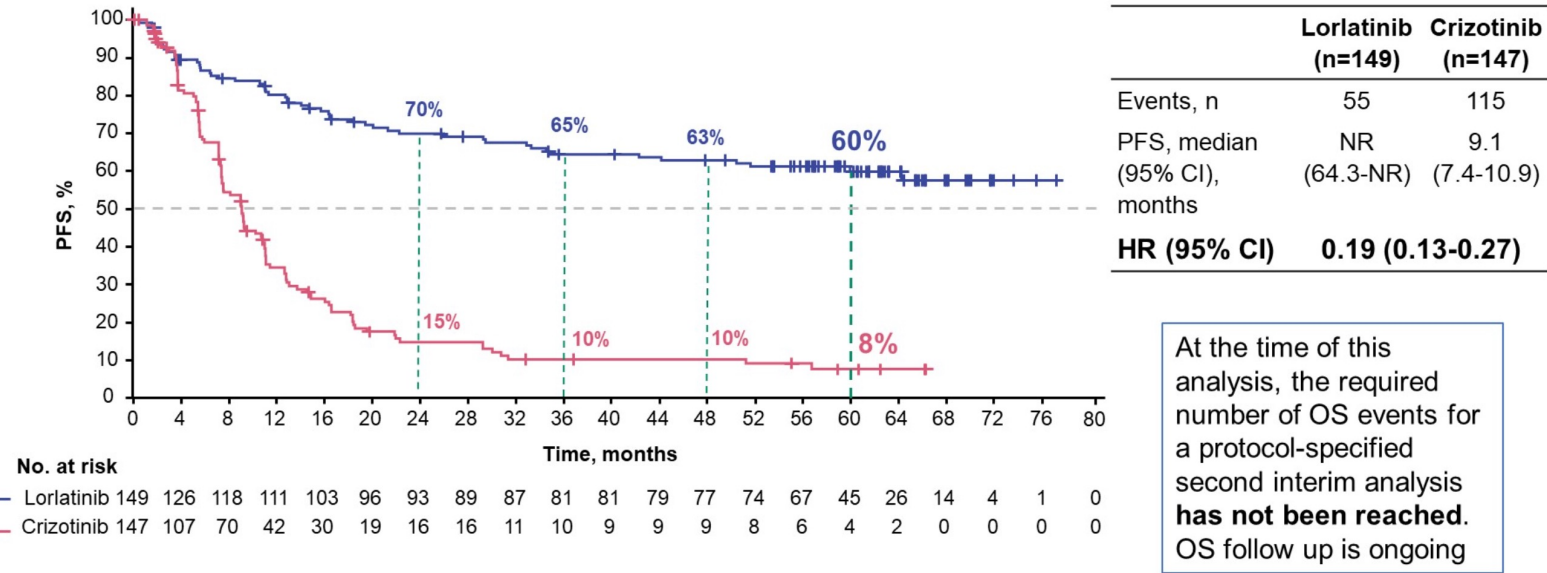
- At the planned interim analysis, at 18.3 months of median follow-up in the lorlatinib arm, median PFS by BICR was not reached (95% CI, NR-NR) with lorlatinib and 9.3 months (95% CI, 7.6-11.1 months) with crizotinib, with an HR of 0.28 (95% CI, 0.19-0.41) and $P < 0.001$ ³
- In a subsequent post hoc analysis, at 3 years of follow-up, median PFS by BICR was still not reached (95% CI, NR-NR) with lorlatinib and 9.3 months (95% CI, 7.6-11.1 months) with crizotinib (HR, 0.27; 95% CI, 0.18-0.39)⁴

ALK, anaplastic lymphoma kinase; BICR, blinded independent central review; CNS, central nervous system; DOR, duration of response; ECOG, Eastern Cooperative Oncology Group; HR, hazard ratio; IC, intracranial; NR, not reached; NSCLC, non-small cell lung cancer; ORR, objective response rate; PFS, progression-free survival; PS, performance status; RECIST, Response Evaluation Criteria in Solid Tumors; TKI, tyrosine kinase inhibitor; TTP, time to tumor progression; TTR, time to tumor response.

^aDefined as the time from randomization to RECIST-defined progression or death due to any cause.

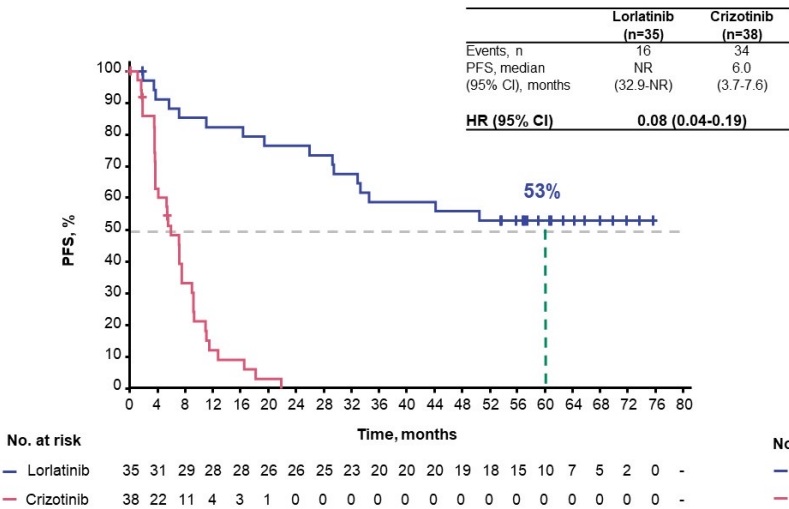
1. Johnson TW, et al. *J Med Chem*. 2014;57:4720-4744. 2. Shaw AT, et al. *Lancet Oncol*. 2017;18:1590-1599. 3. Shaw AT, et al. *N Engl J Med*. 2020;383:2018-2029. 4. Solomon BJ, et al. *Lancet Respir Med*. 2023;11:354-366.

At 60.2 Months of Median Follow-Up, Median PFS by Investigator Was Still Not Reached With Lorlatinib

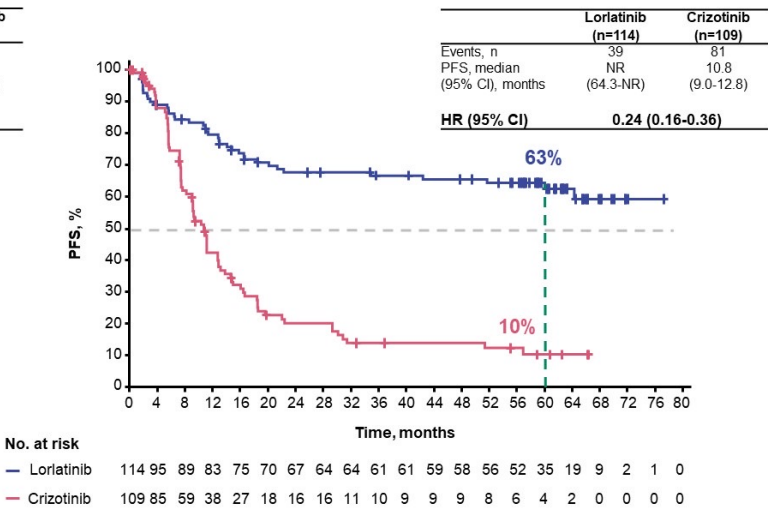


HR, hazard ratio; NR, not reached; OS, overall survival; PFS, progression-free survival.

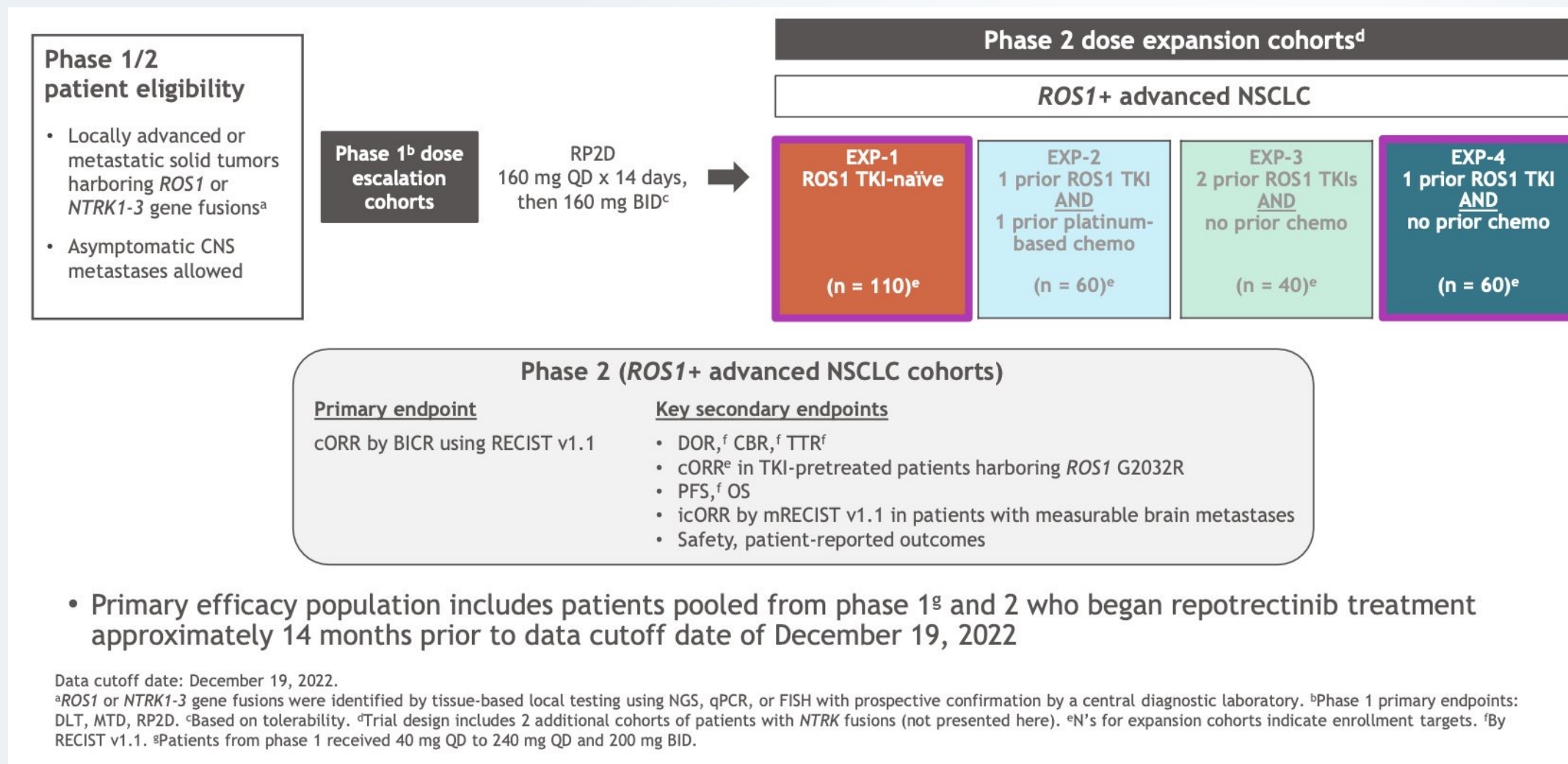
With Baseline Brain Metastases



Without Baseline Brain Metastases

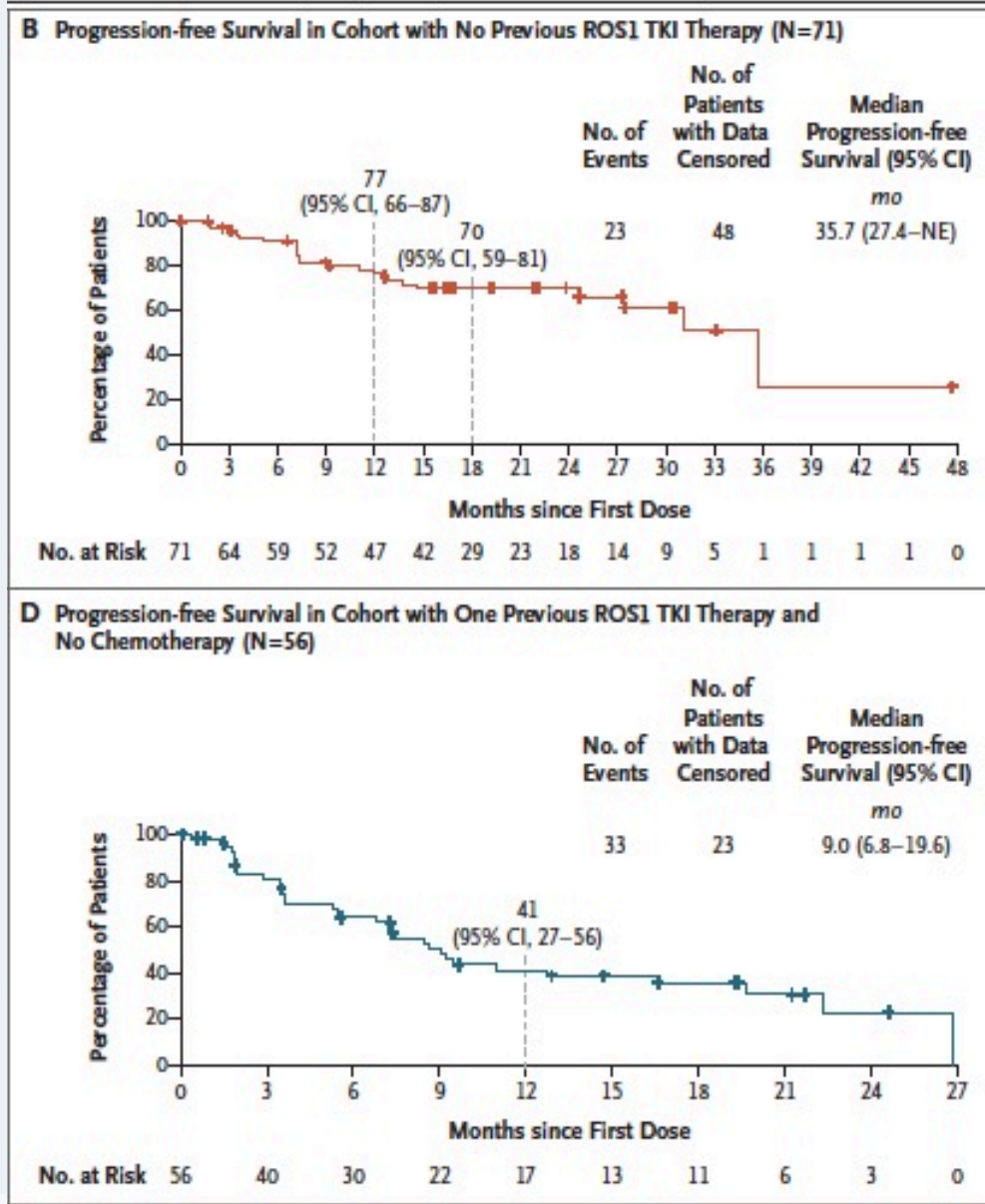


TRIDENT 1: Repotrectinib in advanced ROS1 or NTRK1-3 NSCLC



TRIDENT 1: Phase 1/2 Reprotectinib

FDA
approval
6/13/2024



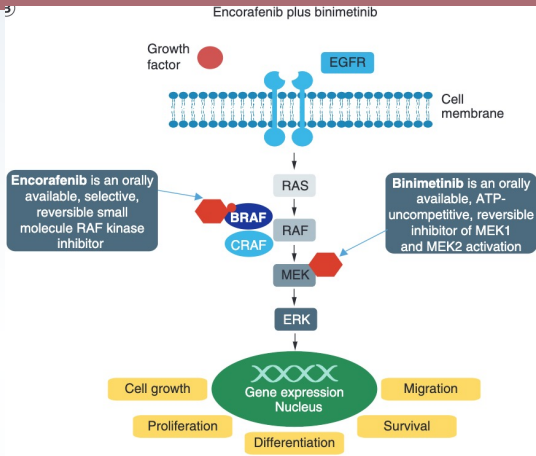
Most common adverse effects

- Dizziness - 62%
 - Grade 3+ in 3%
 - 11% dose reduction, 8% dose interruption
- Dysguesia- 53%
- Constipation – 38%
- Anemia – 38%
- Paresthesia – 34%

Most common grade 3 AEs:

- 29% overall
- 5% neuro, 4% anemia, CK elevations

PHAROS: Encorafenib + Binimetinib for BRAF V600E



Single-arm, multicenter, open-label study

Screening period

Patients with *BRAF*^{V600E}-mutant metastatic NSCLC

- ECOG PS 0 or 1
- No *EGFR* mutation, *ALK* fusion, or *ROS1* rearrangement
- No more than 1 prior line of treatment in the advanced setting
- No prior treatment with BRAFi + MEKi
- No symptomatic brain metastases

BRAF mutation testing

- Determined locally by PCR or NGS-based assay; sent to central laboratory
- Pleural fluid, fresh tissue, archived, FNA

Treatment naïve (*BRAF*^{V600E}) (n = 60)

OR

Received first-line treatment with a PD-1/PD-L1 inhibitor alone or in combination with platinum-based chemotherapy or with standard platinum-based chemotherapy (*BRAF*^{V600E}) (n = 37)

OR

Treatment naïve or second-line treatment (*BRAF* mutations other than *BRAF*^{V600E}) (n = 10)

Enrollment

Treatment period

Encorafenib: 450 mg q.d.
Binimetinib: 45 mg b.i.d.
28-day cycles
Treat until PD or unacceptable toxicity

Radiographic disease assessments until PD

Primary endpoint: ORR (by IRR)
Secondary endpoints: ORR (by investigator); DOR, DCR, and PFS (all by IRR and investigator); OS; incidence of AEs

Follow-up period

30-day safety

Radiographic disease assessments if discontinued for reasons other than PD

Subsequent anti-cancer therapies

Overall survival

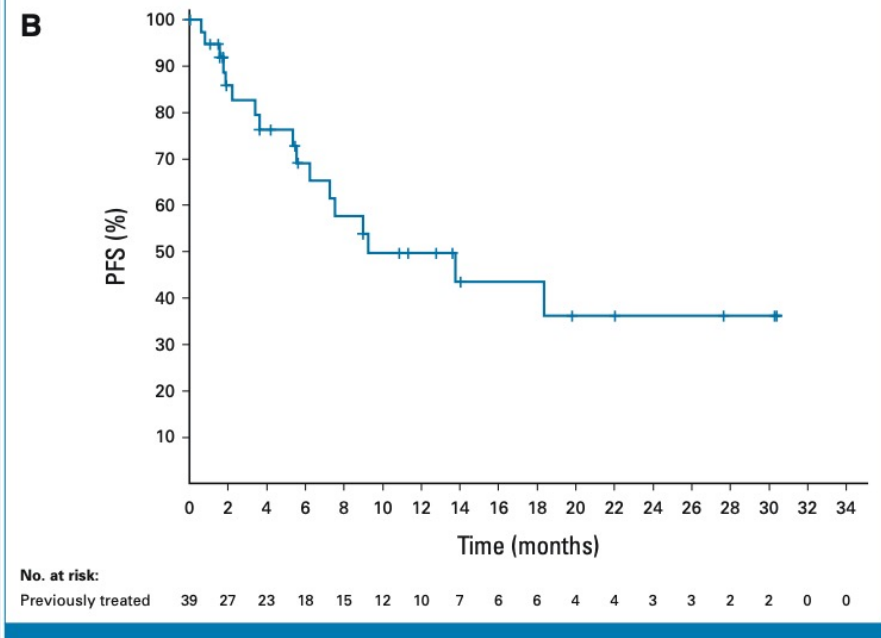
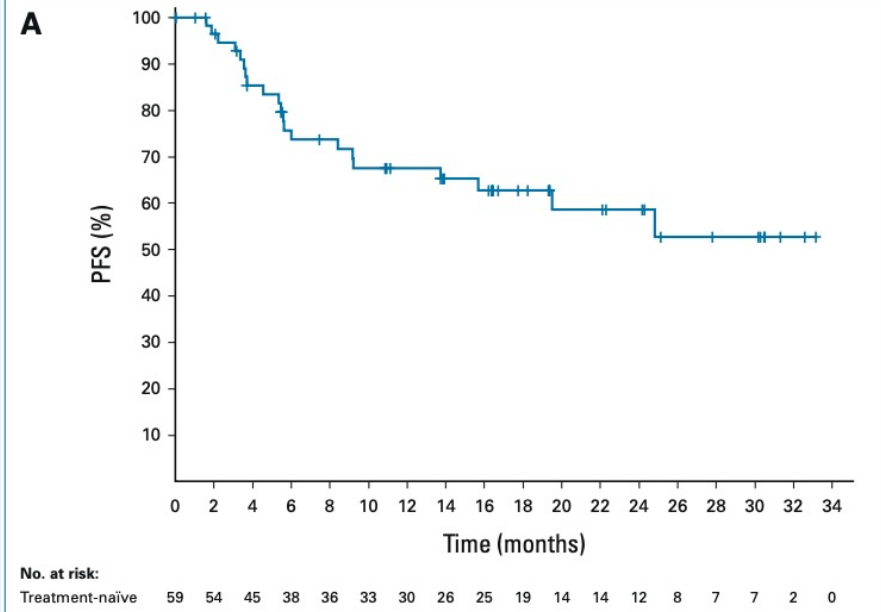


FIG 2. PFS by independent radiology review in (A) treatment-naïve patients and (B) previously treated patients. PFS, progression-free survival.

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AE Preferred Term	Overall (N = 98)		
	Any Grade	Grade 3	Grade 4
Any TRAEs, No. (%)	92 (94)	37 (38)	3 (3) ^a
Nausea	49 (50)	3 (3)	0
Diarrhea	42 (43)	4 (4)	0
Fatigue	31 (32)	2 (2)	0
Vomiting	28 (29)	1 (1)	0
Anemia	18 (18)	3 (3)	0
Vision blurred	17 (17)	1 (1)	0
Constipation	13 (13)	0	0
ALT increased	12 (12)	5 (5)	0
AST increased	12 (12)	7 (7)	0
Pruritus	12 (12)	0	0
Blood creatine phosphokinase increased	11 (11)	0	0
Peripheral edema	11 (11)	0	0
Abdominal pain	10 (10)	0	0
Alopecia	10 (10)	0	0
Asthenia	10 (10)	3 (3)	0
Dry skin	10 (10)	0	0

FDA approval
10/11/2023

	Dabrafenib +Trametinib	Encorafenib + Binimetinib
Grade 3 or 4	69%	41%
AE leading to D/C	22%	15%
AE leading to dose reduction	39%	24%
Pyrexia, any grade	64%	22%

HER2 mutated and IHC3+

FDA approval
4/5/2024

DESTINY-Lung 1

- Open label basket trial, phase 2 design n=91 w/ NSCLC
- HER2 mutation
 - RR 55%, mPFR 8.2 m, mDOR 9.3
 - Safety: Discontinuation in 25% - pneumonitis in 26%

All HER2+ (IHC3+) solid tumor with prior systemic therapy

- DESTINY-PanTumor02 (ORR 51.4%, mDOR 19.4m)
- DESTINY Lung (ORR 52.9%, mDOR 6.9m)
- DESTINY-CRC02 (ORR 46.9%, mDOR 5.5m)

Small Cell Lung Cancer

ADRIATIC

Tarlatamab

Cisplatin/Etoposide

IV Topotecan

Carbo/Etoposide

Prophylactic Cranial
Irradiation
(LS-SCLC)

1986

1998

1999

Platinum/Etoposide
+ Durvalumab
(CASPIAN)

Lurbinectedin

Pembrolizumab

Carbo/Etoposide
+ Atezolizumab
(IMPower133)

Nivolumab

Trilaciclib

2019

2020

2021

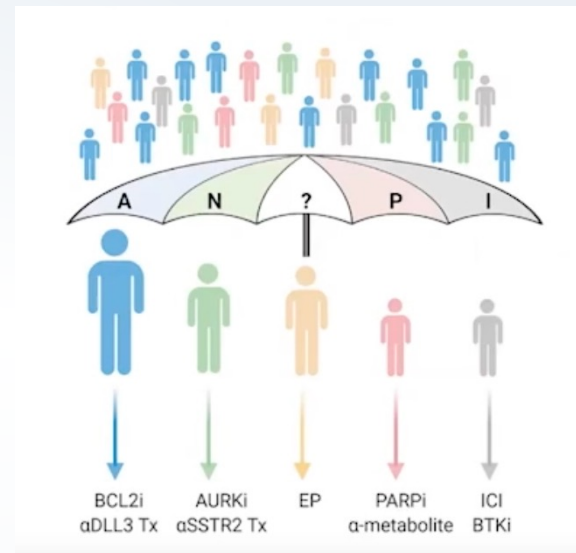
2023

2024

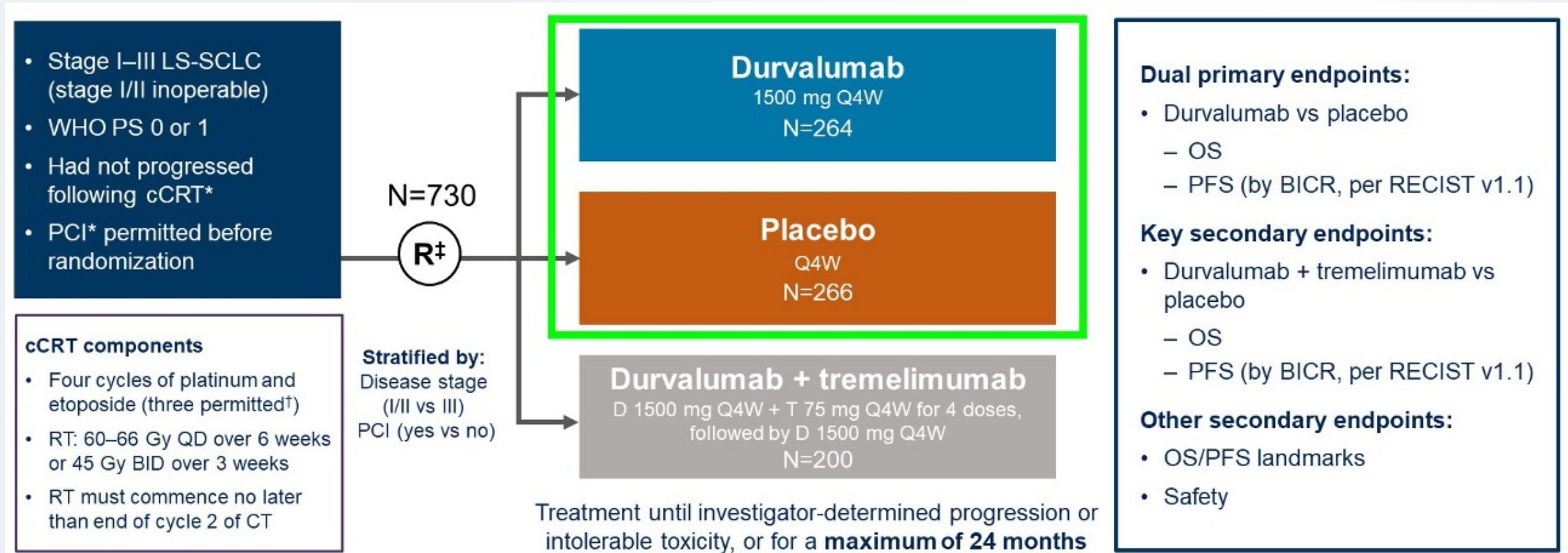
(LS-SCLC)

Platinum/Etoposide
+ Durvalumab
(ADRIATIC)

Tarlatamab



ADRIATIC: Phase III Study Design

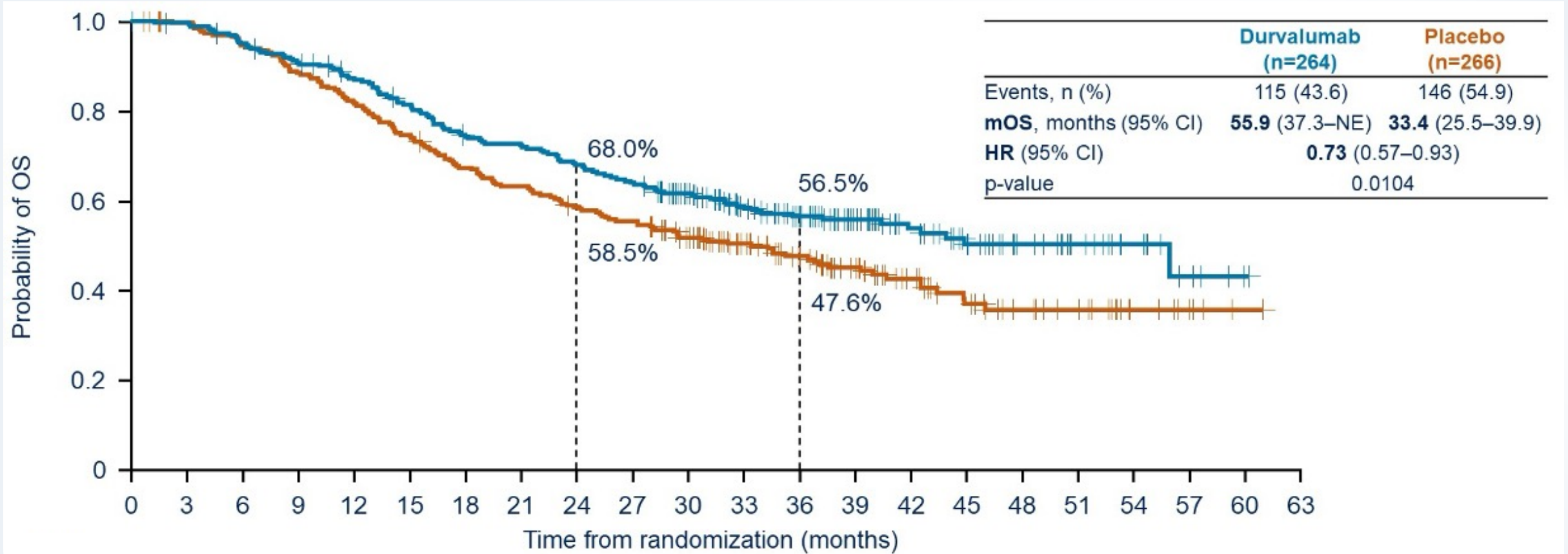


cCRT = concurrent chemoradiation therapy; PCI = prophylactic cranial irradiation; RT = radiation therapy

Spigel DR et al. ASCO 2024;Abstract LBA5.

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ADRIATIC: Overall Survival (Dual Primary Endpoint)

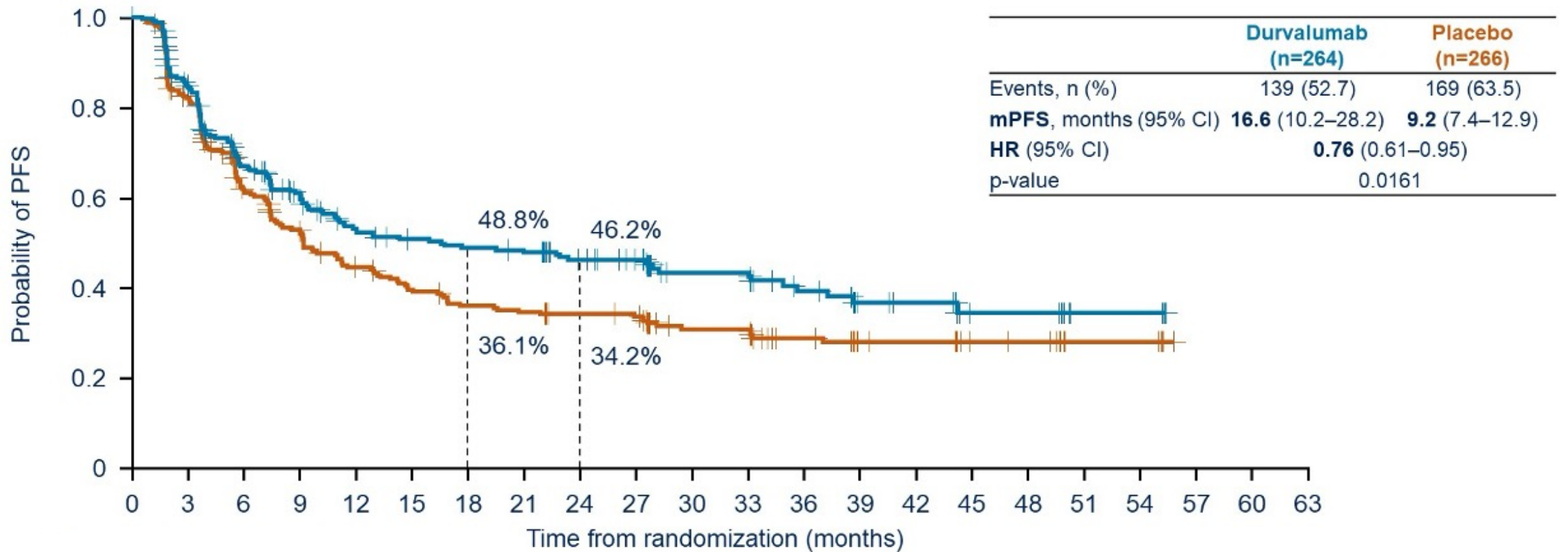


mOS = median overall survival

Spigel DR et al. ASCO 2024;Abstract LBA5.

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ADRIATIC: Progression-Free Survival (Dual Primary Endpoint)

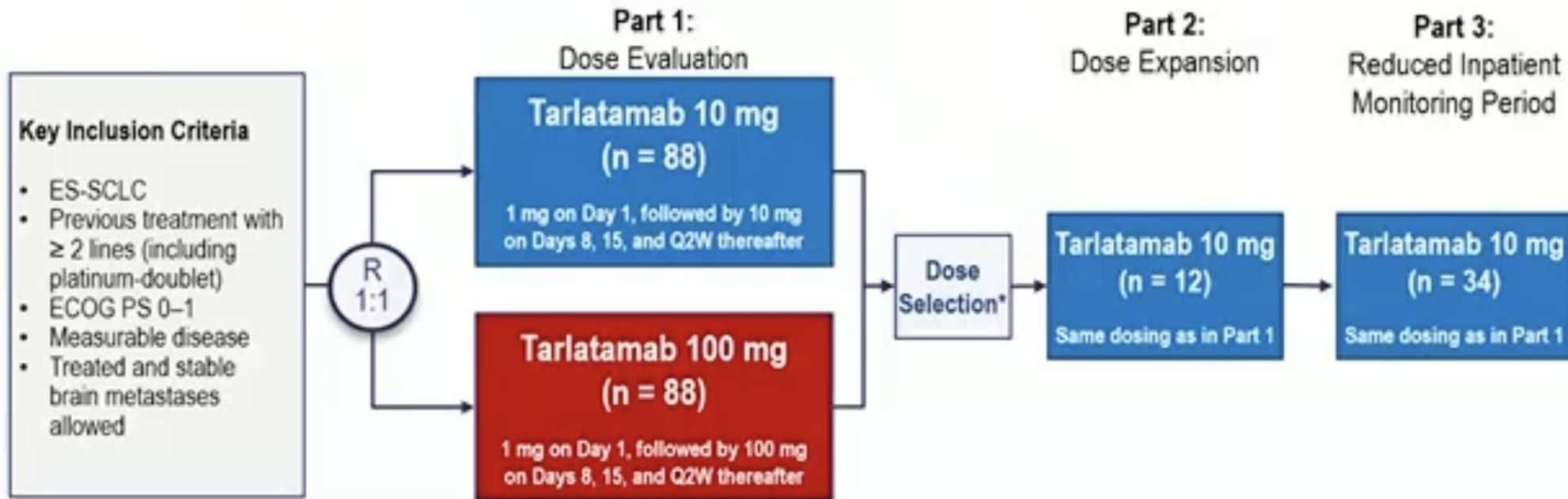
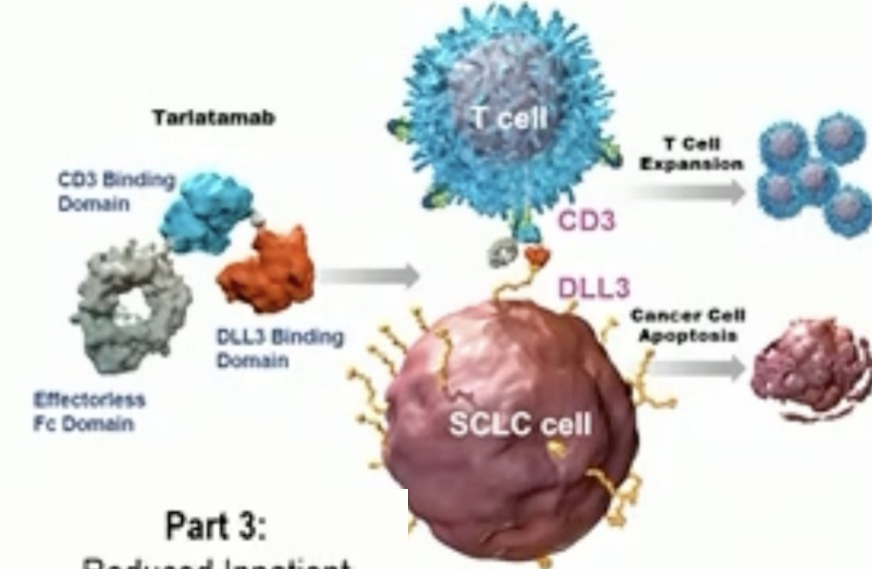


mPFS = median progression-free survival

Spigel DR et al. ASCO 2024;Abstract LBA5.

LEAD2024: Leadership, Empowerment, and Development

Dellphi-301: Tarlatamab for ES-SCLC

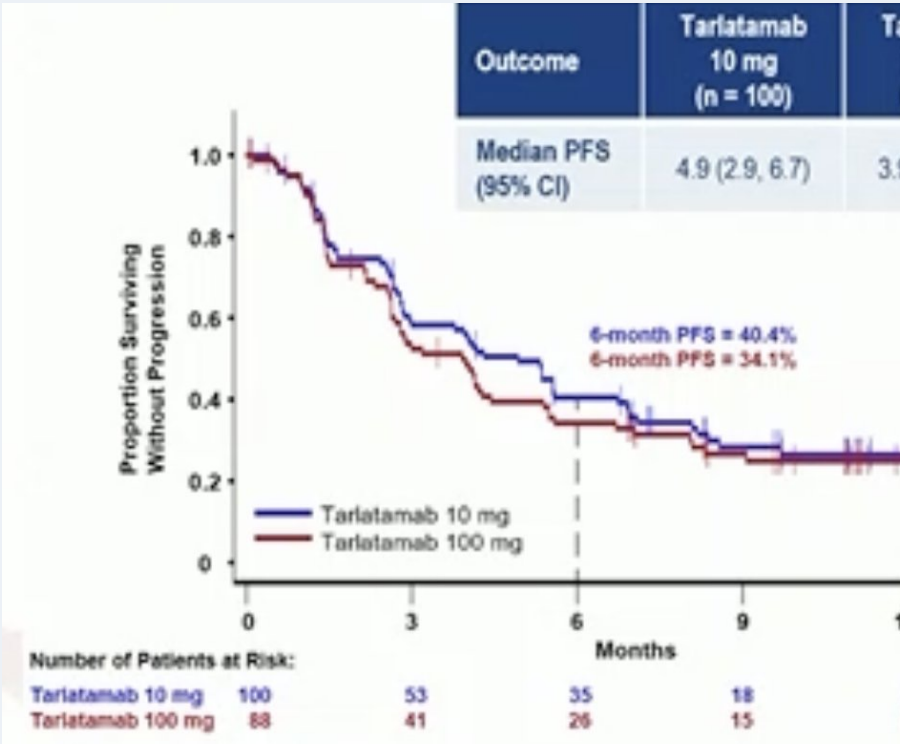


Primary Endpoint: ORR per RECIST v1.1 by BICR, TEAEs, tarlatamab serum concentrations

Secondary Endpoints Included: DOR, DCR, PFS per RECIST v1.1 by BICR, OS

DeLLphi-301: Efficacy Analysis Set per ITT Analysis

FDA
approval
5/16/2024



	10 mg (n = 100)*	100 mg (n = 88)*
ORR, % (97.5% CI)	40.0 (29.1—51.7)	31.8 (21.1—44.1)
Complete response, n (%)	1 (1.0)	7 (8.0)
Partial response, n (%)	39 (39.0)	21 (23.9)
Stable disease, n (%)	30 (30.0)	27 (30.7)
Progressive disease, n (%)	20 (20.0)	13 (14.8)
Not evaluable, n (%)	2 (2.0)	4 (4.5)
Death before post-baseline scan, n (%)	6 (6.0)	13 (14.8)
No post-baseline scan, n (%)	2 (2.0)	3 (3.4)
mDoR, mo (95% CI)	NE (5.9—NE)	NE (6.6—NE)
Disease control rate % (95% CI)	70.0 (60.0, 78.8)	62.5 (51.5, 72.6)
mOS, mo (95% CI)	14.3 (10.8—NE)	NE (12.4—NE)
mPFS, mo (95% CI)	4.9 (2.9—6.7)	3.9 (2.6—4.4)

ITT = intent to treat; ORR = objective response rate
LEAD2024: Leadership, Empowerment, and Development
Paz-Ares L et al. ESMO 2023;Abstract LBA92.

Tarlatamab Adverse Effects

TEAEs, n (%)	Part 1 + 2 Tarlatamab 10 mg (n = 99)	Part 1 Tarlatamab 100 mg (n = 87)	Part 3 Tarlatamab 10 mg (n = 34)
Any grade	96 (97)	87 (100)	34 (100)
≥ Grade 3	57 (58)	56 (64)	22 (65)
Related to tarlatamab, any grade	89 (90)	81 (93)	29 (85)
≥ Grade 3	29 (29)	29 (33)	5 (15)
Fatal	0	0	1 (3) [†]
Leading to dose interruption/reduction	14 (14)	25 (29)	3 (9)
Leading to discontinuation	4 (4)	3 (3)	0

Most Common TEAEs in ≥ 20% of Patients, n (%)	Part 1 + 2 Tarlatamab 10 mg (n = 99)	Part 1 Tarlatamab 100 mg (n = 87)	Part 3 Tarlatamab 10 mg (n = 34)
CRS	49 (49)	53 (61)	19 (56)
Grade 1–2	49 (49)	48 (55)	18 (53)
≥ Grade 3	0	5 (6)	1 (3)
Decreased appetite	25 (25)	38 (44)	13 (38)
Pyrexia	38 (38)	29 (33)	8 (24)
Constipation	28 (28)	22 (25)	8 (24)
Anemia	26 (26)	22 (25)	9 (26)
Asthenia	20 (20)	21 (24)	10 (29)
Dysgeusia	24 (24)	12 (14)	14 (41)
Fatigue	21 (21)	17 (20)	9 (26)

Additional Interventions for CRS:

Patients receiving tarlatamab, n (%)	10 mg (n = 133)	100 mg (n = 87)
Tocilizumab	7 (5)	9 (10)
Supplemental oxygen	11 (8)	8 (9)
Vasopressor support	1 (1)	1 (1)

**So many updates in lung cancer,
so little time...**

Thank you!