

Microcitoma Polmonare: quali novità?

Gabriele Minuti, MD
UOSD Sperimentazioni Cliniche:
Fase 1 e Medicina di Precisione
Istituto Nazionale Tumori,
IRCCS, Regina Elena (IRE), Roma



Congresso Nazionale

CARCINOMA DEL POLMONE: QUALI NOVITÀ NEL 2024?

V EDIZIONE

28 OTTOBRE 2024

VERONA

Hotel Leon D'Oro

Responsabile Scientifico
STEFANIA GORI



Disclosures

.Dr Minuti discloses the following conflicts of interest:

.Fees for membership of an advisory board or lectures or medical writer from:

- A. Astra-Zeneca
- B. Roche
- C. BMS
- D. Gilead
- E. Novartis
- F. Sanofi
- G. Amgen
- H. MSD
- I. Johnson & Johnson
- J. Daiichi Sankyo

Small-Cell LC remains the biggest challenge in thoracic oncology

Poor prognosis

Highly sensitive to initial chemo, but most patients relapse and die within 2 years

Neuroendocrine tumor

Originating from neuroendocrine cells

Aggressive

Fast-growing tumor characterized by high mitotic rate and early metastasis, requiring rapid intervention

Comorbidities

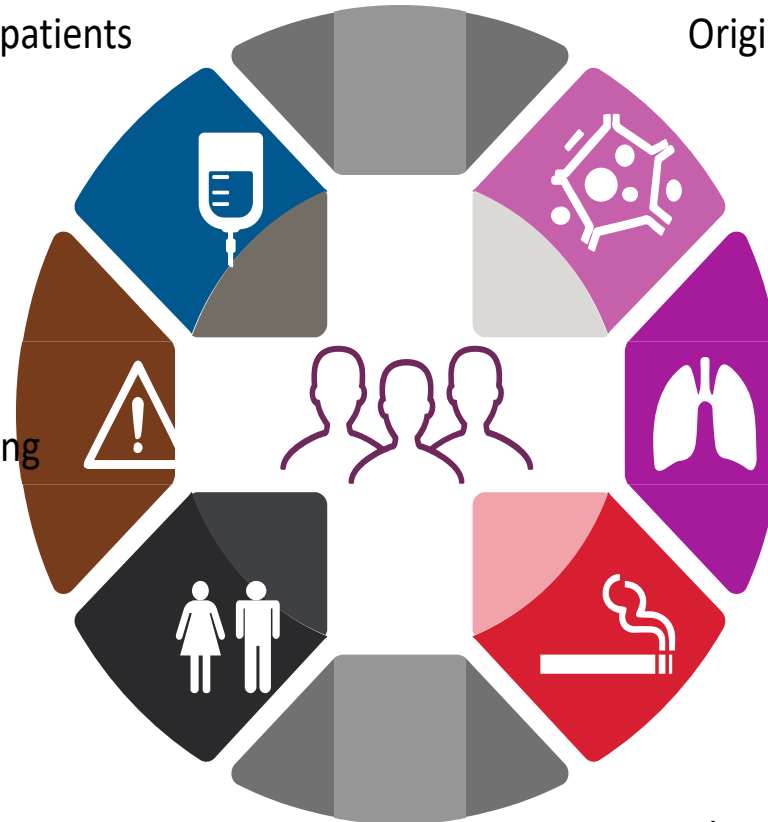
Frequently exhibit COPD, ischemic cardiomyopathy and hypertension

Clinical presentation

Typically with short anamnesis, symptoms of dyspnea and persistent cough

Smoking

SCLC occurs almost exclusively in smokers



SCLC management in clinical practice

1. Decipher disease

- ✓ Accurate staging – TNM System, 8 th version preferred*
- ✓ Accurate patient evaluation (age, PS, comorbidities, cancer-related symptoms,)

2. Define the goal of treatment

- ✓ Curative
- ✓ Palliative (even in LD-SCLC)

3. Consider facilities

- ✓ Access to multidisciplinary team, including RT units
- ✓ Availability of Palliative team

4. Start treatment

- ✓ Timing

SCLC and Simultaneous Care

Journal Pre-proof

Simultaneous Care provision to patients with Small Cell Lung Cancer in Lazio region: practical recommendations of a multidisciplinary group

Sabrina Mariotti, Gabriele Minuti, Lorenza Landi, Emilio Bria, Giorgia Carlucci, Mariantonietta Di Salvatore, Raffaele Giusti, Aurelia Iurato, Sara Ramella, Maria Adelaide Ricciotti, Gian Paolo Spinelli, Marco Tineri, Francesco Scarcella, Mario Rosario D'andrea

PII: S2405-8440(24)15355-8

DOI: <https://doi.org/10.1016/j.heliyon.2024.e39324>

Reference: HLY 39324

To appear in: *HELIYON*

Received Date: 14 March 2024

Revised Date: 10 October 2024

Accepted Date: 11 October 2024

Please cite this article as: Simultaneous Care provision to patients with Small Cell Lung Cancer in Lazio region: practical recommendations of a multidisciplinary group, *HELIYON*, <https://doi.org/10.1016/j.heliyon.2024.e39324>.



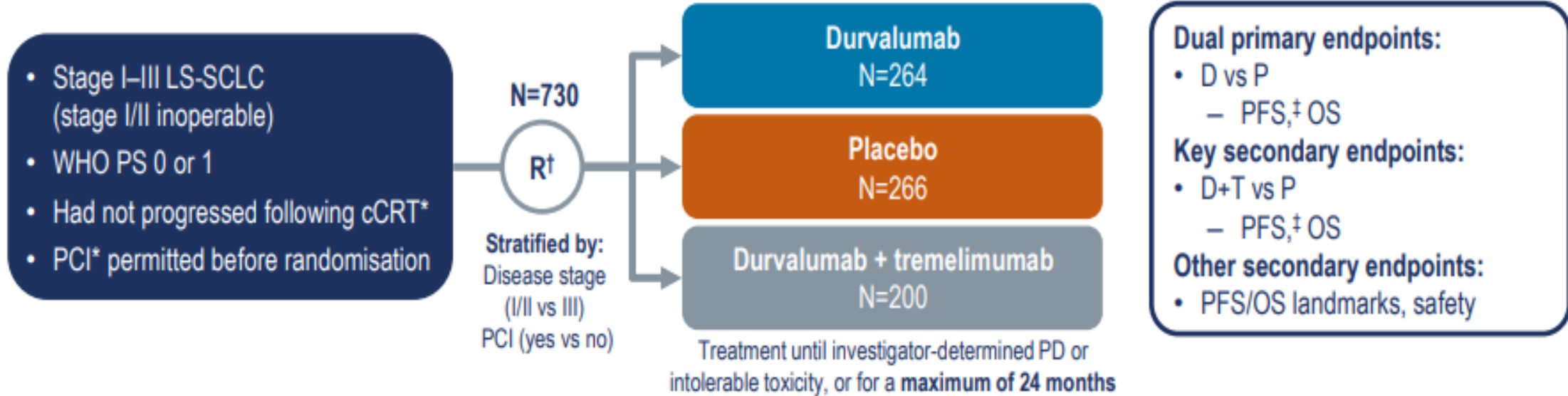
Selected clinical trials with IO in LS-SCLC

Trial	Ph	Setting	Study Arm(s): E) Experimental; C) Control	N	Primary End-point (s)	Main Results/Status	Start Date–Estimated completion rate
STIMULI (NCT02046733)	II	Maintenance after CRT	E) nivolumab + ipilimumab C) observation	E) 78 C) 75	PFS, OS	mPFS: 10.7 vs. 14.5 [HR = 1.02 (0.66-1.58), 2-sided $p = 0.93$]; mOS: NR vs. 32.1 [HR = 0.95 (0.59-1.52), $p = 0.82$]	July 28, 2014–January 2022 (completed early in 2019)
ADRIATIC (NCT03703297)	III	Maintenance after CRT	E) durvalumab +/- tremelimumab C) placebo	724	PFS, OS	Ongoing	September 27, 2018–May 10, 2024
LU-005 (NCT03811002)	II/ III	Concurrent with CRT	E) CRT + atezolizumab C) CRT	506	PFS, OS	Ongoing	May 28, 2019–December 28, 2026
ACHILES (NCT03540420)	II	Maintenance after CRT	E) atezolizumab C) observation	212	2-year survival	Ongoing	July 31 2018–December 2026
NCT04189094	II	Induction and maintenance after CRT	E) sintilimab + PE → CRT → sintilimab C) PE → CRT	140	PFS	Ongoing	January 1, 2020–July 1, 2023
NCT04308785	II	Maintenance after CRT	E) atezolizumab + tiragolumab C) atezolizumab + placebo	150	PFS	Ongoing	December 1, 2021–February 15, 2025
NCT04952597	II	Concurrent and maintenance after CRT	E) CRT + ociperlimab + tislelizumab → ociperlimab + tislelizumab E) CRT + tislelizumab → tislelizumab C) CRT	120	PFS	Ongoing	July 15, 2021–March 30, 2024

PE, platinum-etoposide; CRT, concomitant chemoradiotherapy.

Phase III, ADRIATIC trial, LS-SCLC

Ongoing, randomised, double-blind, placebo-controlled, multicentre, international study

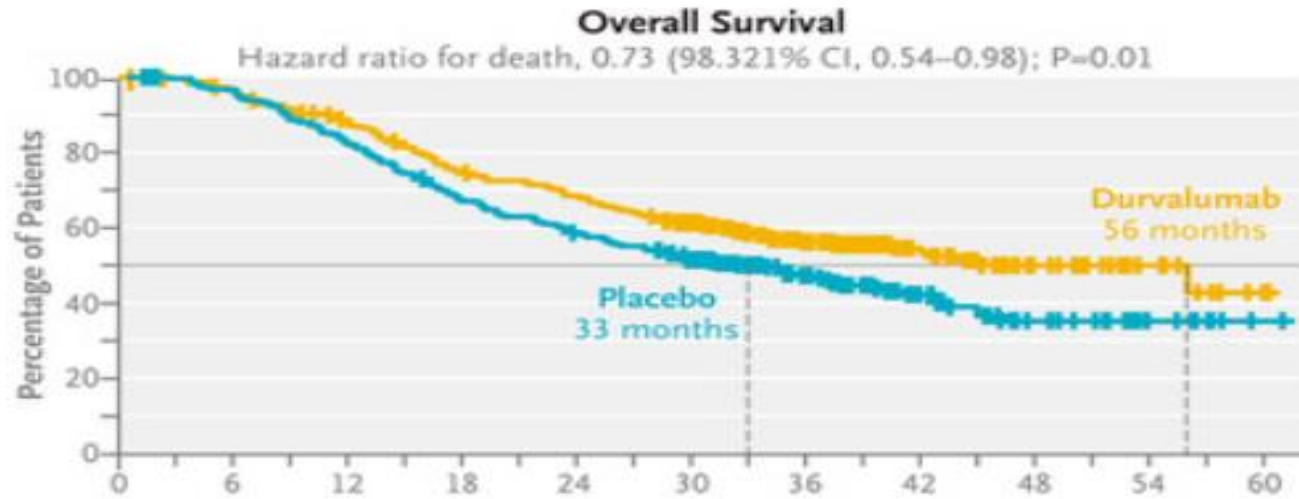


At the first interim analysis:¹

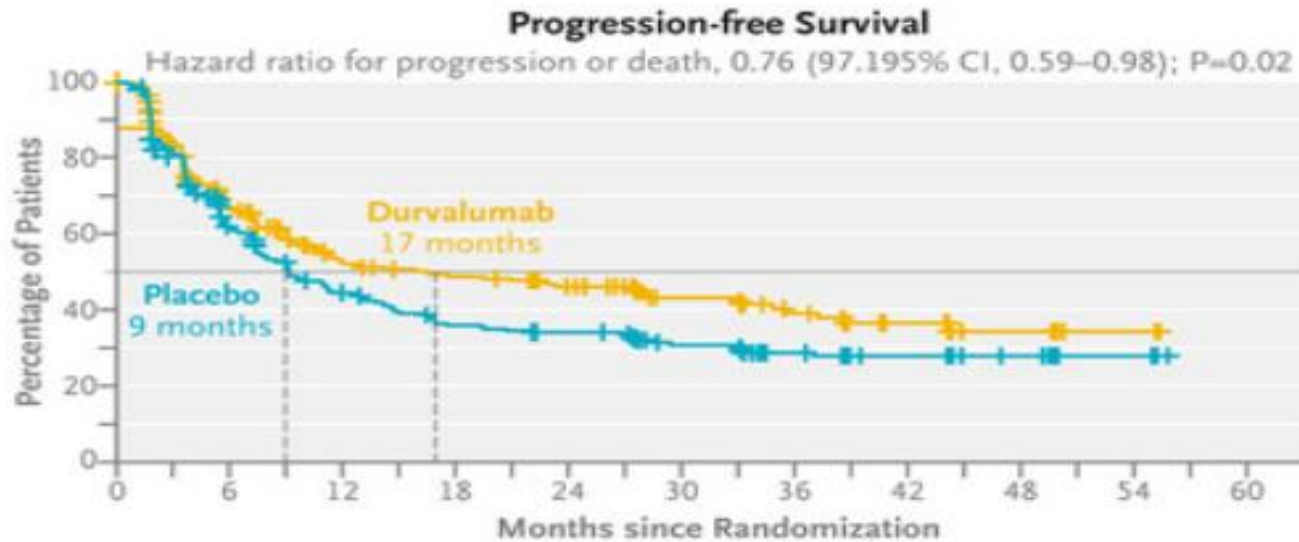
- Consolidation durvalumab significantly improved the dual primary endpoints of OS and PFS versus placebo; generally consistent treatment benefit across predefined patient subgroups
- Treatment well tolerated; safety consistent with known safety profile of durvalumab in the post-cCRT setting
- Durvalumab + tremelimumab arm remained blinded

Phase III, ADRIATIC trial, LS-SCLC, Dual primary end-point

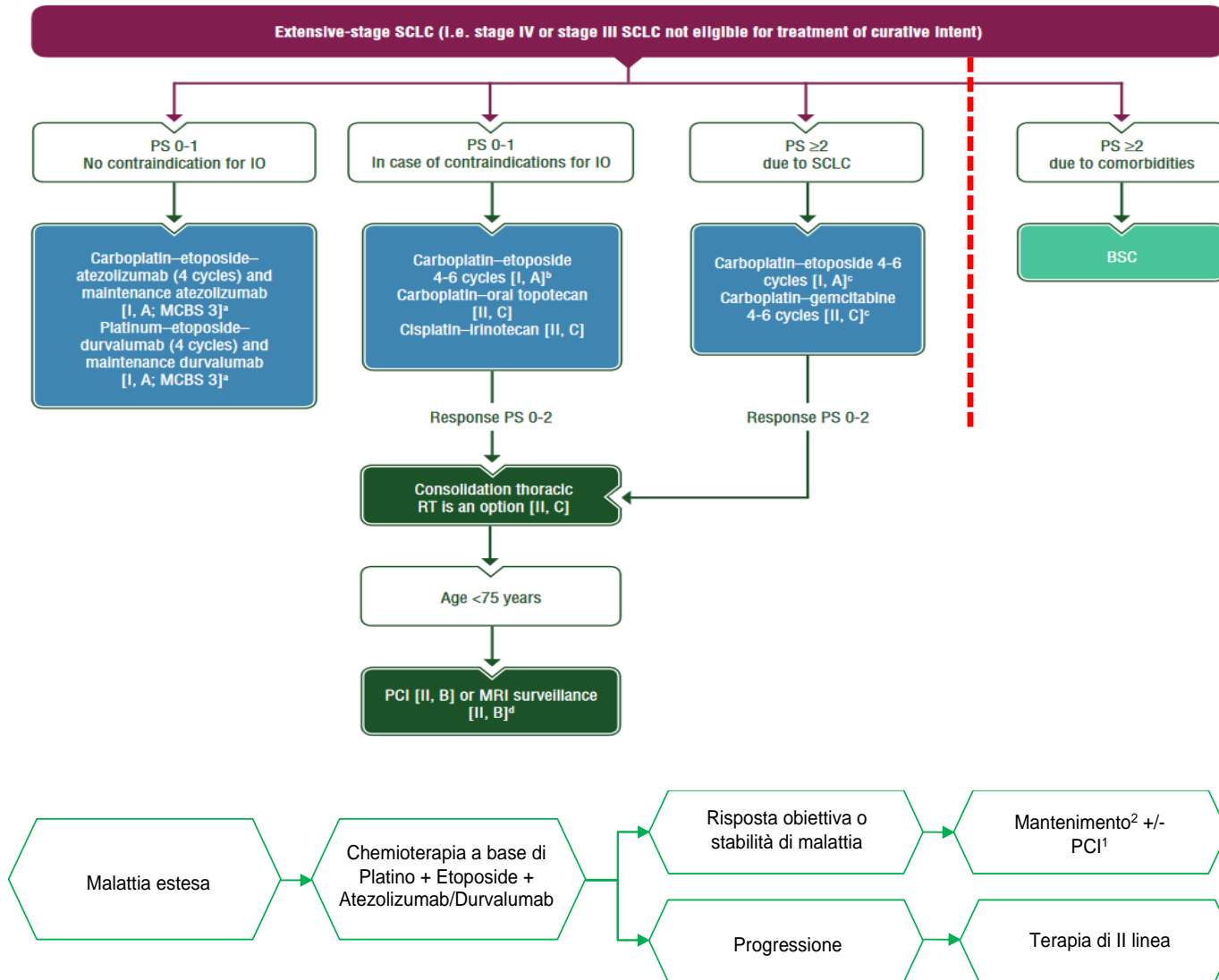
OS
HR 0.73
56 vs 33 m.



PFS
HR 0.73
17 vs 9 m.



ED-SCLC: ESMO, AIOM Guidelines & Evidence



- **CT-IO concomitante è SoC** (non ritardare avvio IO)
- **PS 2 da malattia vs co-morbidità?**

- **Consolidamento TRT post-IO** (30 Gy/10 fr): valutare in pazienti PS 0-1, in risposta, con residuo (basso carico sistemico di malattia)

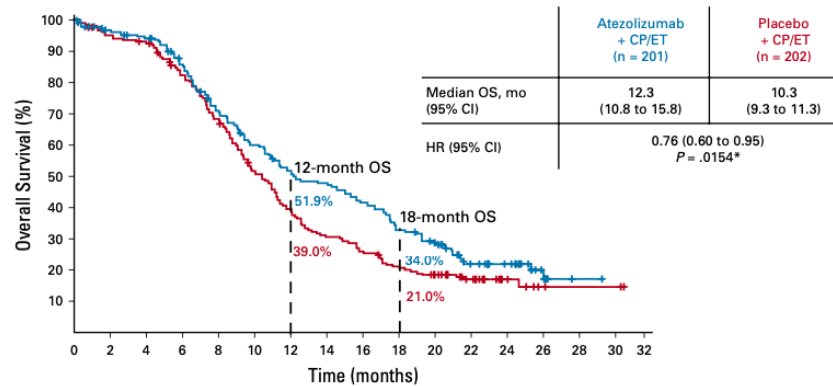


- **PCI** (con risparmio ippocampo) o **sorveglianza con RM** (se adeguato staging SNC)

1. PCI raccomandata in caso di risposta obiettiva alla chemioterapia di I linea
 2. Mantenimento con Atezolizumab/Durvalumab

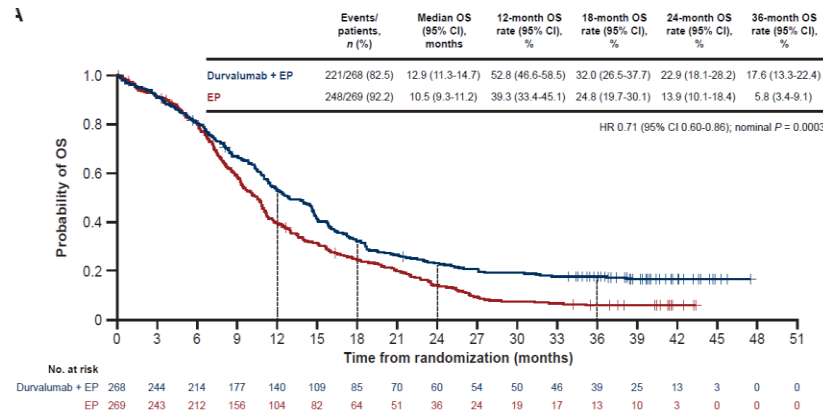
CT/IO in ES-SCLC: Consistent results across 5 trials

IMPOWER 133 Atezolizumab – Anti PD-L1



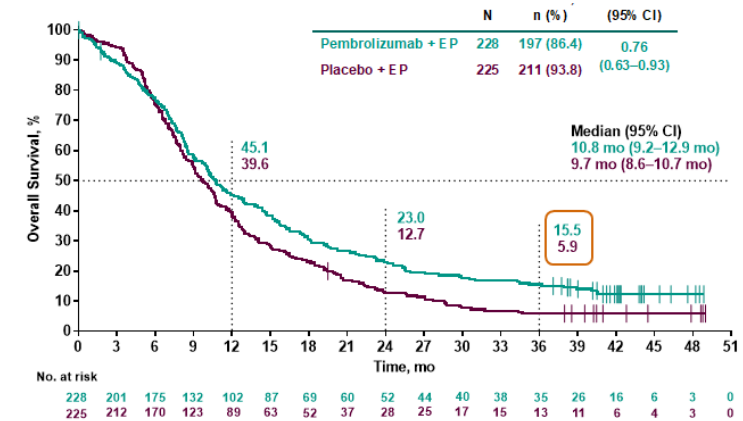
Liu S, et al. JCO 2021

CASPIAN Durvalumab – Anti PD-L1



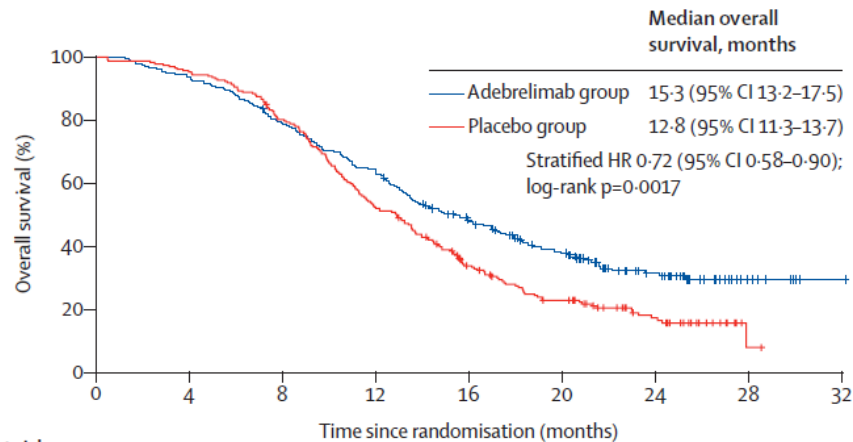
Paz-Ares L, et al. ESMO Open 2022

KEYNOTE 604 Pembrolizumab – Anti PD-1



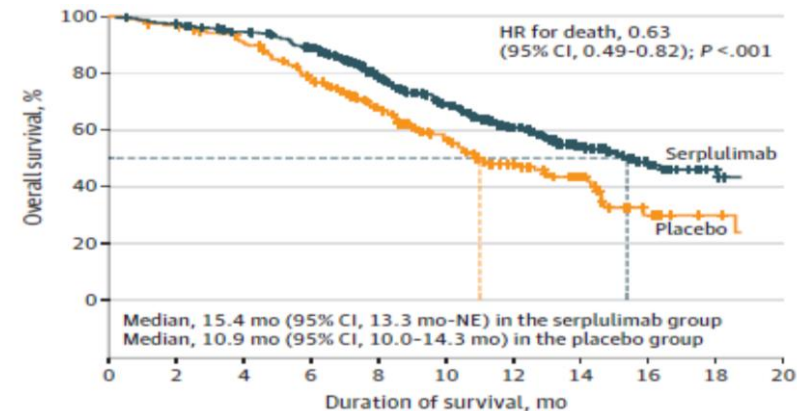
Rudin C, WCLC 2022

CAPSTONE 1 Adrelimab – Anti PD-L1



Wang J, et al. Lancet Oncol 2022

ASTRUM 005 Serplulimab - Anti-PD-1



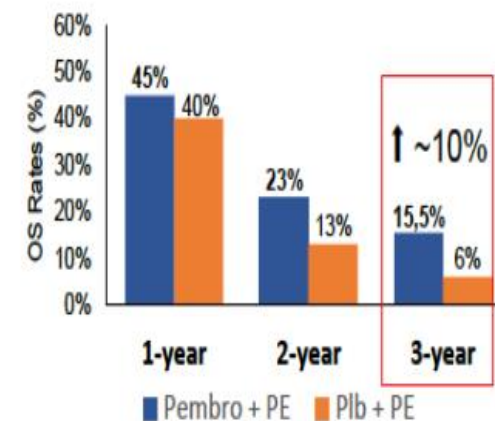
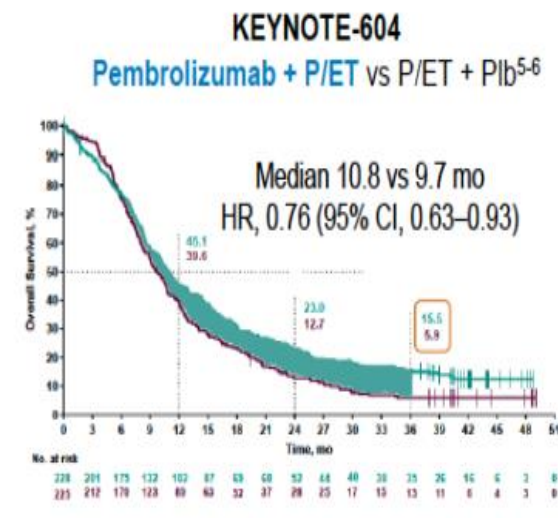
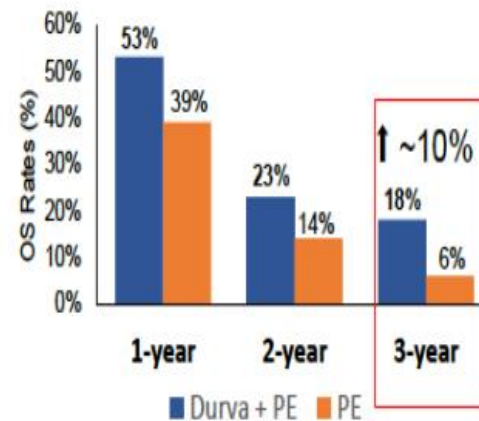
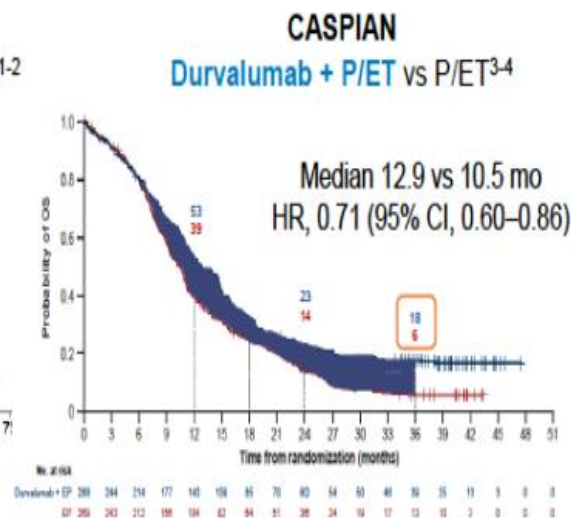
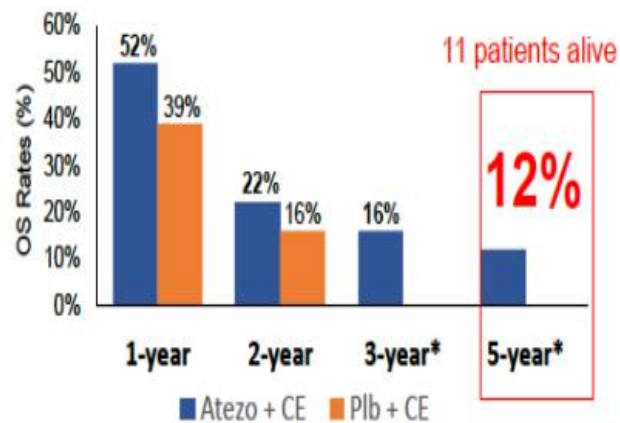
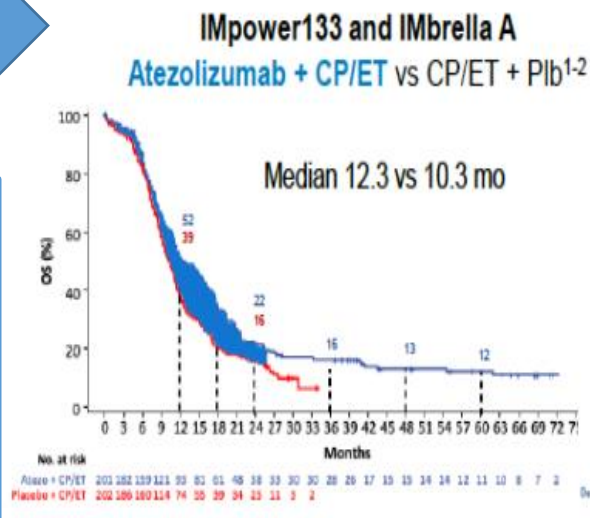
Cheng Y, JAMA 2022

Pivotal Trials – Long term outcome

OS Rates, %	A+CE (n=201)	P+CE (n=202)
Impower133 (CCOD: 24 Sep 2022)		
1 year	52	39
2 years	22	16
Impower133 and IMbrella A (CCOD: 16 Mar 2023)		
3 years	16	NE ^a
4 years	13	NE ^a
5 years	12	NE ^a

NE, not estimable. ^aOS rates were NE in the P+CE arm (no roll-over to IMbrella)

IMbrella:
Phase IV, single arm, ATEZO + CP/ET,
extension and long-term
observational study (NCT03148418)

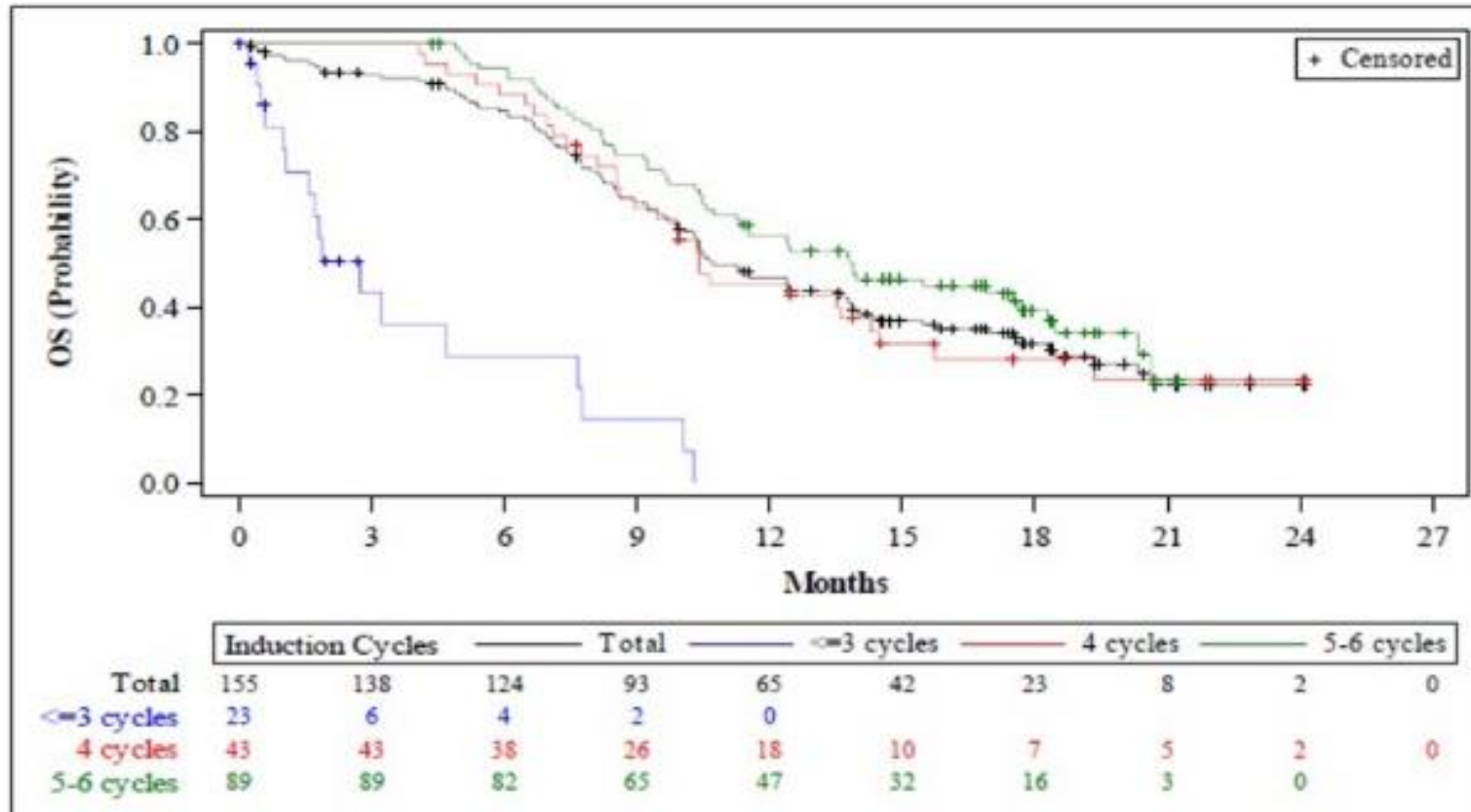


CP, carboplatin; ET, etoposide; P, platinum; Plb, placebo; NE, not estimable. * OS rates at 3-5 years were not estimable in the control arm as rollover to IMbrella A was not permitted.

1.- Horn L, et al. N Engl J Med 2018; 2.- Liu S, et al. OA01.04, WCLC 2023; 3.- Paz-Ares L, et al. Lancet 2019; 4.- Paz-Ares L, et al. ESMO Open 2022; 5.- Rudin CM, et al. J Clin Oncol 2020; 6.- Rudin CM, et al. WCLC 2022

CT-IO for SCLC-ED in real-life population: phase IIIb MAURIS as an exemple

- ✓ Role of CT/IT in cancer-related ECOG PS2
- ✓ Role of prolonged CT (6 versus 4 cycles)
- ✓ Role of thoracic RT after response to CT/IT
- ✓ Role of PCI in responding patients (irrespective of front-line CT or CT/IT)



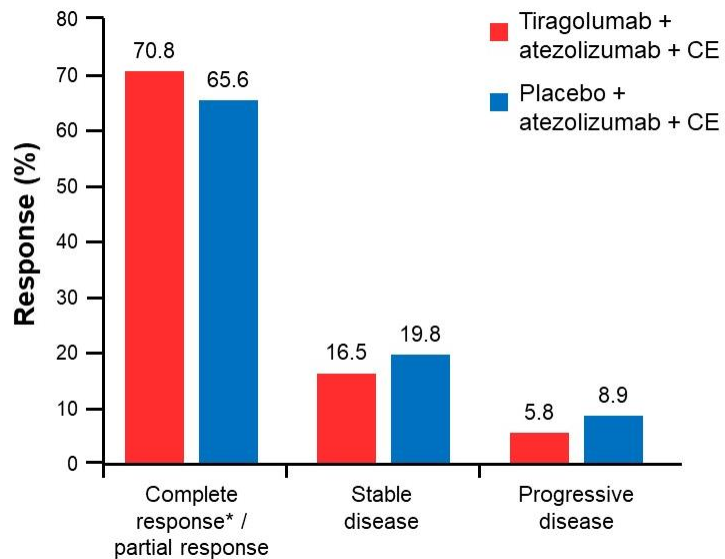
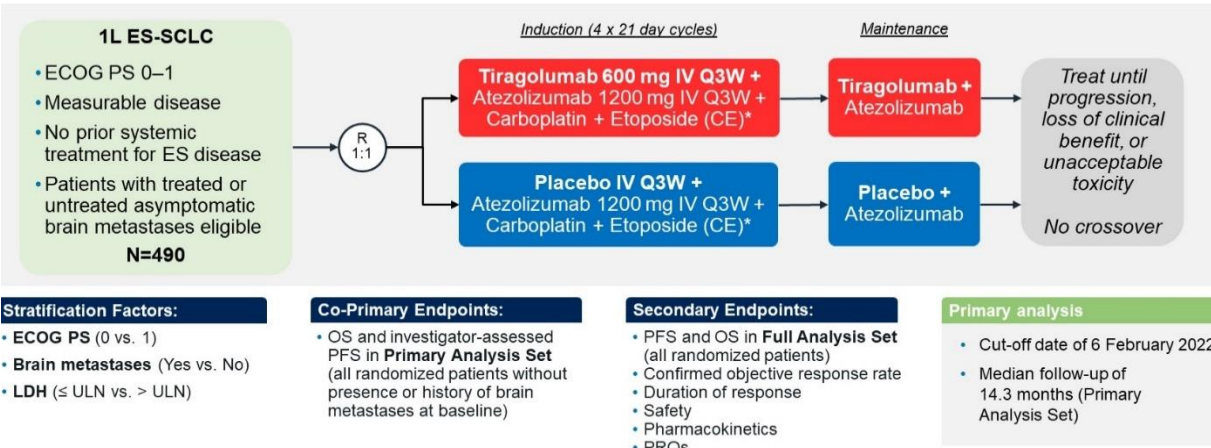
- **Efficacy Results**
- **Overall survival (OS)**
The median OS in the overall ITT population was **10.7 months** (95% CI, 9.9 to 13.7 months.) Figure 1 shows the results of OS by subgroup (number of cycles of induction) The median OS was longer in patients who performed **5-6 induction cycles (13.8 months, 95% CI, 10.7 to 18.2 months)** than in those who performed 4 cycles (10.4 months, 95% CI, 8.6 to 14.2 months) or ≤ 3 cycles (2.7 months, 95% CI, 1.0 to 7.6 months.)

mOS and mPFS were 10.7 and 5.5 months, respectively

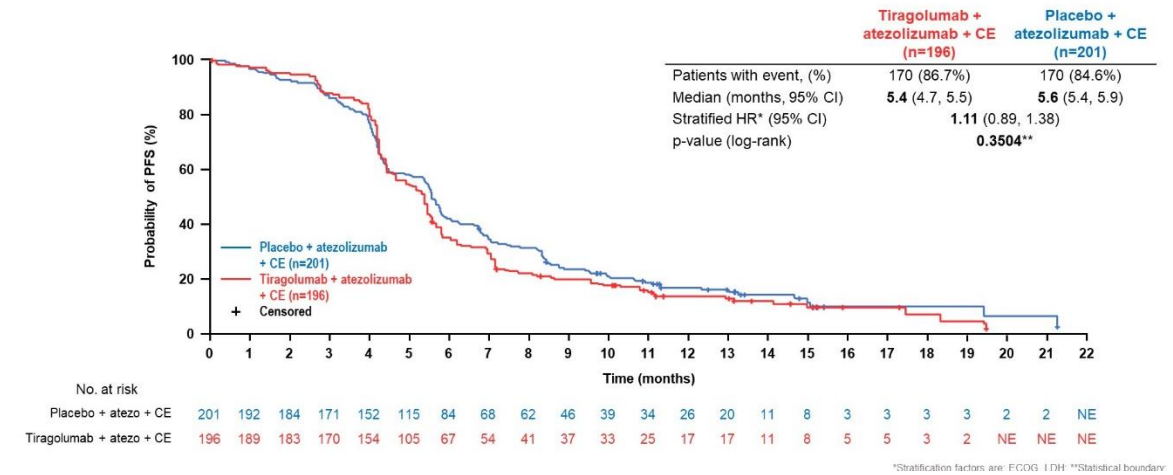
No benefit by adding anti-TIGIT to standard CT-IO

Role of PVR in SCLC

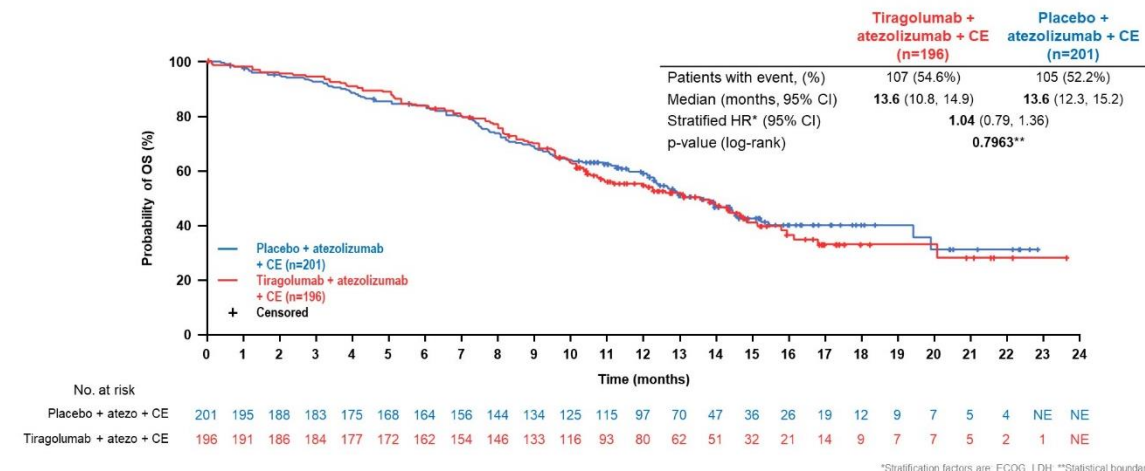
SKYSCRAPER-02



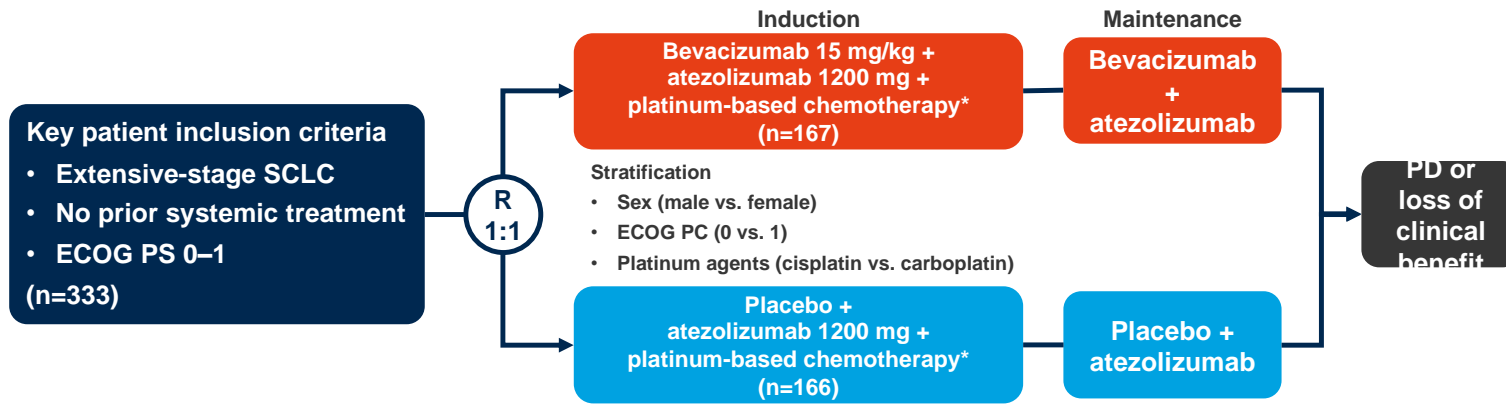
PFS: Primary Analysis Set



Interim OS: Primary Analysis Set



No benefit by adding anti-VEGF to standard CT-IO



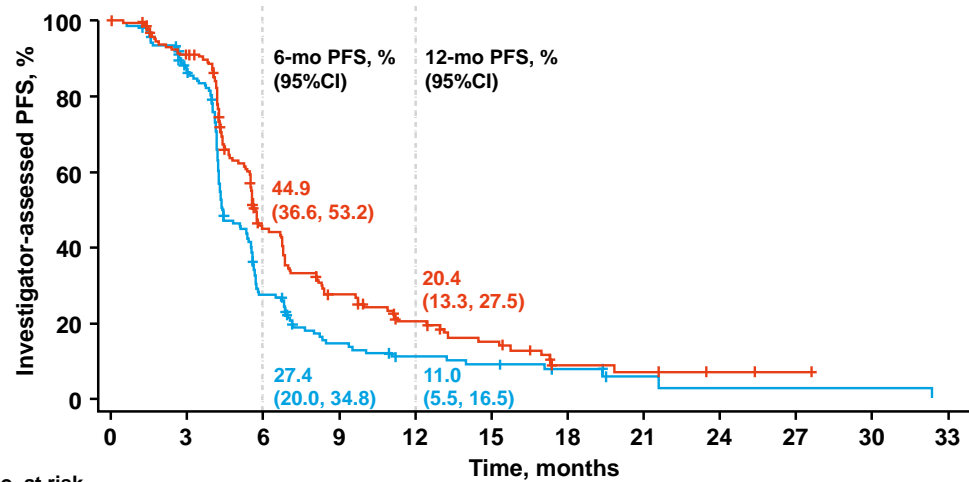
Primary endpoint

- PFS (investigator-assessed)

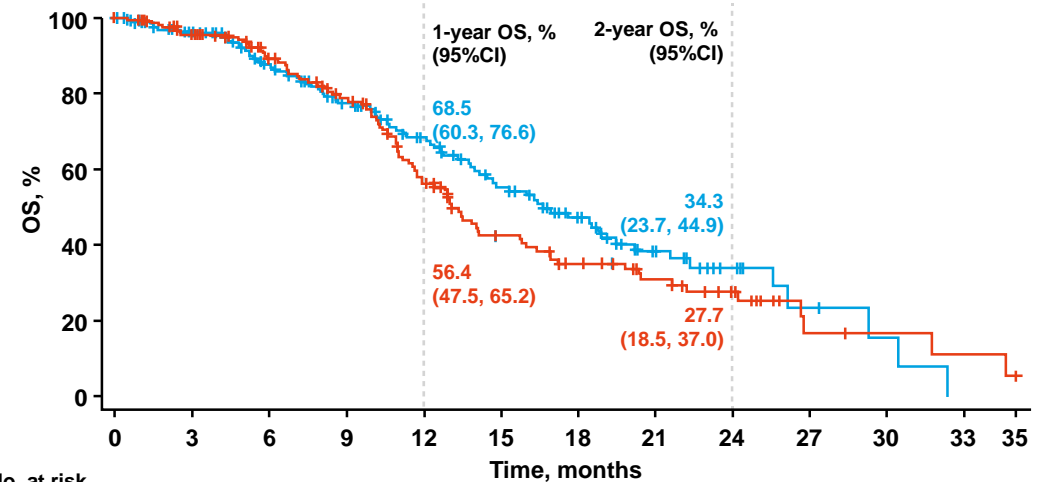
Secondary endpoints

- OS, ORR, DoR, safety

Progression-free survival



Overall survival

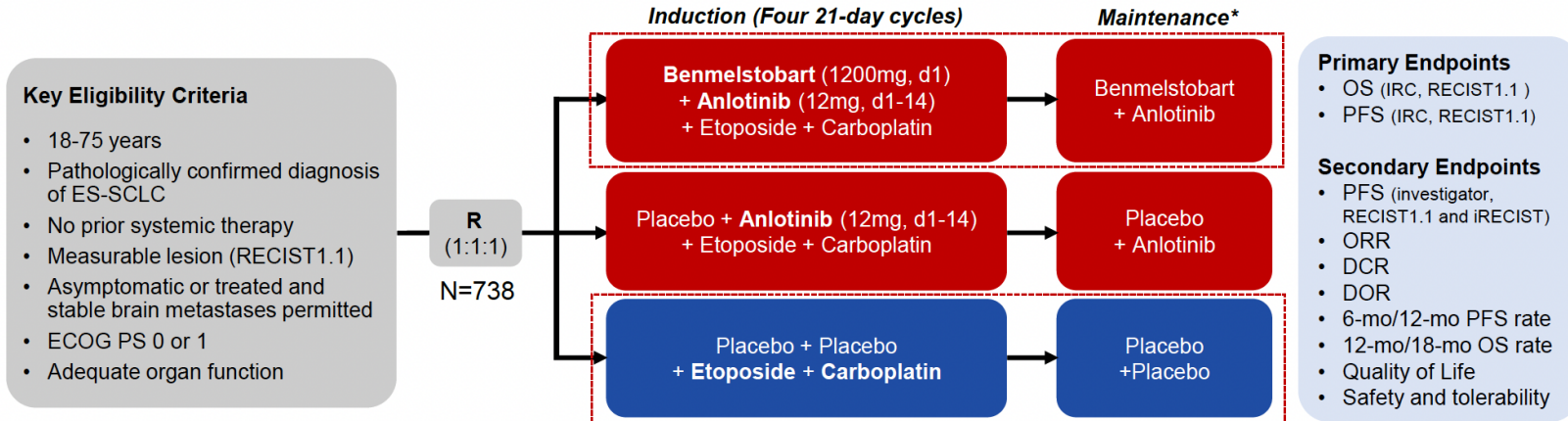


No. at risk		0	3	6	9	12	15	18	21	24	27	30	33
—	Bev + ACE	167	136	57	33	21	14	5	4	2	1		
—	Placebo + ACE	166	128	37	17	11	9	5	2	1	1	1	1

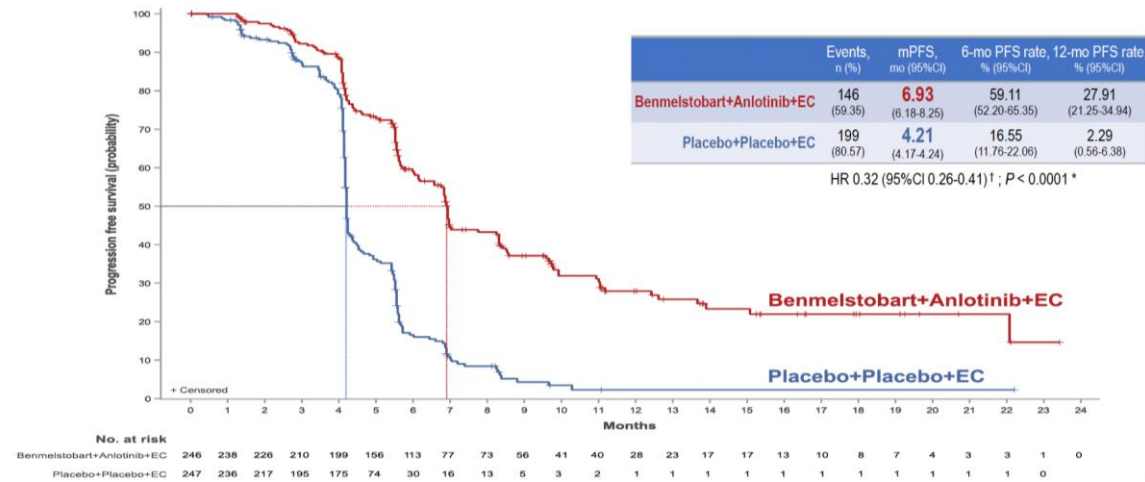
No. at risk		0	3	6	9	12	15	18	21	24	27	30	33	35
—	Bev + ACE	167	147	118	95	64	41	30	21	13	4	3	2	1
—	Placebo + ACE	166	146	120	91	71	52	37	19	10	4	2		



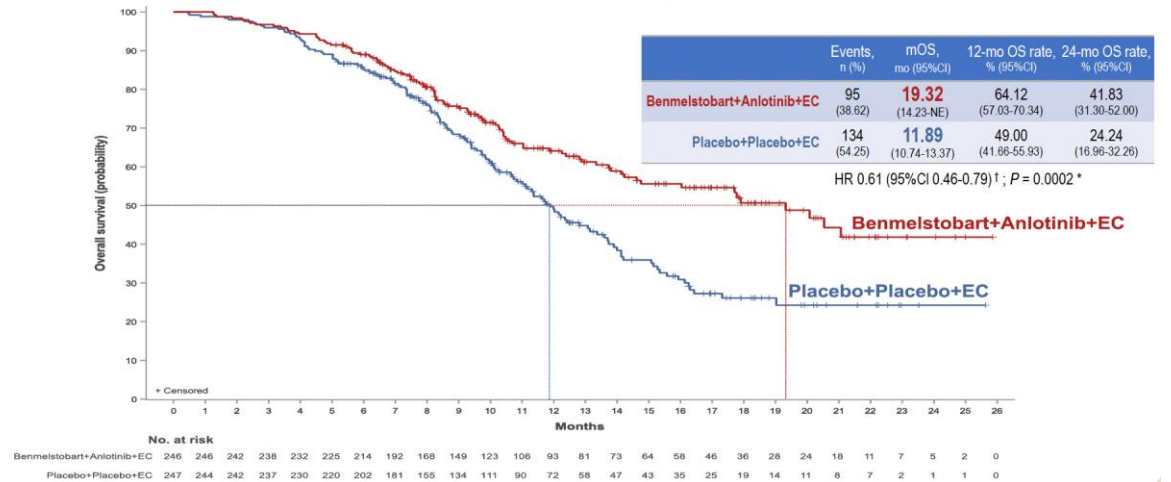
Benmelstobart (PD-L1 inhibitor) + Anlotinib (anti-VEGF) + CT vs CT: A Randomized, Double-blind, Phase III Trial (ETER701)



Primary Endpoint: PFS (ITT Population)



Primary Endpoint: OS (ITT Population)



Potential strategies to improve disease control in 1[^] line: maintenance trials

Phase 1: Maintenance TARLATAMAB + IO

Phase 2: Maintenance PARPi + IO

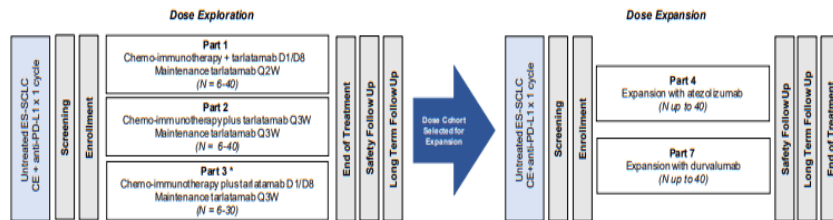
Phase 3: Maintenance LURBINECTEDIN + IO

1.2

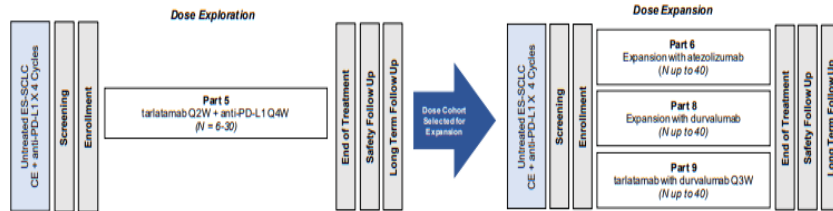
Study Schema

Figure 1-1. Overall Study Schema

Concomitant Chemo-Immunotherapy and Maintenance: Carboplatin, Etoposide, anti-PD-L1, and Tariatamab



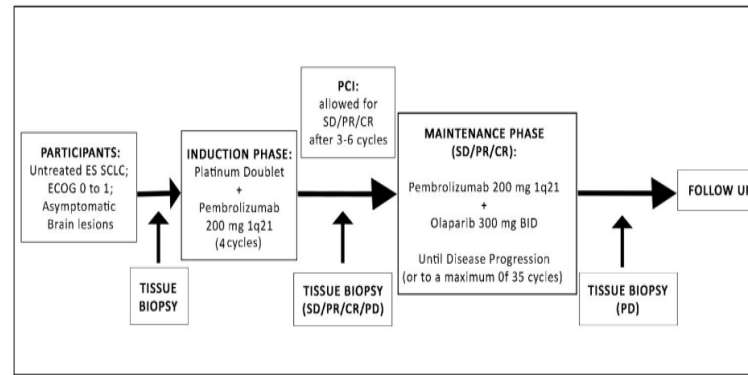
Maintenance Only: anti-PD-L1 and Tariatamab



SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA
Istituto Romagnolo per lo Studio dei Tumori "Dino Amadori"
Istituto di Ricovero e Cura a Carattere Scientifico

ISTITUTO ROMAGNOLO PER LO STUDIO DEI TUMORI DINO AMADORI
THOR

STUDY SCHEMA



Primary Endpoints: PFS

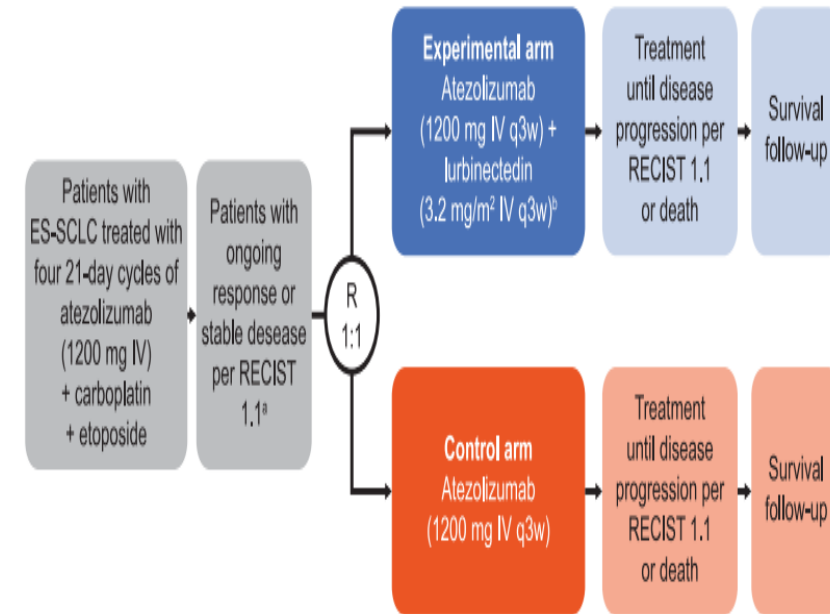
Secondary Endpoints: ORR, OS

Safety

Biological features

Induction Phase

Maintenance Phase



ES-SCLC, extensive stage small-cell lung cancer; q3w, once every 3 weeks; R, randomized; RECIST 1.1, Response Evaluation Criteria In Solid Tumors version 1.1.

^aFollowing the induction therapy but before randomization, participants may receive prophylactic cranial irradiation at the investigator's discretion per local standard.

^bGranulocyte colony-stimulating factor as primary prophylaxis is mandatory for participants assigned to the lurbinectedin-containing arm.

Tarlatamab + (ATEZO/DURVA) as 1st Line Maintenance after for ES-SCLC: DeLLphi-303 Phase 1b Study

Key patient inclusion criteria

- Extensive-stage SCLC
 - Any DLL3 status
 - ECOG PS 0-1
- (n=88)

Primary endpoints

- Safety

Platinum-etoposide + PD-L1 inhibitor (4-6 cycles)

Non-PD

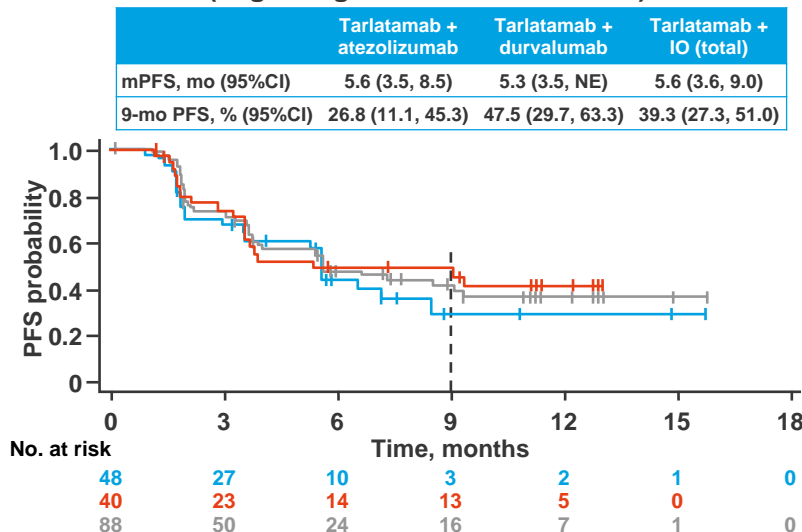
Tarlatamab 10 mg IV q2w + atezolizumab 1680 mg IV q4w (n=48)

Tarlatamab 10 mg IV q2w + durvalumab 1500 mg IV q4w (n=40)

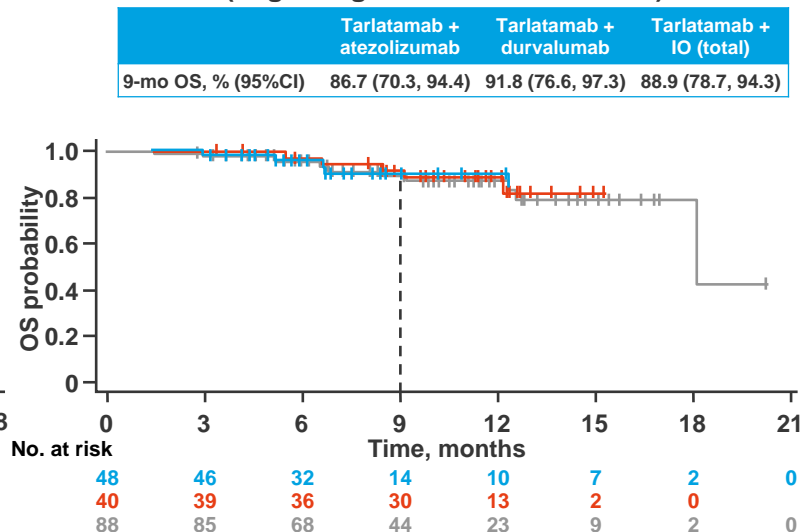
Secondary endpoints

- PFS, OS, DCR

Progression-free survival (beginning from 1L maintenance)



Overall survival (beginning from 1L maintenance)



— Tarlatamab + atezolizumab (mFU 7.4 mo (1.4-20.4))

— Tarlatamab + durvalumab (mFU 11.5 (2.8, 15.5))

— Tarlatamab + IO (total)

TRAEs, %	TARLA + ATEZO (n=48)	TARLA + DURVA (n=40)
Any	98	96
Grade ≥3		
CRS	2	0
Fatigue	2	0
Appetite decrease	2	0
Neutropenia	10	8
Lymphopenia	6	8

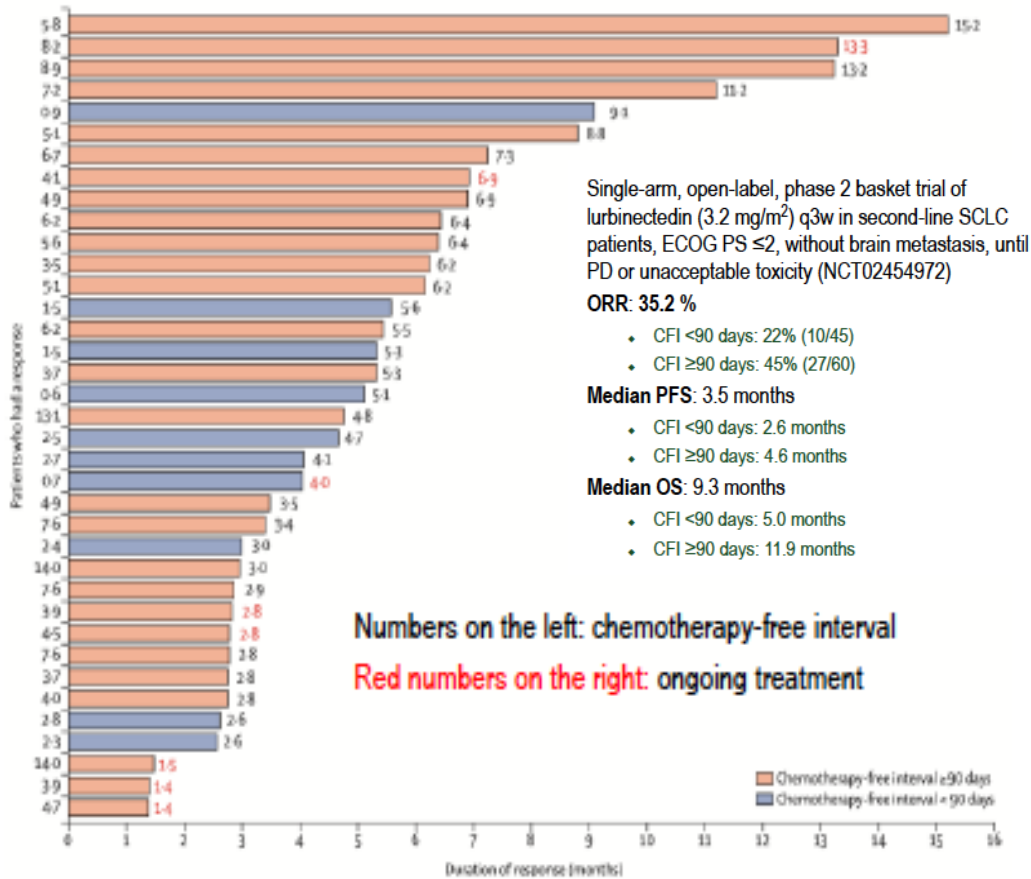
SCLC-ED relapsed: second lines scenario

**Topotecan
ORR 2-11%
patinum-resistant
SCLC-ED**

Fase	Farmaco	ORR	PFS	OS	Pubblicazione
2	CAV	18%	<3 mesi	-	Von Pawel et al. 1999
2	Topotecano ev	24%	3.1 mesi	-	Von Pawel et al. 1999
2	Topotecano po	18%	<3 mesi	-	EckardT et al. 2007
3	Topotecano ev	20%	4.3 mesi	8.6 mesi	Blackall et al. 2021
3	Topotecan ev or CAV	30%	4.0 mesi	7.6 mesi	Aix et al. 2023
2	Lurbinectidina	34%	3.9 mesi	9.3 mesi	Trigo et al. 2020
3	Lurbinectedina + Doxorubicina	32%	4.0 mesi	8.6 mesi	Aix et al. 2023
2	Temozolamide + Velaparib	39%	3.8 mesi	8.2 mesi	Pietanza et al. 2018
2	Temozolamide + Olaparib	41%	4.2 mesi	8.5 mesi	Farago et al. 2019
2	Temozolamide + Talazoparib	39%	4.5 mesi	11.9 mesi	Goldman et al. 2022
1	Tarlatamb (dose escalation)	23%	3.7 mesi	13.2 mesi	Paz-Ares et al. 2023
2	Tarlatamb 10 mg/100 mg	40/32%	4.9/3.9 mesi	14.3/NE mesi	Paz-Ares et al. 2023

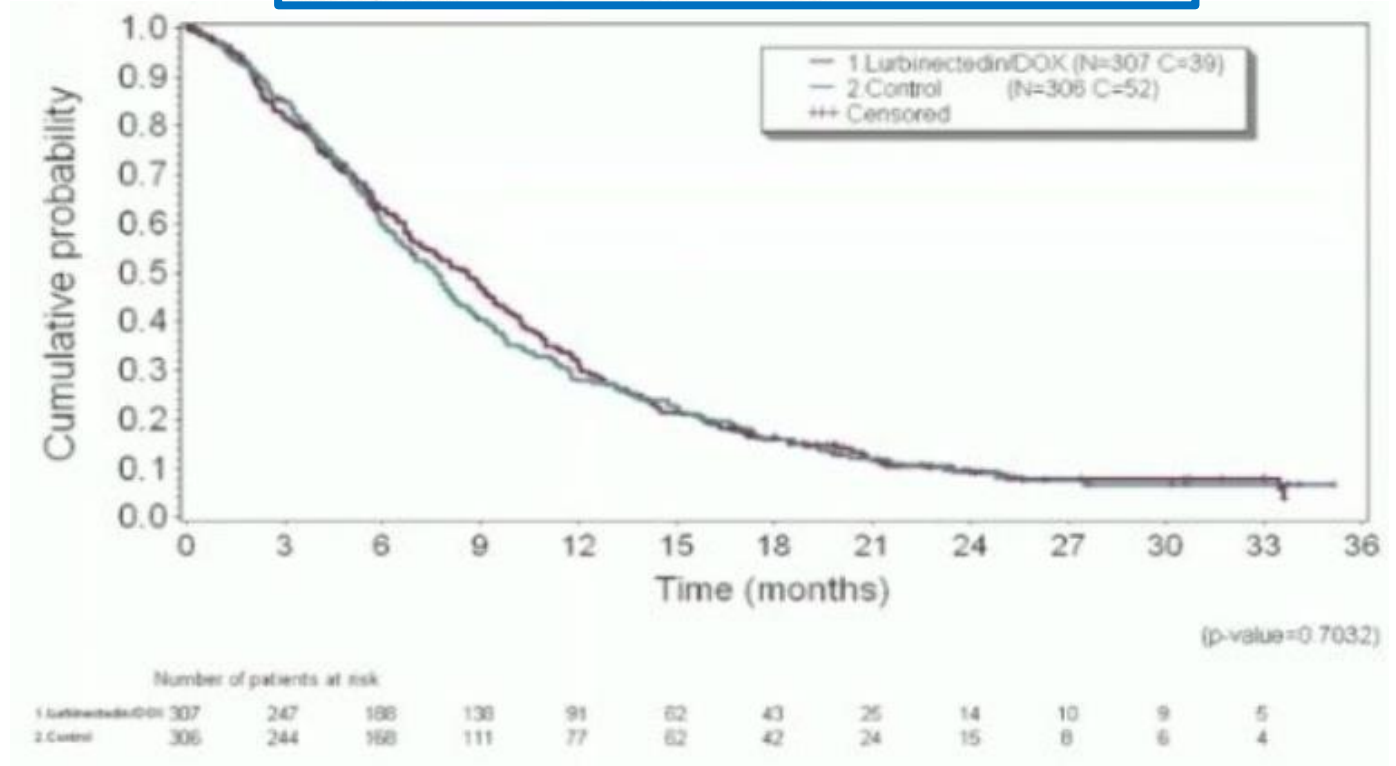
Relapsed SCLC-ED: Lurbinectidin (single agent or in combination)

LURBI (mono)



LURBI + DOXO

	Lurbinectidin+DOX (N=307)	Control (N=306)	Parameter	p-value
Events, n (%)	268 (87.3)	254 (83.0)		
Censored, n (%)	39 (12.7)	52 (17.0)		
Median OS (95% CI), months	8.6 (7.1, 9.4)	7.6 (6.6, 8.2)	HR : 0.967 (0.815, 1.148)	0.7032
Mean OS, months	10.6	9.9		



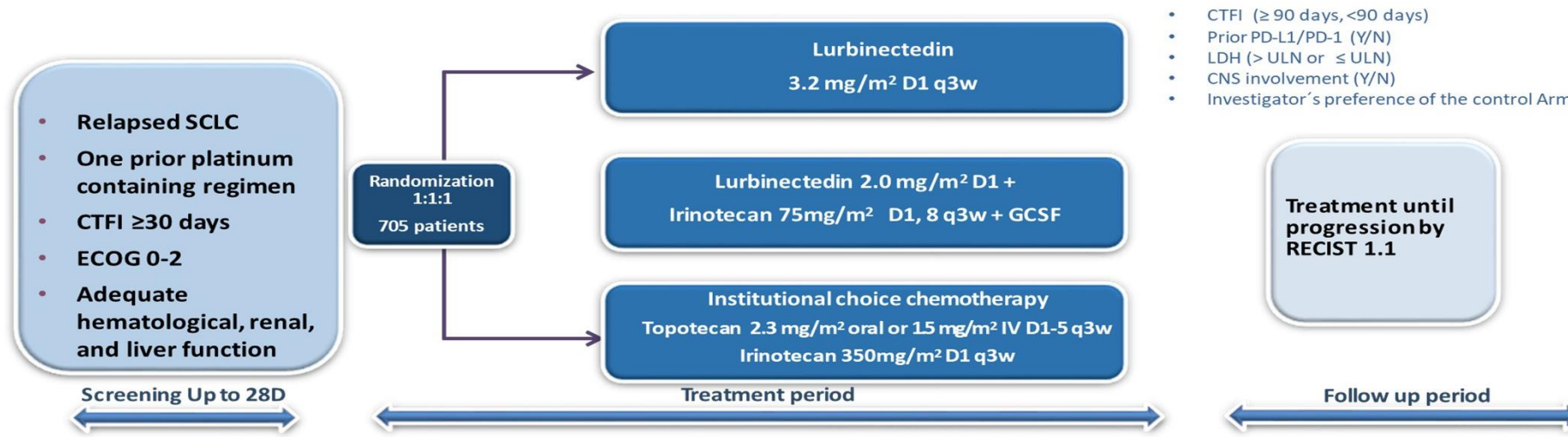
Trigo et al. Lancet Oncol 2020
 Paz-Ares L et al. WCLC 2021
 Aix et al. Lancet Resp Med 2023

Relapsed SCLC-ED: Lurbinectidin +/- Irinotecan

	All pts (n=101)	CTFI<90 d (n=52)	CTFI≥90 d (n=49)	CTFI>30 d (n=74)
ORR by IRC, % (95% CI)	43.6 (33.7-53.8)	25.0 (14.0-38.9)	63.3 (48.3-76.6)	52.7 (40.7-64.4)
DoR by IRC (mo), median (95% CI)	7.1 (4.6-9.4)	6.9 (3.9-7.6)	8.2 (4.4-12.4)	7.6 (4.6-9.7)
PFS by IRC (mo), median (95% CI)	4.7 (3.8-5.7)	3.3 (2.6-5.0)	5.7 (4.2-8.3)	5.0 (4.1-7.2)
OS (mo), median (95% CI)	9.6 (7.8-13.4)	7.5 (3.5-8.8)	14.0 (10.1-21.4)	12.7 (9.1-14.1)
OS rate at 12 mo, % (95% CI)	43.4 (33.4-53.4)	25.3 (13.2-37.5)	63.1 (49.1-77.2)	52.0 (40.3-63.8)

CI, confidence interval; CTFI, chemotherapy-free interval; d, days; DoR, duration of response; mo, months; ORR, overall response rate; OS, overall survival; PFS, progression free survival.

Phase 2
LURBI+IRI
«expansion cohort»



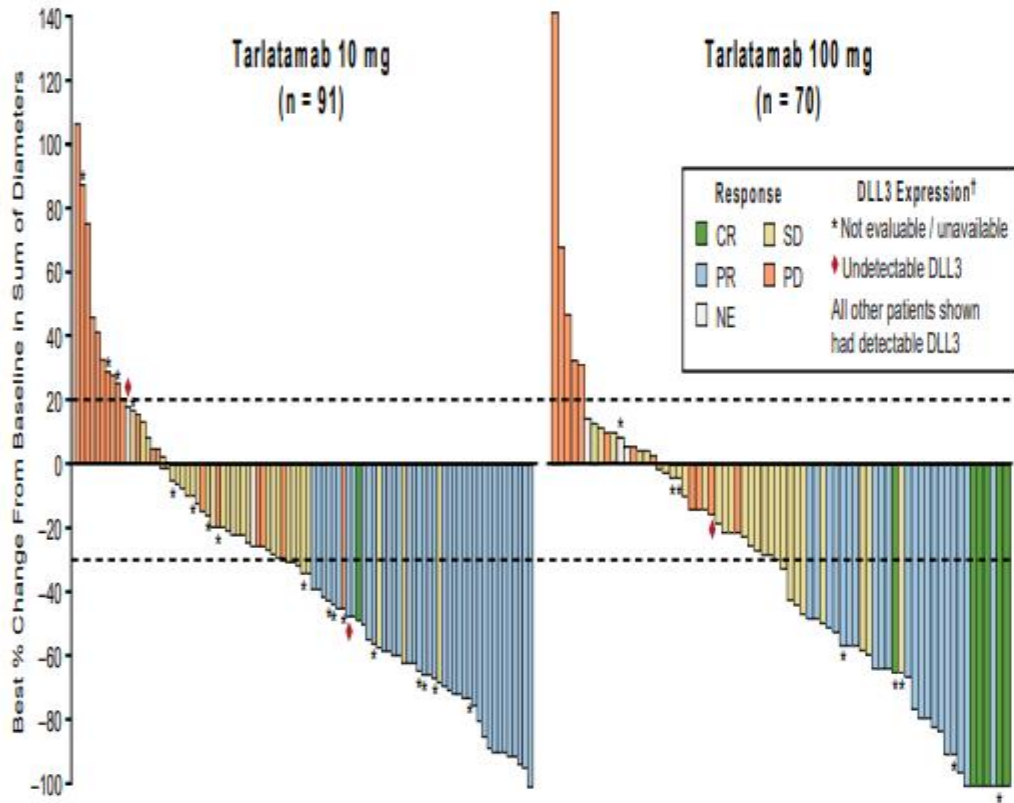
Endpoints

- Primary Endpoint:** Overall Survival
- Secondary:** PFS, ORR, DoR, Safety, PRO

Phase 3
LURBI+/-IRI vs TOPO
LAGOON Trial
ongoing

Phase 2 of DLL3-Targeted T-cell Engager Tarlatamab in SCLC

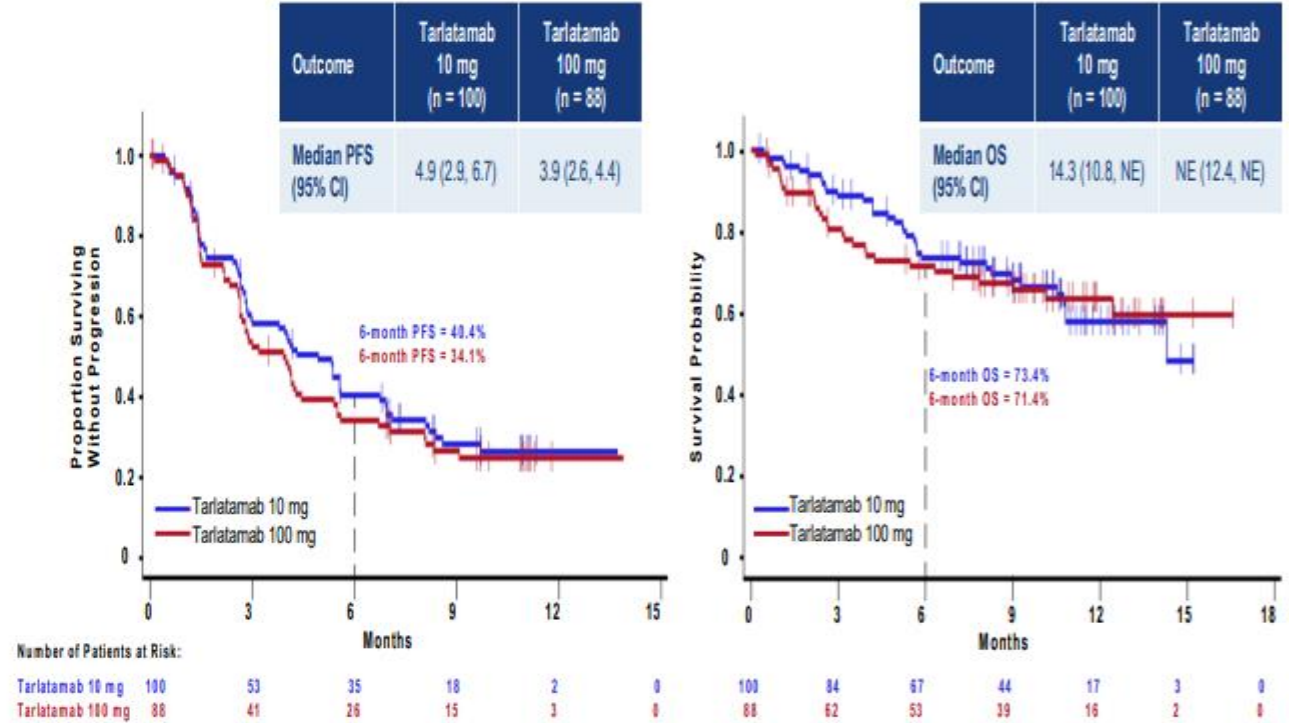
DeLLphi-301 Efficacy Data



ORR 40 % versus ORR 32%

PFS and OS

Among patients with an ORR, DoR was at least 6 months in 59%



No. of previous lines of therapy — no. (%)	Tarlatamab 10 mg	Tarlatamab 100 mg	Control
1	2 (2)	0	2 (2)
2	65 (65)	22 (65)	48 (55)
3	19 (19)	6 (18)	22 (25)
>3	14 (14)	6 (18)	16 (18)
Median no. of previous lines of therapy (range)	2.0 (1–6)	2.0 (2–6)	2.0 (1–8)

Phase 2 of DLL3-Targeted T-cell Engager Tarlatamab in SCLC

DeLLphi-301 SAFETY DATA

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)

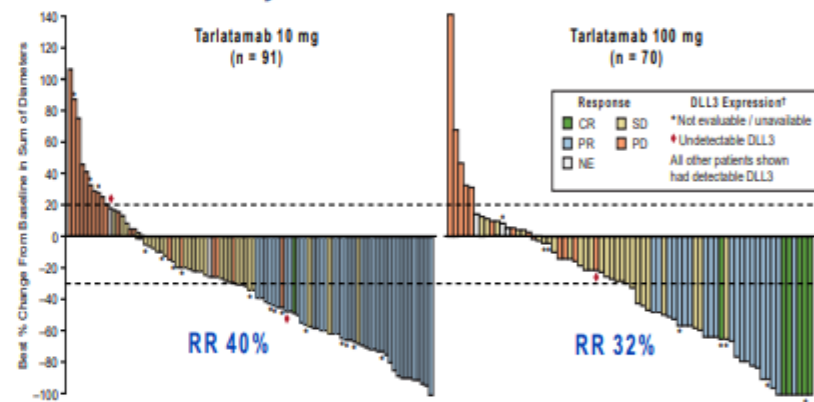
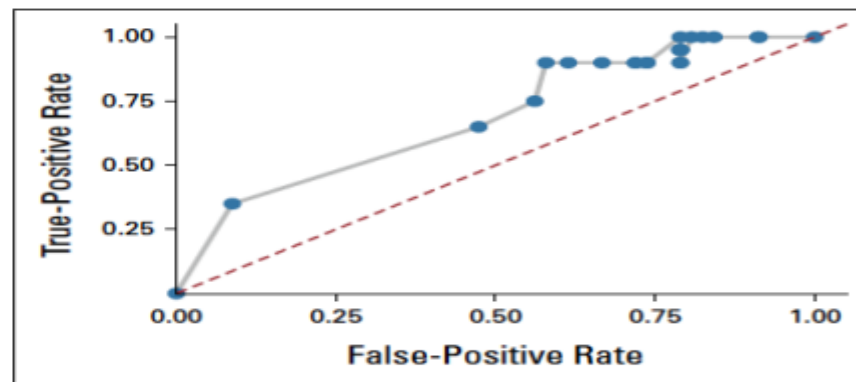
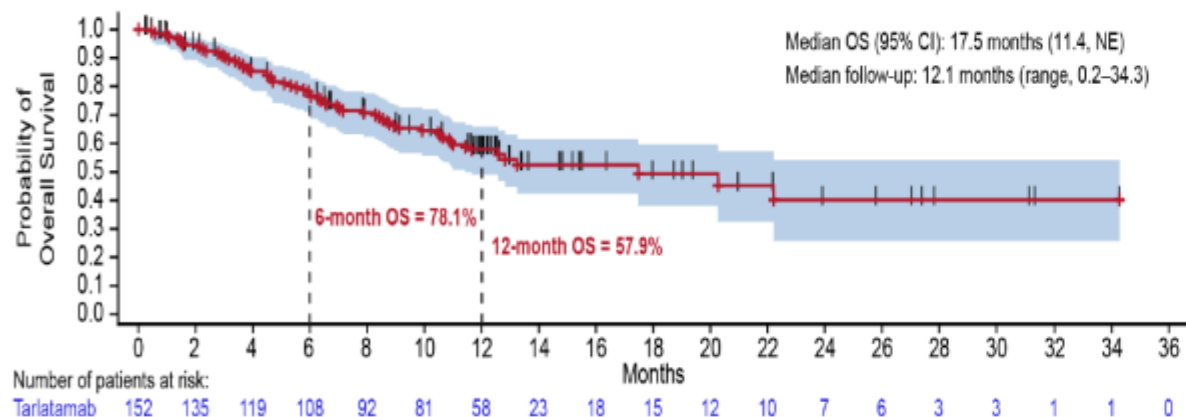
- Tarlatamab demonstrated a favorable safety profile, with a low rate of discontinuations due to treatment related adverse events (TRAEs)
- Shorter inpatient monitoring (Part 3) did not alter the safety profile

*The safety analysis set includes Part 1, Part 2, and Part 3 who received at least 1 dose of tarlatamab (N = 220). [†]Fatal TRAE was respiratory failure. CRS, cytokine release syndrome; TEAE, treatment emergent adverse event.

Who is benefitting and how much?

- No clear biomarkers of benefit as yet
- DLL3 expression is not a major predictor
- Not all benefit is driven by response:

carry-over effect

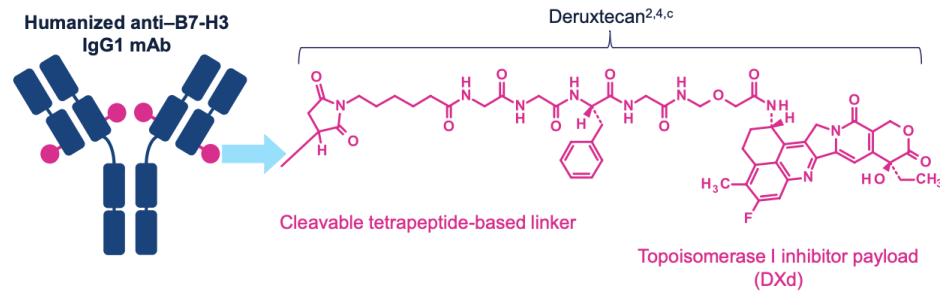


Responses were observed regardless of DLL3 expression, as well as in patients without evaluable tumor tissue

Ifinatamab Deruxtecan (I-DXd) in ES-SCLC: Interim Analysis (IDeate-Lung01)

I-DXd is a B7-H3 (CD276)-directed ADC with 3 components¹⁻⁴:

- A humanized anti-B7-H3 IgG1 mAb
- A tetrapeptide-based cleavable linker that covalently bonds antibody and payload
- A topoisomerase I inhibitor payload (an exatecan derivative, DXd)



Key patient inclusion criteria

- Extensive-stage SCLC
 - ≥ 1 prior line of platinum-based chemotherapy and ≤ 3 prior lines of systemic therapy
 - Progression on or after most recent systemic therapy
 - Asymptomatic brain metastases permitted
 - ECOG PS 0-1
- (n=88)

Primary endpoint

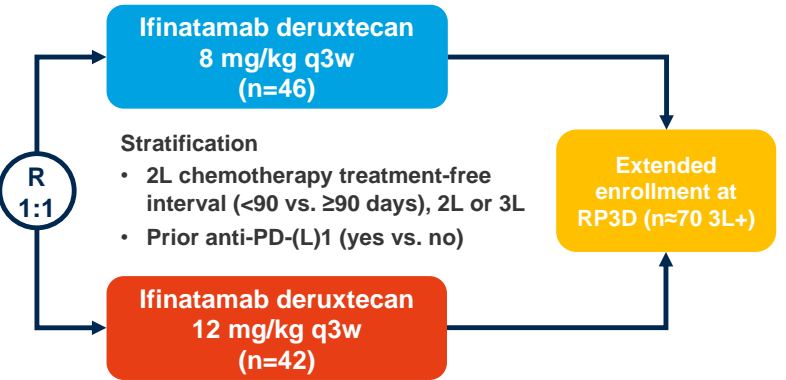
- ORR (BICR)

Secondary endpoints

- DoR, PFS, OS, DCR, TTR, PK, safety

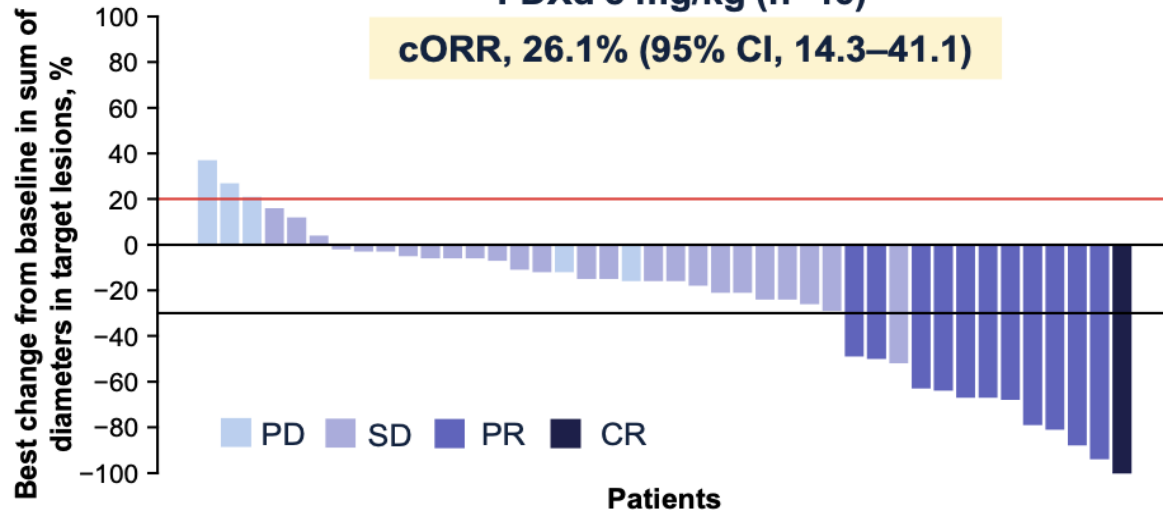
Exploratory endpoint

- Intracranial ORR



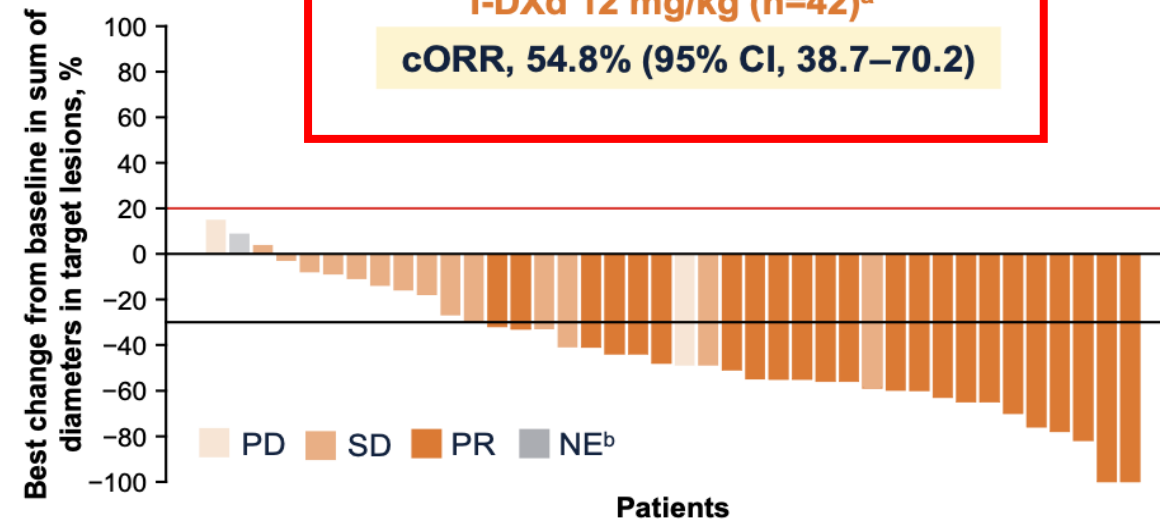
I-DXd 8 mg/kg (n=46)^a

cORR, 26.1% (95% CI, 14.3–41.1)

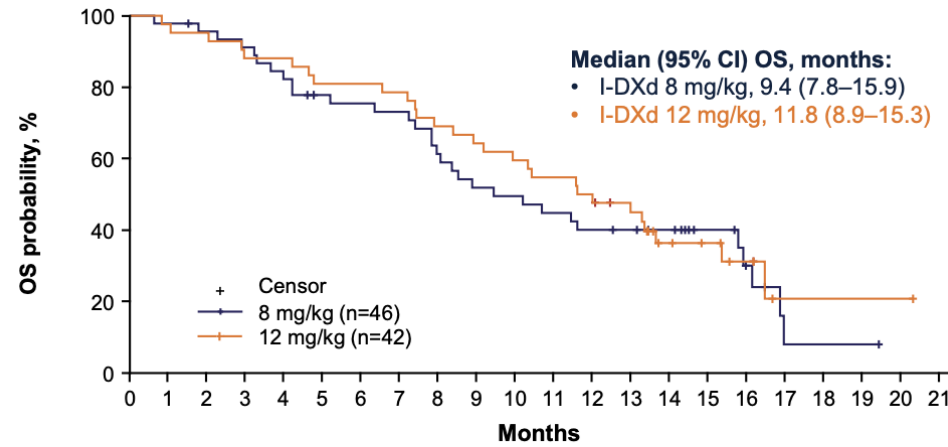
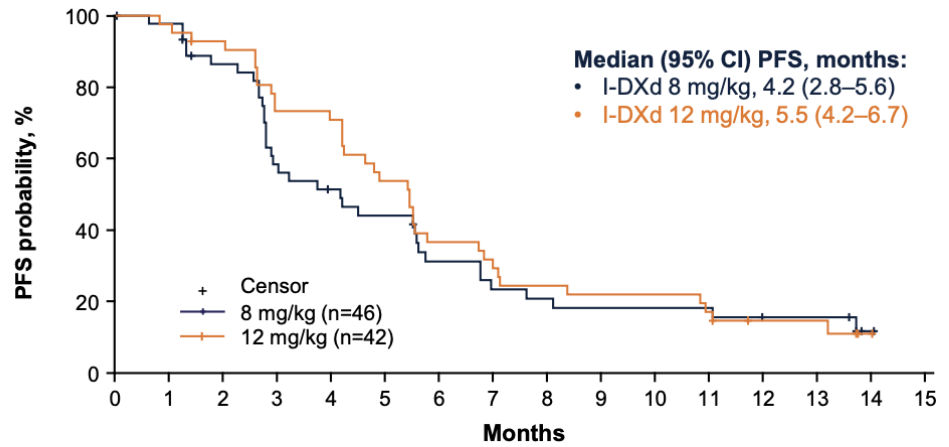
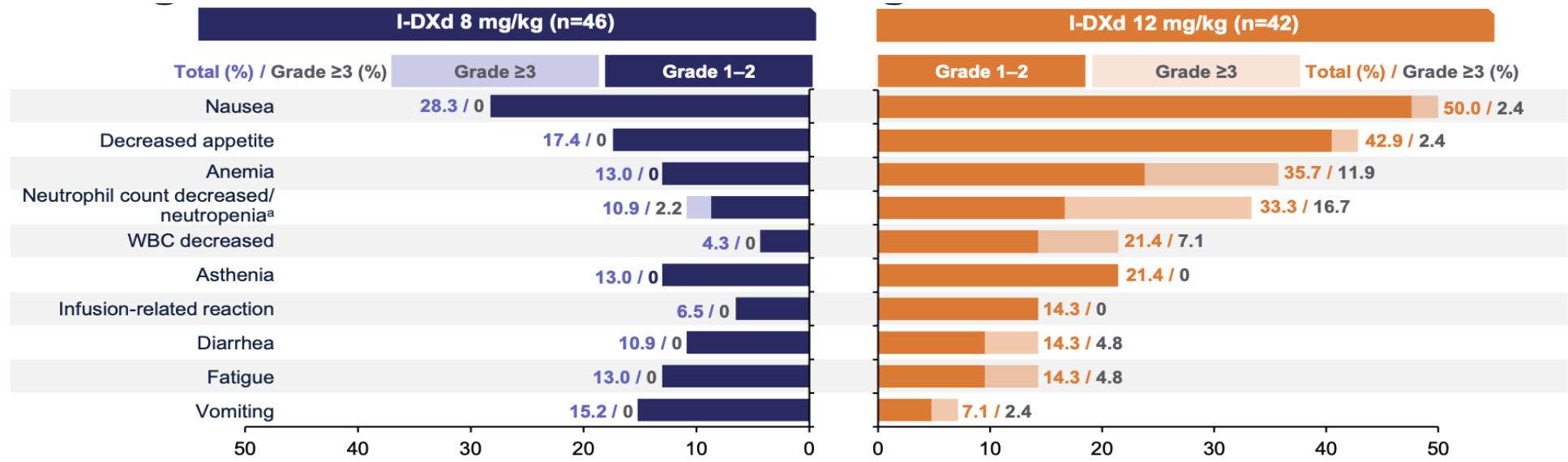


I-DXd 12 mg/kg (n=42)^a

cORR, 54.8% (95% CI, 38.7–70.2)

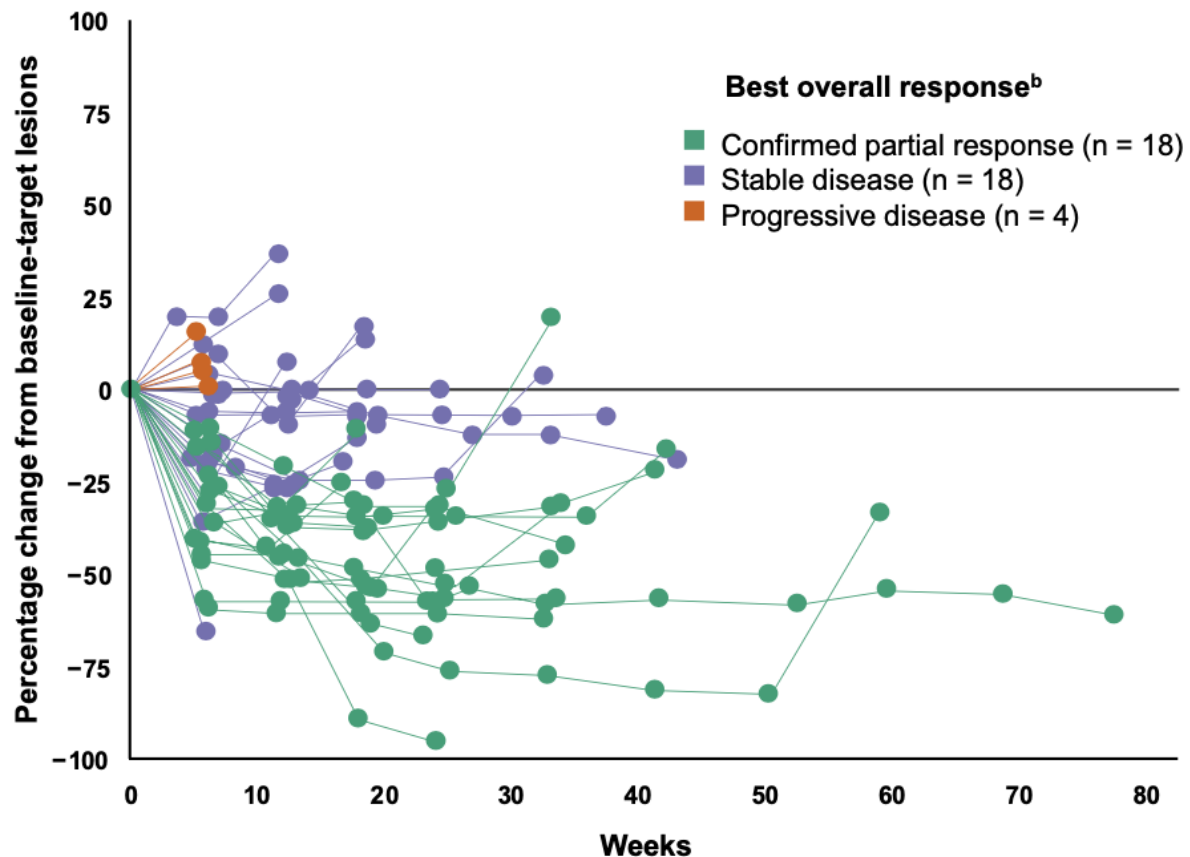


Ifinatumab Deruxtecan (I-DXd) in ES-SCLC: Interim Analysis (IDeate-Lung01)

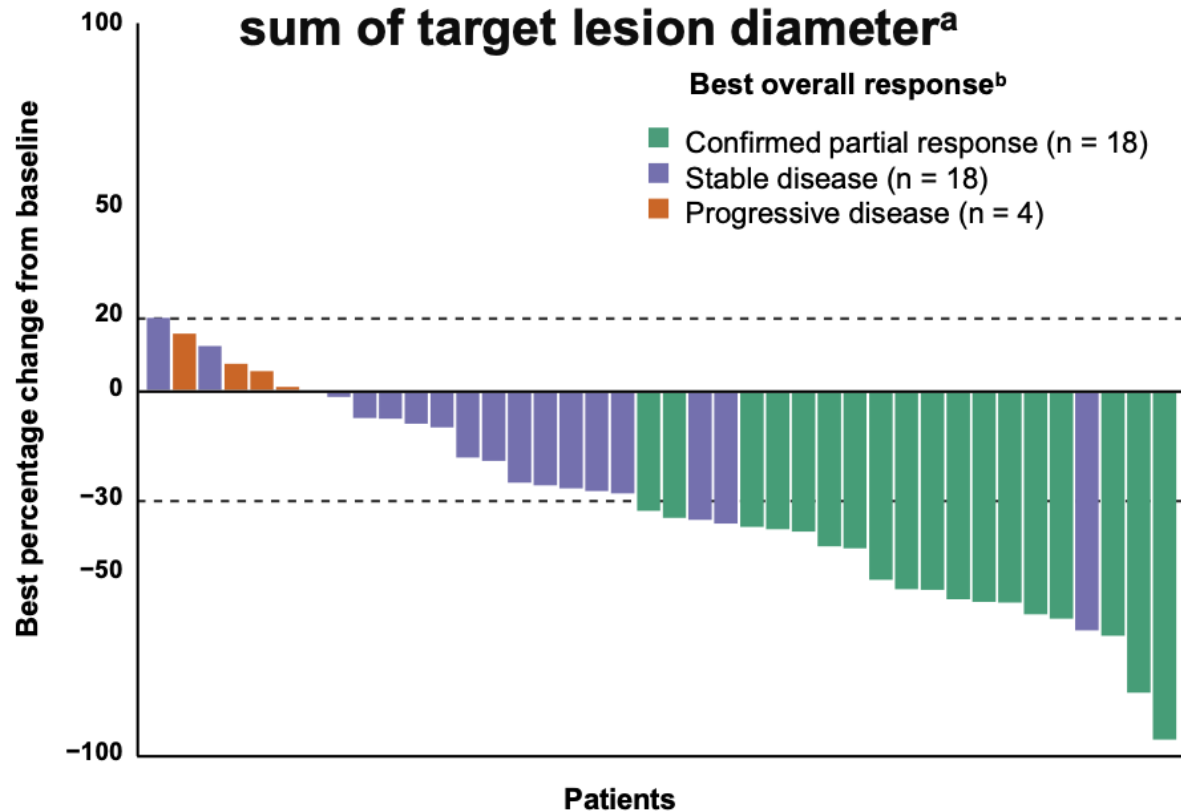


Sacituzumab Govitecan (TROP2 Targeted ADC) as II line in ES-SCLC

Tumor response over time^a

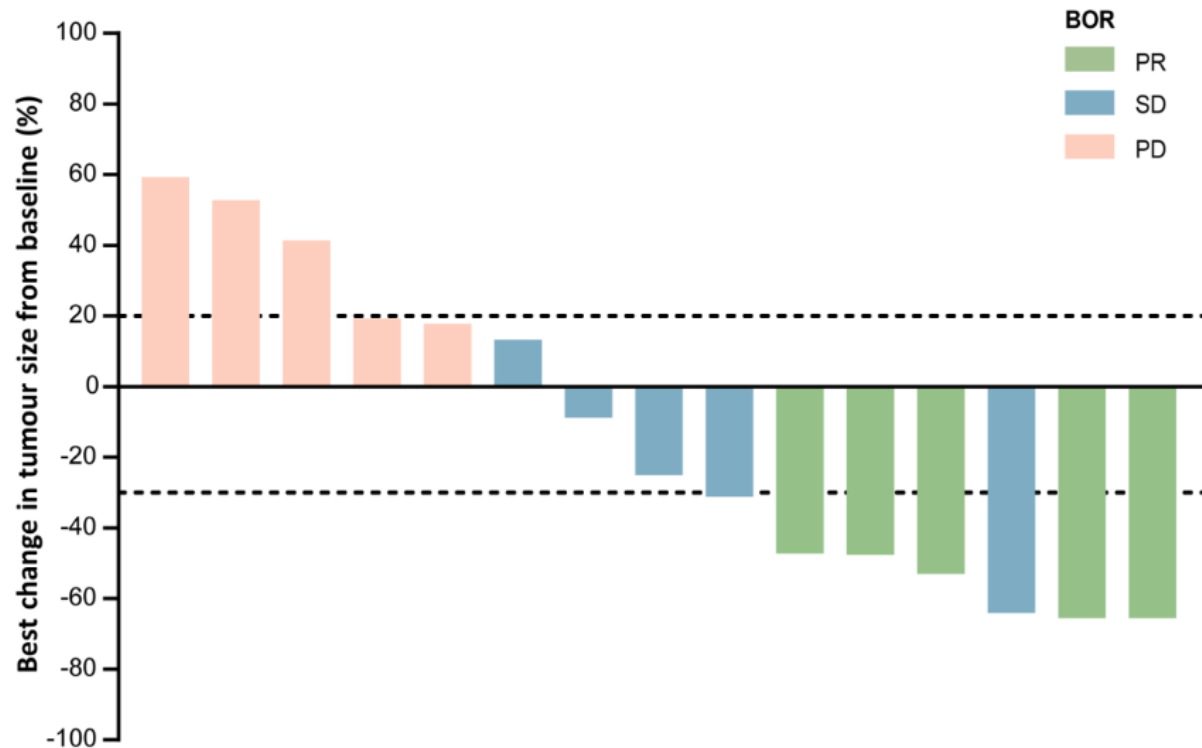


Best percentage change from baseline in total sum of target lesion diameter^a

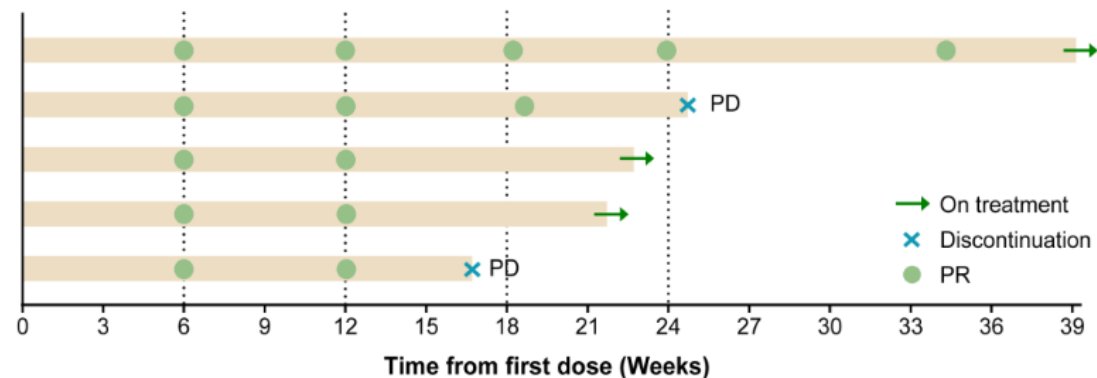


- 76.7% (33/43) of patients had tumor shrinkage
- 48.8% (21/43) of patients had a reduction of >30% in target lesion diameter

SHR-A1921 (TROP-2 Targeted ADC) as II line in ES-SCLC



Prior RT	+	-	+	-	+	+	-	-	-	-	+	-	-	-	+
Prior TOP2i	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-
H-Score	0	0	0	0	0	0	0	0	0	0	0	0	NE	30	0



	SCLC cohort (N=17)
Evaluable, N	15
BOR, n (%)	
PR	5 (33.3)
SD	5 (33.3)
PD	5 (33.3)
ORR, % (95% CI)	33.3 (11.8-61.6)
DCR, % (95% CI)	66.7 (38.4-88.2)
DoR, months (95% CI)	4.4 (2.3-NR)

CONCLUSIONS

- **Consolidation IO (DURVA) will be a new gold standard after CT/RT in LS-SCLC**
- **Front-line treatment is at the moment the unique chance to prolong survival in ED-SCLC**
- CT-IO modestly but significantly prolongs survival in advanced SCLC
- Combination of PE and IO (ATEZO or DURVA) is our standard of care
- Chemotherapy with PE as standard option, if IT contraindicated
- Few options currently available for second and subsequent lines therapy
- Participation in clinical trials strongly recommended (new agents: BiTE, new CT combination, ADC, etc.)
- New molecular classification of SCLC potentially helpful in identifying the immune-sensitive population

gabriele.minuti@ifo.it