

Tarlatamab Real-World Use and Early Effectiveness Outcomes in Patients With Previously Treated Small Cell Lung Cancer

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Poster: **PI.323**



Downloadable poster and video presentation

BACKGROUND

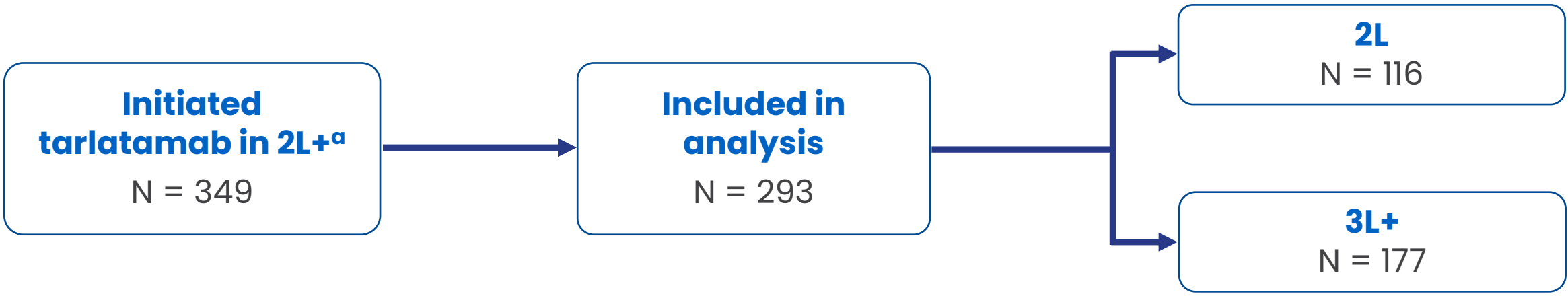
- Tarlatamab, a DLL3-directed T-cell engager, has demonstrated clinically meaningful activity in previously treated small cell lung cancer (SCLC)
- Evidence from routine US clinical practice remains limited, particularly in community settings and among patients with clinical characteristics underrepresented in trials
- Study objective:** To describe early real-world use and effectiveness of tarlatamab in 2L and 3L+ SCLC in a large US EHR-derived cohort

METHODS

Study design and endpoints

- Descriptive, retrospective observational study using the US-based, EHR-derived deidentified Flatiron Health Research Database¹
- Flatiron Health network includes academic and community sites and represents approximately 15–20% of U.S. patients with SCLC
- Patients who initiated tarlatamab in 2L+ between May 2024 and June 2025 were followed through December 2025 for outcomes
- Excluded patients treated in clinical trials and those missing step-up dosing information
- Endpoints included rwOS, DOT, rwPFS, rwRR, and rwDOR

Analysis population



^a All included patients were ≥18 years of age at SCLC diagnosis and were diagnosed with SCLC prior to tarlatamab initiation. Excluded 56 patients with missing step-up dosing information.

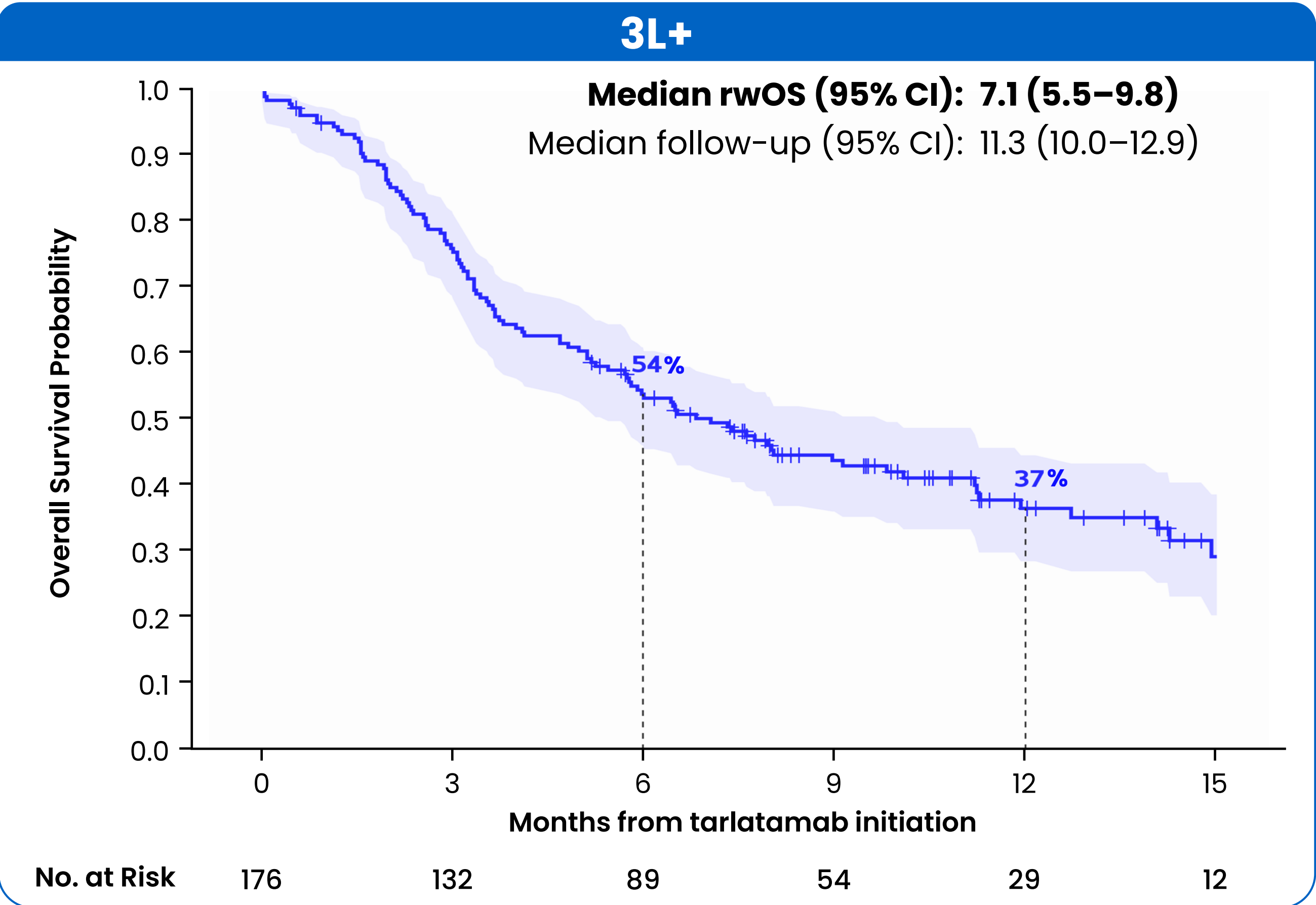
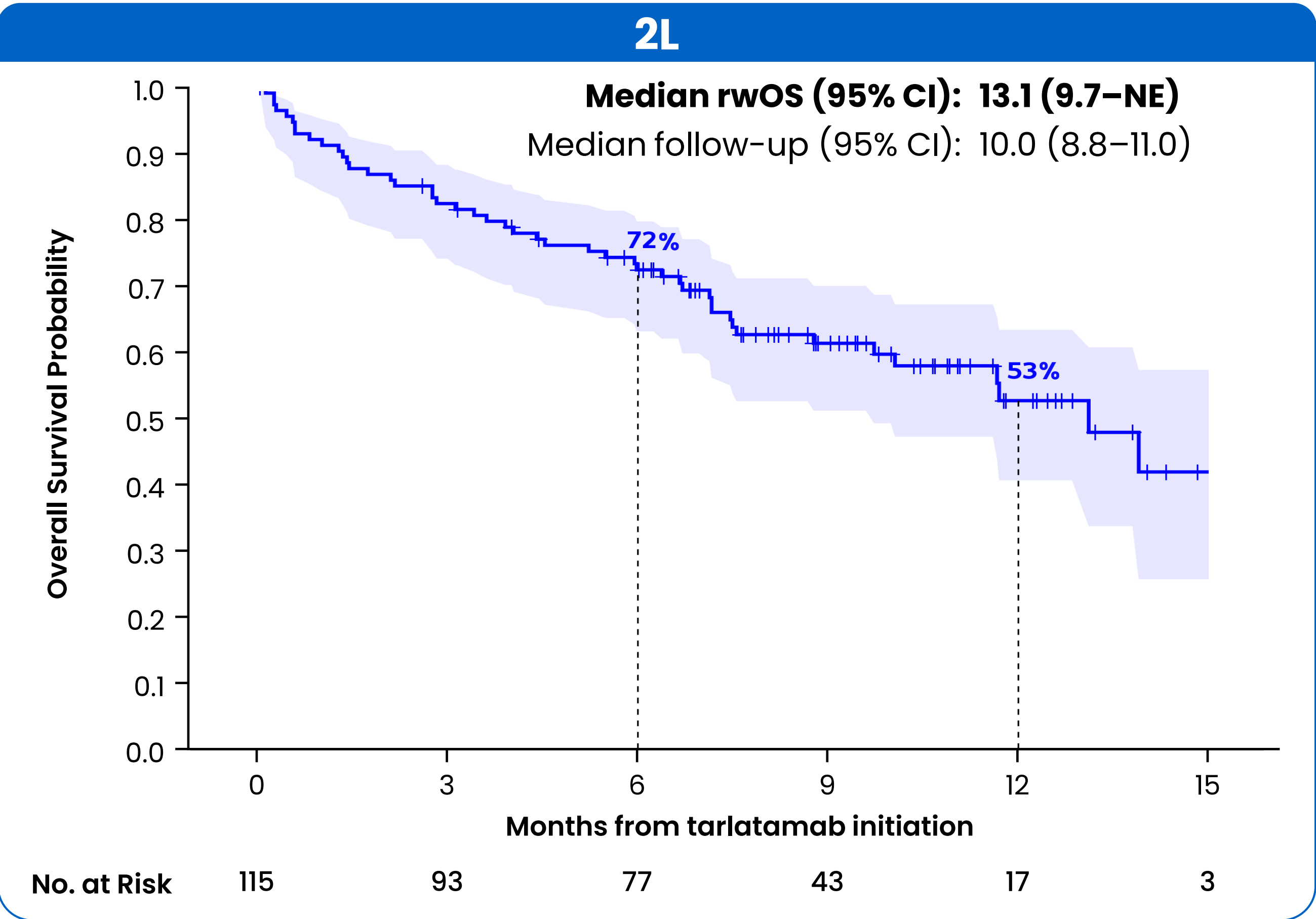
RESULTS

Table 1. Baseline demographic and clinical characteristics

Characteristic ^a	2L (N = 116)	3L+ (N = 177)
Median age at index (range), years	69 (45–84)	67 (46–85)
Male, n (%)	59 (51)	75 (42)
Race, n (%)		
Black	15 (13)	20 (11)
White	96 (83)	153 (86)
Hispanic, n (%)	5 (4)	5 (3)
Practice type, n (%)		
Academic	30 (26)	51 (29)
Community	81 (70)	97 (55)
History of smoking, n (%)	111 (96)	173 (98)
Stage at initial diagnosis, n (%)		
Limited	19 (16)	61 (35)
Extensive	93 (80)	113 (64)
ECOG PS, n (%)		
0–1	104 (90)	139 (79)
≥ 2	12 (10)	29 (16)
Platinum sensitivity status^b, n (%)		
Resistant (CFI < 90 days)	44 (38)	58 (33)
Sensitive (CFI ≥ 90 days)	62 (53)	114 (64)
Brain or CNS metastases^c, n (%)	42 (36)	83 (47)
Liver metastases^c, n (%)	59 (51)	91 (51)
Chronic comorbidities^d, n (%)	80 (69)	134 (76)
Number of prior lines of therapy, n (%)		
2	–	115 (65)
≥ 3	–	62 (35)
Front-line therapy^e, n (%)		
PD-L1 inhibitor	100 (86)	115 (65)
Platinum-based chemotherapy	106 (91)	172 (97)

^a Percentages may not total 100% because of missing data. ^b Chemotherapy-free interval (CFI) calculated as time from last dose of platinum chemotherapy during 1L to earliest real-world progression event prior to 2L, or day before 2L start if no progression (proxy for progression). ^c Evaluated prior to tarlatamab initiation; abstracted based on clinician documentation. ^d Evaluated on/prior to tarlatamab initiation; abstracted based upon clinician documentation; comorbidities included chronic pulmonary disease, congestive heart failure, connective tissue disorder, dementia, diabetes with or without end organ damage, hemiplegia, HIV/AIDS, mild chronic liver disease, moderate or severe chronic liver disease, peripheral vascular disease, moderate to severe renal disease, peptic ulcer disease. ^e Categories are not mutually exclusive.

Figure 1. Kaplan–Meier analysis of rwOS by line of treatment initiation*



* Outcomes are descriptive; 2L and 3L+ cohorts differed in patient characteristics and follow-up and were not directly compared. Two patients were excluded from rwOS analysis due to insufficient death date granularity. Solid lines indicate Kaplan–Meier estimates; shaded areas indicate 95% CI; dotted lines indicate Kaplan–Meier estimates of rwOS at 6 months and 12 months; tick marks indicate censored observations.

Table 2. Summary of secondary real-world effectiveness outcomes

Endpoint ^a	2L (N = 116)	3L+ (N = 177)
DOT , median (95% CI), months	4.7 (2.8–5.6)	2.6 (2.1–3.4)
rwPFS^b , median (95% CI), months	2.9 (2.1–4.4)	2.2 (2.0–3.0)
rwRR , % (95% CI)	44 (35–53)	36 (29–43)
Time to rwR , median (range), months	2.1 (0.1–6.8)	1.9 (0.1–7.3)
rwDOR , median (95% CI), months	5.5 (3.5–7.3)	5.3 (3.9–7.5)

^a Real-world response and progression based on clinician–documented assessments, with response reflecting partial or complete response following radiographic evaluation and progression reflecting documented disease progression. Time-to-event outcomes were estimated using the Kaplan–Meier method. ^b Two patients were excluded from the analysis due to insufficient death date granularity.

Abbreviations

1L, first-line; 2L+, second-line and beyond; 3L+, third-line and beyond; CFI, chemotherapy-free interval; CI, confidence interval; DLL3, delta-like ligand 3; DOT, duration of therapy; ECOG PS, Eastern Cooperative Oncology Group performance status; NE, not estimable; PD-L1, programmed death–ligand 1; rwOS, real-world overall survival; rwTTD/D, real-world time to treatment discontinuation/death; rwPFS, real-world progression-free survival; rwR, real-world response; rwRR, real-world response rate; rwDOR, real-world duration of response; SCLC, small cell lung cancer.

References

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- Mountziou G, et al. *N Engl J Med*. 2025;393:349–361.

TAKE HOME MESSAGES

A large nationwide real-world evaluation

Tarlatamab use and outcomes were characterized across community and academic practices

293

Patients treated with tarlatamab in routine US clinical practice

Effectiveness in routine practice

Real-world outcomes complement pivotal trial evidence^{2,3} in a broader, clinically heterogeneous population

Descriptive median rwOS*

2L **13.1** Months | 3L+ **7.1** Months

*2L and 3L+ cohorts were not directly compared

Evidence beyond trial populations

Tarlatamab was used in clinically complex patients (N = 293), including those with ECOG PS ≥ 2, brain or liver metastases, and chronic comorbidities

14%

ECOG PS ≥ 2

43%

BRAIN METASTASES

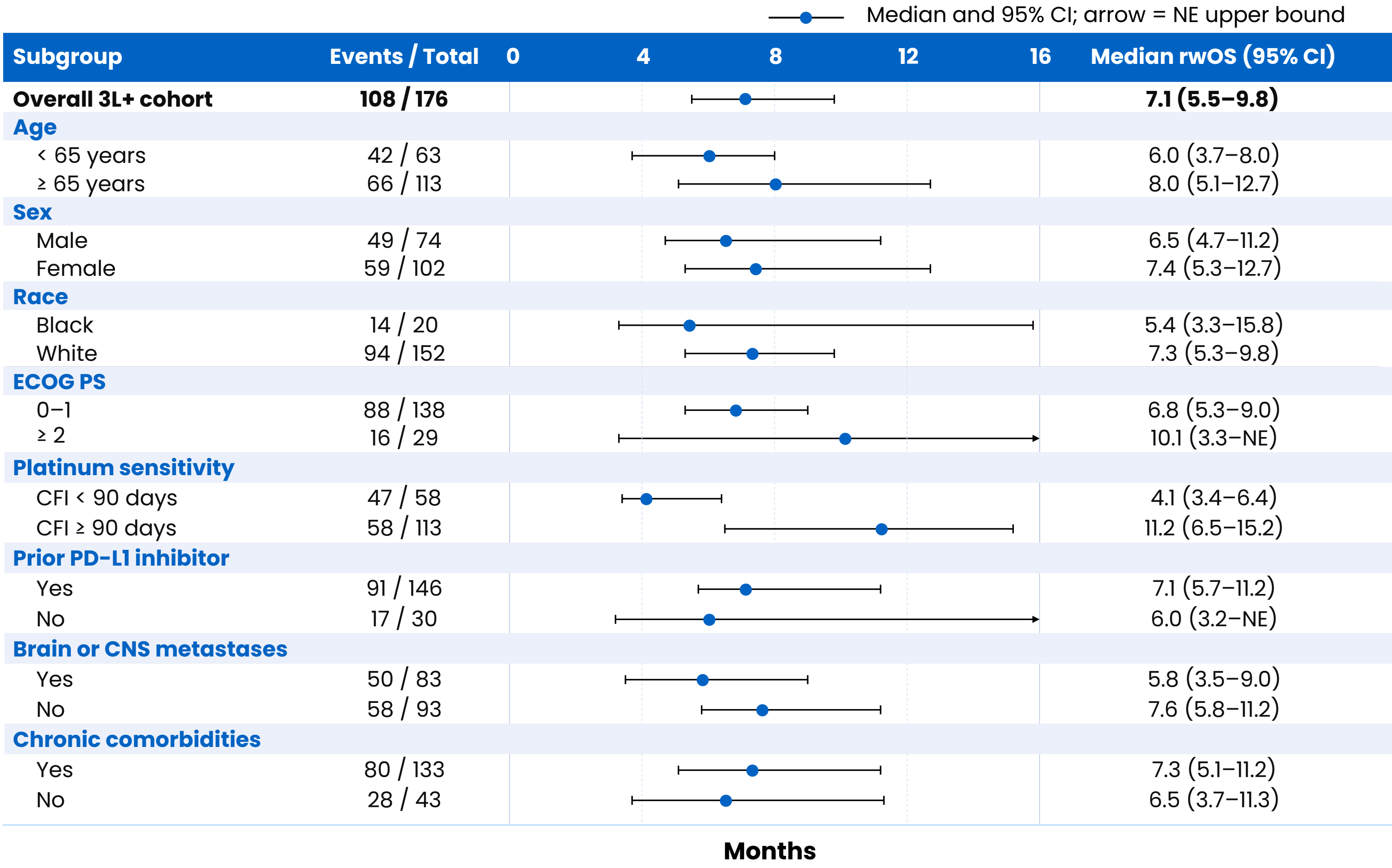
51%

LIVER METASTASES

73%

CHRONIC COMORBIDITIES

Figure 2. Median rwOS across clinically relevant subgroups among 3L+ tarlatamab patients (N = 176)*



* This was a descriptive analysis. No formal hypothesis testing or adjustment for differences between subgroups was performed; estimates should not be interpreted as evidence of differential treatment effect. Subgroup analyses among the 2L cohort were not reported due to limited events and immature data. Median rwOS values are in months; CI upper bound of NE is plotted to 16 months. Subgroups with < 10 patients were not evaluated.

Limitations

- Follow-up remains relatively short in the 2L cohort, and longer observation is needed to fully characterize real-world survival and durability of benefit
- As a retrospective observational study, treatment selection was determined by routine clinical practice and may be influenced by patient and physician factors not fully captured in the database
- Real-world response and progression were based on clinician documentation rather than protocol-defined RECIST assessments and should be interpreted accordingly

Acknowledgments

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