



Tarlatamab in Relapsed Small Cell Lung Cancer: Real World Safety, Efficacy, and Operational Outcomes Across a Hybrid Academic Community Practice Setting

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BACKGROUND

- Tarlatamab is a CD3xDLL3 bispecific antibody approved for relapsed small cell lung cancer (SCLC).
- Treatment is associated with cytokine release syndrome (CRS) and immune effector cell–associated neurotoxicity syndrome (ICANS), requiring close monitoring and sometimes inpatient (IP) admission, which limits widespread implementation.
- A better understanding of real-world safety and efficacy—particularly with outpatient (OP) initiation—is critical to guide broader uptake, especially as emerging data suggest strong survival benefit in earlier line settings

Methods

This retrospective analysis included patients treated with standard of care (SOC) tarlatamab in the setting of relapsed SCLC. This study includes patients treated across the Providence St. Joseph Health (PSJH) network including Alaska, Washington, Oregon, Montana, Texas, and California oncology practices between 1/1/2022 and 2/1/2026. Patients who received tarlatamab in the setting of a clinical trial were excluded from this cohort. Baseline characteristics, safety, efficacy, and operational outcomes were abstracted from the electronic medical record (EPIC). Data was analyzed using IBM SPSS.

Results

- A total of 43 patients were treated with SOC tarlatamab.
- Median age at cycle 1 day 1 (C1D1) was 64 years (range: 44-87), and 65% were female.
 - Among 34 response evaluable patients, overall response rate (ORR) was 29% (10/34) and disease control rate (DCR) 65% (22/34).
 - Among 22 patients with brain metastases at baseline, 12 were evaluable for intracranial response. Intracranial ORR was 58% (7/12), and intracranial DCR was 92% (11/12).

- CRS was observed in 22 patients (51%; with grade distribution G1: 16, G2: 5, and G3: 1). ICANS occurred in 9 patients (21%; with grade distribution G1: 1, G2: 4, G3: 3, and G4: 1).
- Median OS was numerically longer in patients with CRS reported versus those without (567 vs. 370 days). On univariable Cox regression, CRS reported was associated with a lower hazard of death, but this did not reach statistical significance (HR 0.52, 95% CI 0.20–1.35; p=.180)

- 19/43 patients (44%) received tarlatamab entirely in the outpatient setting; 24/43 (56%) received at least their initial dosing as an inpatient (including patients who transitioned to outpatient dosing after C1D1/C1D8).
- CRS incidence was similar between settings (Outpt 9/19 [47%] vs. Inpt 13/24 [54%]; OR 1.31, 95% CI 0.39–4.39, p=.658), as was risk of death (Outpt 7/19 [37%] vs. Inpt 12/24 [50%]; OR 1.71, 95% CI 0.50–5.86, p=.390).
 - On Cox regression, administration setting was not significantly associated with overall survival (HR 1.96 for inpatient vs. outpatient, 95% CI 0.74–5.18, p=.173). Rates of unplanned hospitalization within 30 days (Outpt 53% vs. Inpt 58%, p=.76), ICU admission (0% vs. 8%, p=.50), and disease control rate (58% vs. 46%, p=.54) also did not differ significantly between settings.

At the time of this analysis, median overall survival from C1D1 was 207 days (range: 5–567 days).

Table 1. Baseline Demographics

Demographics (n)		43	Disease at baseline	
Age		$\bar{x}$ = 62.9 (range 42-89)	Stage	
Gender (F)		0	Extensive	
Ethnicity			Limited	
			Brain Mets (Y)	
White		36	Prior lines	
Black		1	Range:1-4	
Unk		2	carboplatin	
Asian		3	cisplatin	
Other		1	etoposide	
Insurance Type			durvalumab	
Private		25	atezolizumab	
Federal		18	lurbinectedin	
Uninsured		0	topotecan	

Results (Continued)

Table 2. CRS and ICANS

	Toxicity & Management	
	Outpatient (n=19)	Inpatient (n=24)
Prophylactic acetaminophen used?	1	1
Prophylactic steroids used?	6	0
CRS - Number of Occurrences	9	13
CRS - Incidence (occruances/total n)	0.47	0.54
CRS - G1	7	9
CRS - G2	2	3
CRS - G3	0	1
ICANS- G1	0	1
ICANS - G2	1	3
ICANS - G3	1	2
ICANS - G4	1	0
Dysguesia reported?	12	5
Bronchospasm reported?	0	0
Unplanned hospitalization?	10	14
ICU admission?	0	2

Figure 1. Predictors of mortality and CRS

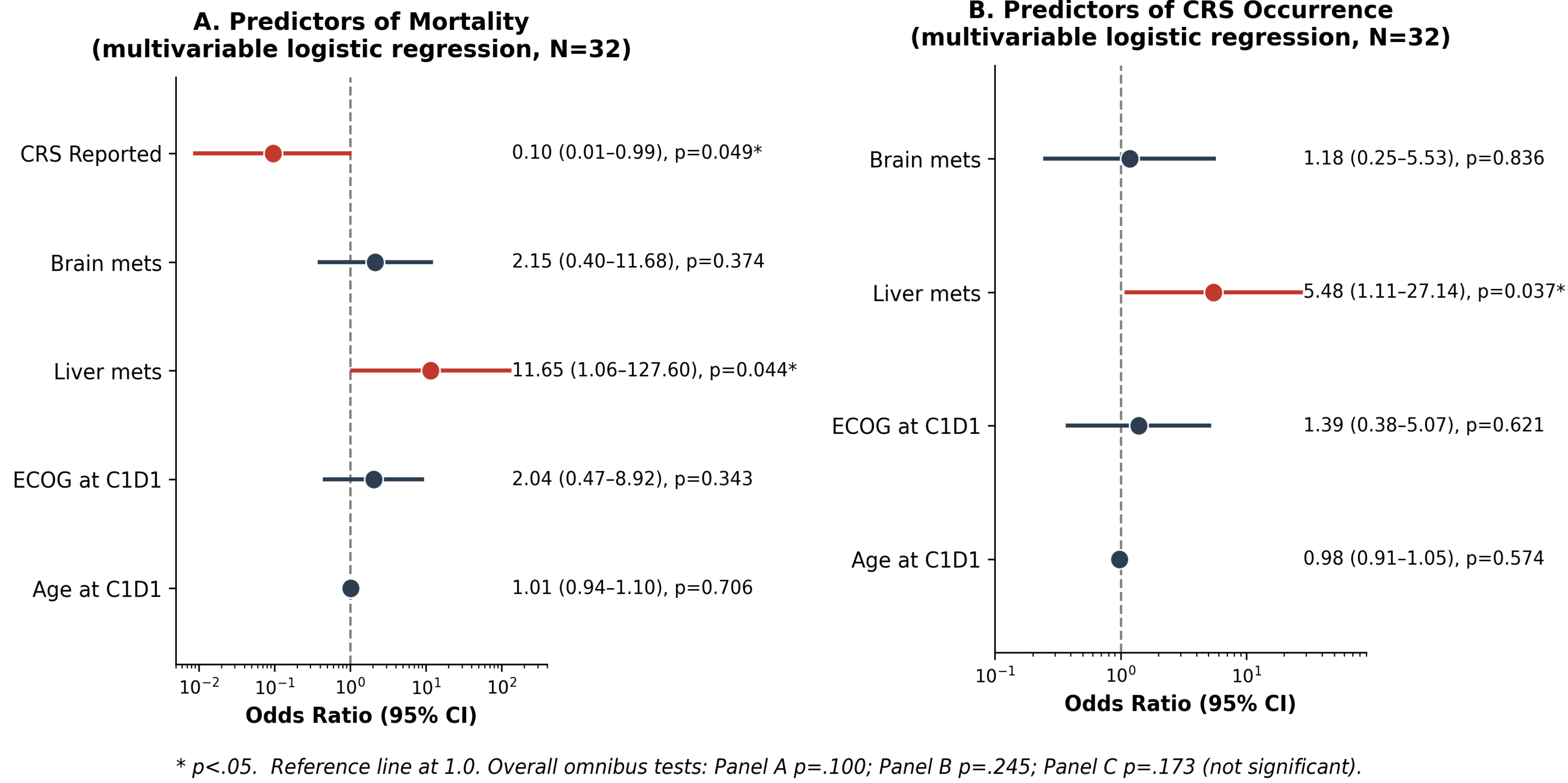
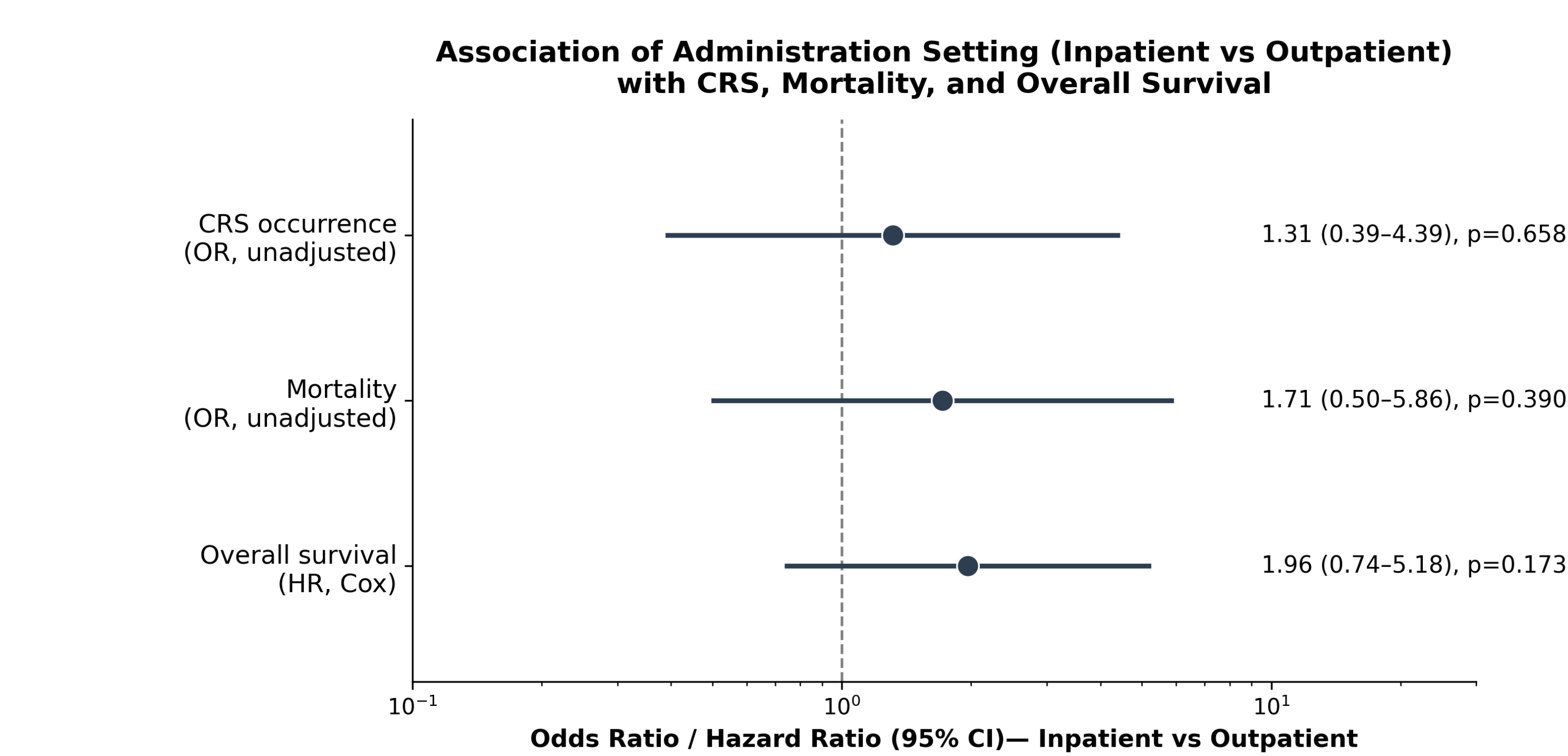


Figure 1A and 1B show that liver metastases were associated with significantly higher odds of death (p=0.044, CI 95%) and odds of CRS (p=0.37, CI95%). Age, ECOG PS, and Brain metastases were not significant predictors of death nor odds of CRS.

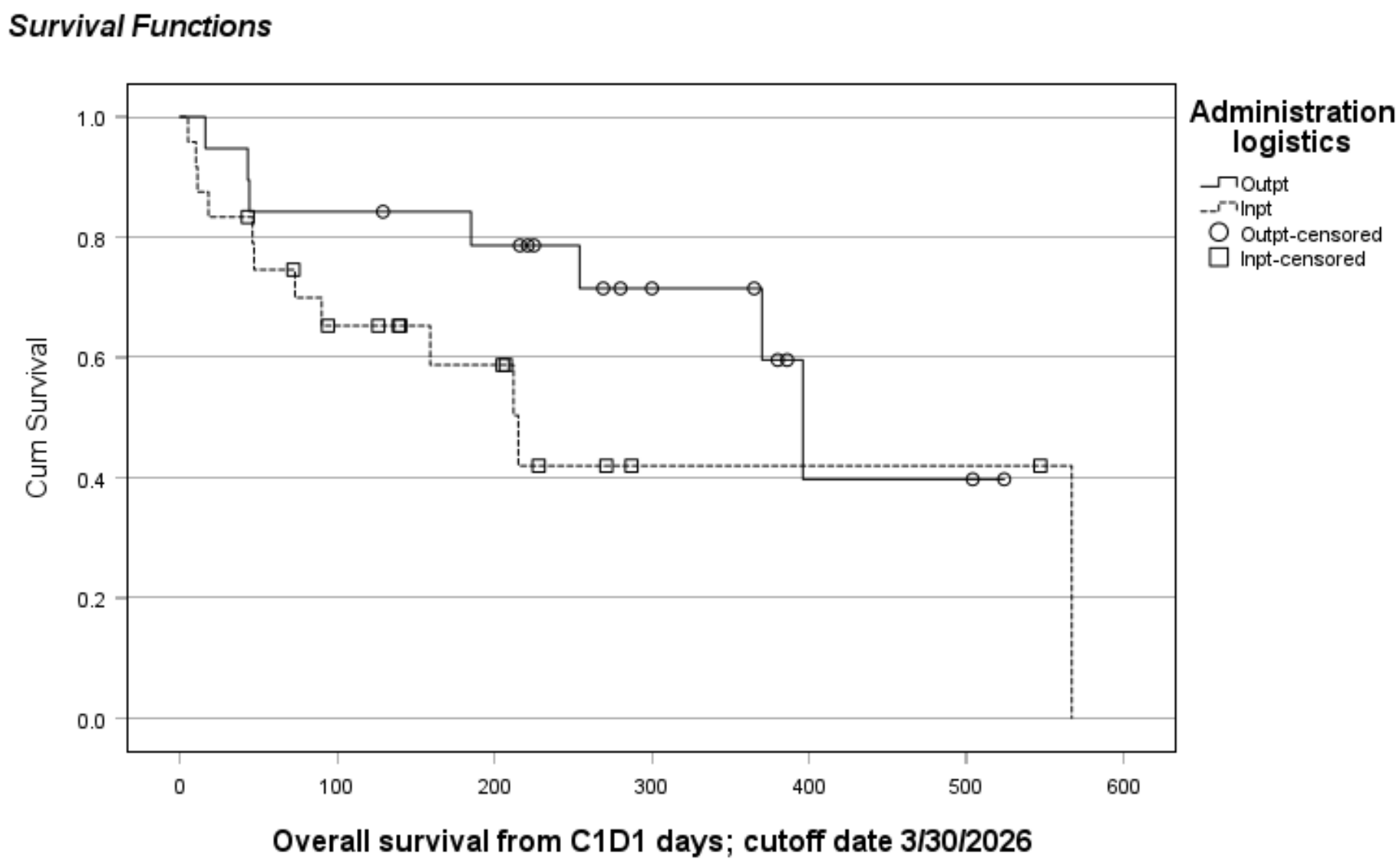
Figure 2. Inpatient vs Outpatient across mortality, OS hazard, and CRS



No comparisons reach statistical significance, while Inpt administration trended towards higher estimates of CRS and mortality this is in alignment with a higher rates of liver metastases being treated inpatient.

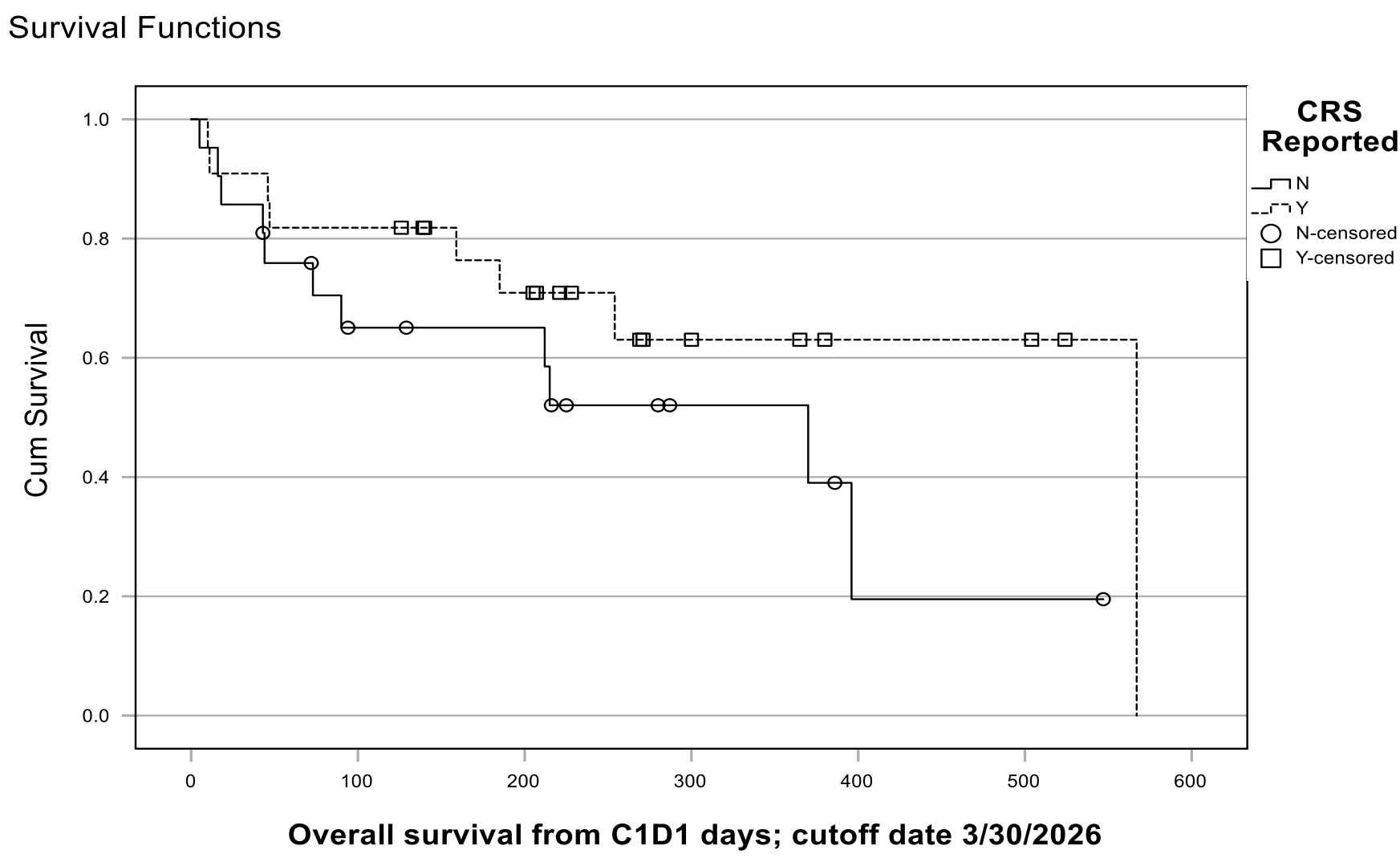
Results (Continued)

Figure 3. OS by treatment setting



Administration setting was not significantly associated with a difference in overall survival. Cox Regression: (HR 1.96 for inpatient vs. outpatient, 95% CI 0.74–5.18, p=.173)

Figure 4. CRS Reported and OS



While CRS reported was associated with a lower hazard of death with logistic regression (OR 0.096 (95% CI 0.009–0.994) p=.049). In Cox Regression (HR 0.52, 95% CI 0.20–1.35, p=.180) this did not reach statistical significance.

Key Take Away

- Outpatient administration of tarlatamab is feasible and was not associated with worse outcomes when compared with inpatient administration in this cohort.

Conclusion

- In this real-world experience, initiation of tarlatamab in the outpatient setting was feasible and safe with appropriate patient education and monitoring protocols.
- Efficacy and safety were consistent with published clinical trial data¹⁻⁴.
- It should be noted that the choice of inpatient vs. outpatient administration was a clinical (non-randomized)
- These findings support outpatient implementation of tarlatamab and reinforce the need for larger datasets to better characterize predictors of toxicity.
- Larger studies are needed to clarify whether CRS represents a true pharmacodynamic biomarker of response

References

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