



Impact of Individual-level Amyloid- β Clearance on Clinical Outcomes in a Real-World Lecanemab Cohort: An 18-month PET Study

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Introduction

Anti-amyloid monoclonal antibodies reduce amyloid- β (A β) burden and slow clinical decline at the group level. However, the individual-level meaning of amyloid clearance in real-world practice remains unclear.

- Eighteen-month follow-up amyloid PET allows evaluation of quantitative Centiloid reduction and visual amyloid clearance after lecanemab treatment.
- Factors influencing amyloid clearance, including baseline amyloid burden, patient characteristics, and ARIA, are not fully understood.
- The relationship between amyloid removal and individual-level clinical change remains uncertain.

We investigated 18-month amyloid PET changes, predictors of visual amyloid clearance, regional residual amyloid patterns, and associations with CDR-SB change in a real-world lecanemab cohort.

Methods

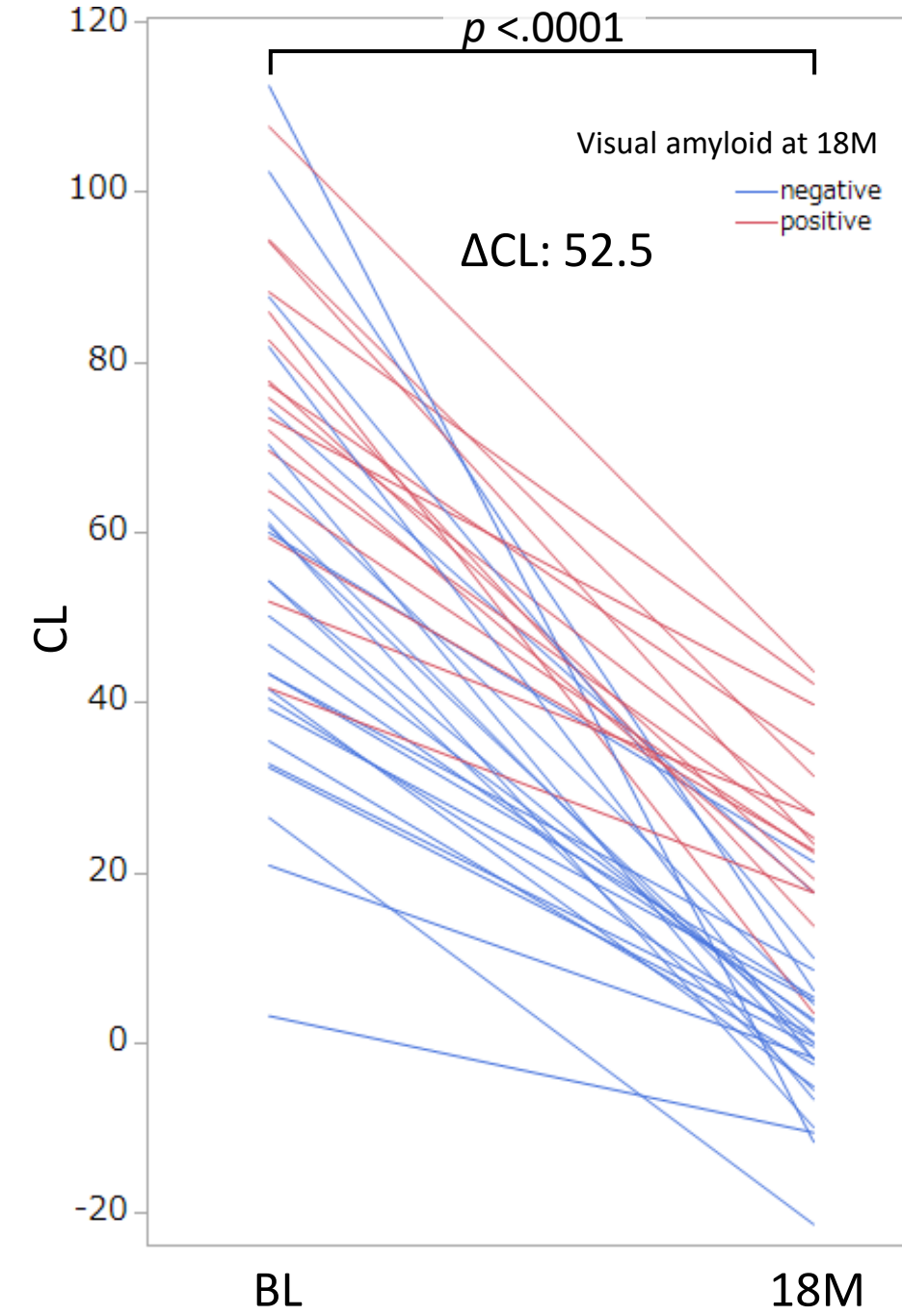
- Patients: Completed 18 months of lecanemab treatment by May 2026 and underwent baseline and 18-month amyloid PET with the same tracer.
- Amyloid PET tracers: ¹⁸F-Flutemetamol or ¹¹C-PiB.
- Quantification: Centiloid scale; VIZcalc for ¹⁸F-Flutemetamol and PiBcalc for ¹¹C-PiB.
- Visual amyloid clearance: Conversion to amyloid PET negativity by visual read at 18 months, assessed by an experienced reader (K.I.).
- Statistical analysis: JMP Pro 18.

Results

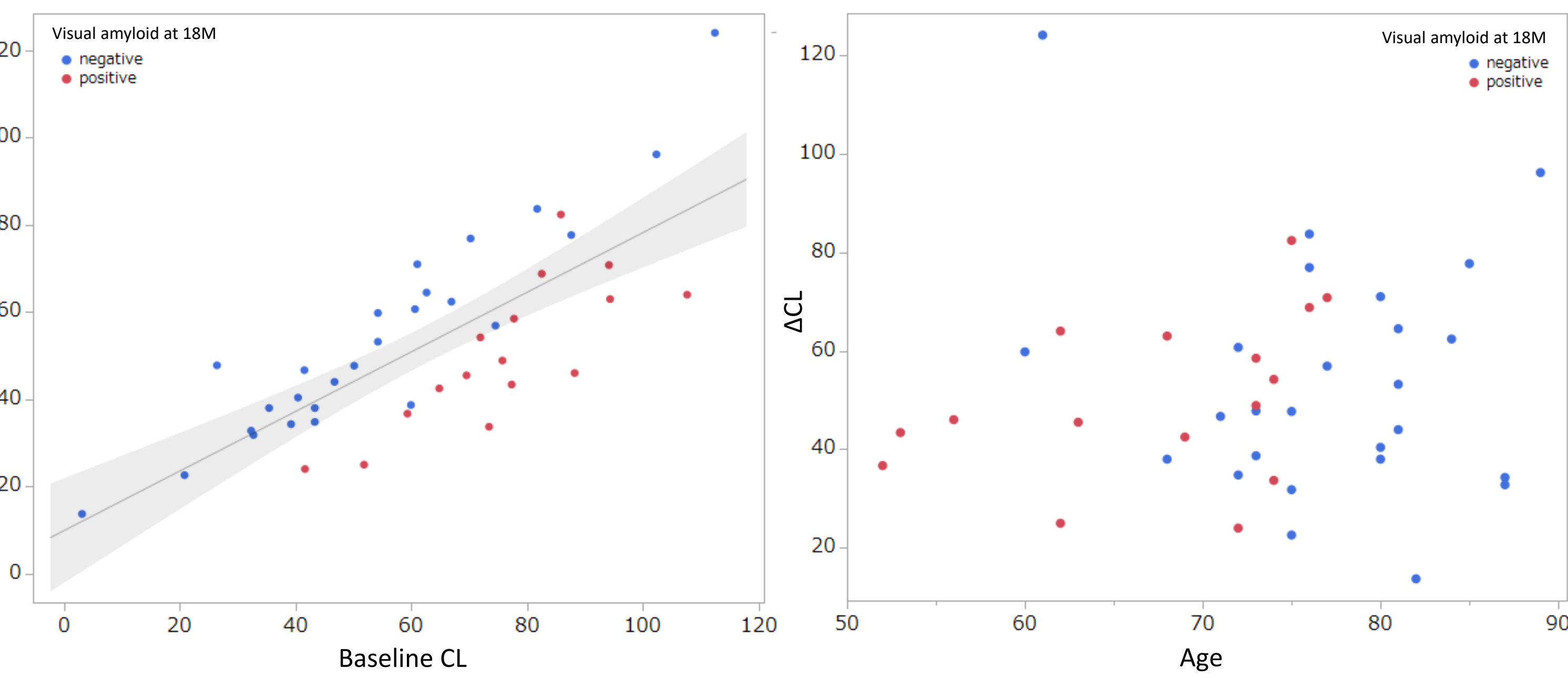
Patient Demographics

	n = 42
Age, mean (SD), y	73.3 (8.9)
Female, N (%)	33 (78.5)
CDR global = 0.5, N (%)	38 (90.5)
CDR-SB, mean (SD)	2.73 (1.17)
MMSE, mean (SD)	25.0 (2.1)
Amyloid PET CL at BL, mean (SD)	62.4 (24.3)
APOE ϵ 4 genotype, N	
non-carrier	4
heterozygous carrier	3
homozygous carrier	1
N/A	34
Any ARIAs during treatment period, N (%)	7 (16.7)
Visual amyloid clearance at 18M, N (%)	26 (61.9)
CDR-SB at 18M, mean (SD)	4.60 (2.19)
Amyloid PET CL at 18M, mean (SD)	9.8 (15.7)

A β reduction over 18 months



Factors associated with A β clearance



	OR	95% CI
Age, per 5-year increase	2.993	1.506-8.791
Baseline CL, per 10-CL increase	0.739	0.251-0.772

- Older age and lower baseline CL independently predicted visual A β clearance.
- Sex showed an imprecise association.
- ARIA occurrence was not associated with A β clearance.

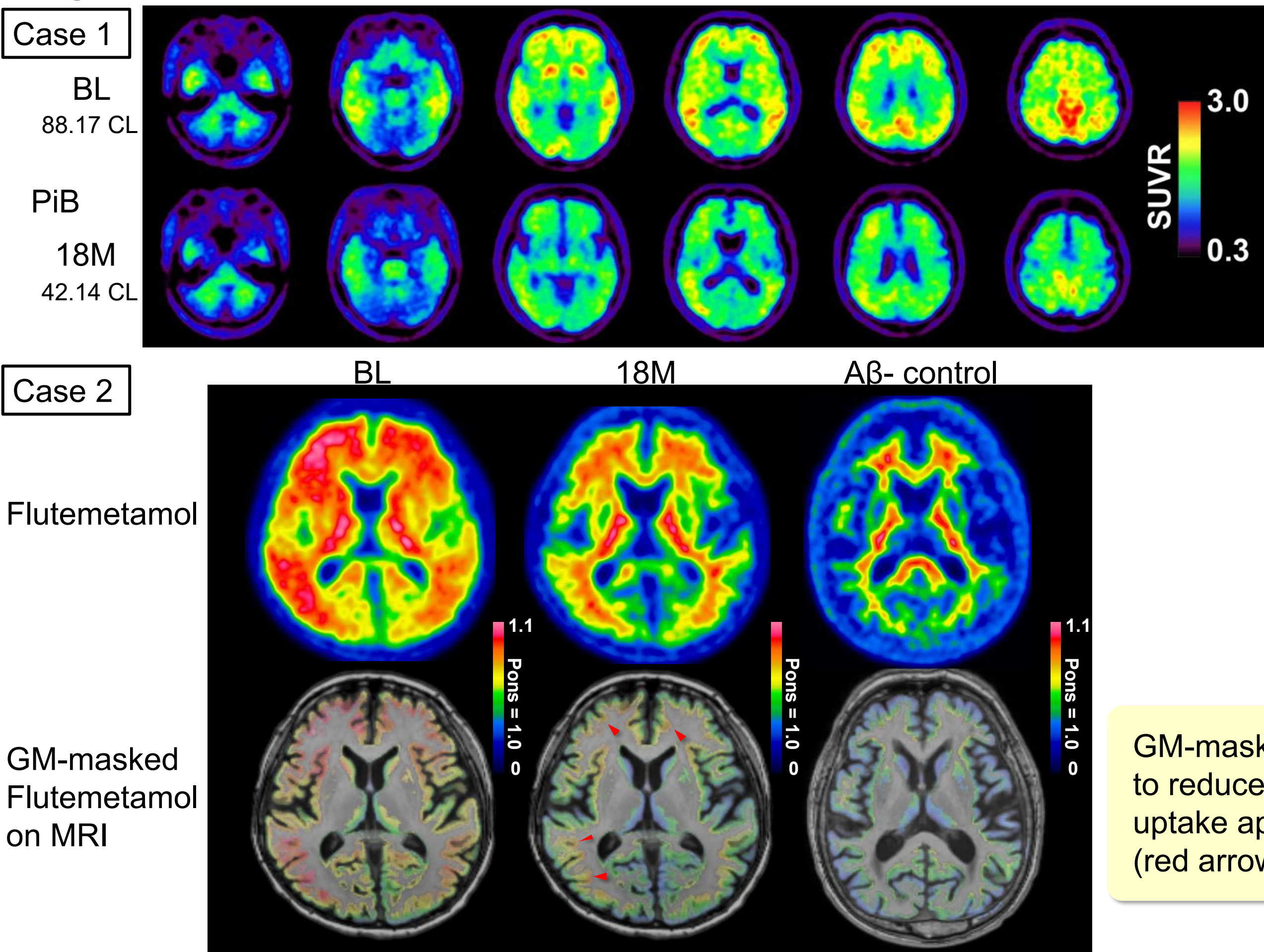
Regions with residual A β deposition

Age (y)	Frontal	PCC/PC	Temporal	Parietal	Striatum
52					
53					
56					
62					
62					
63					
68					
69					
72					
73					
73					
74					
74					
75					
76					
77					

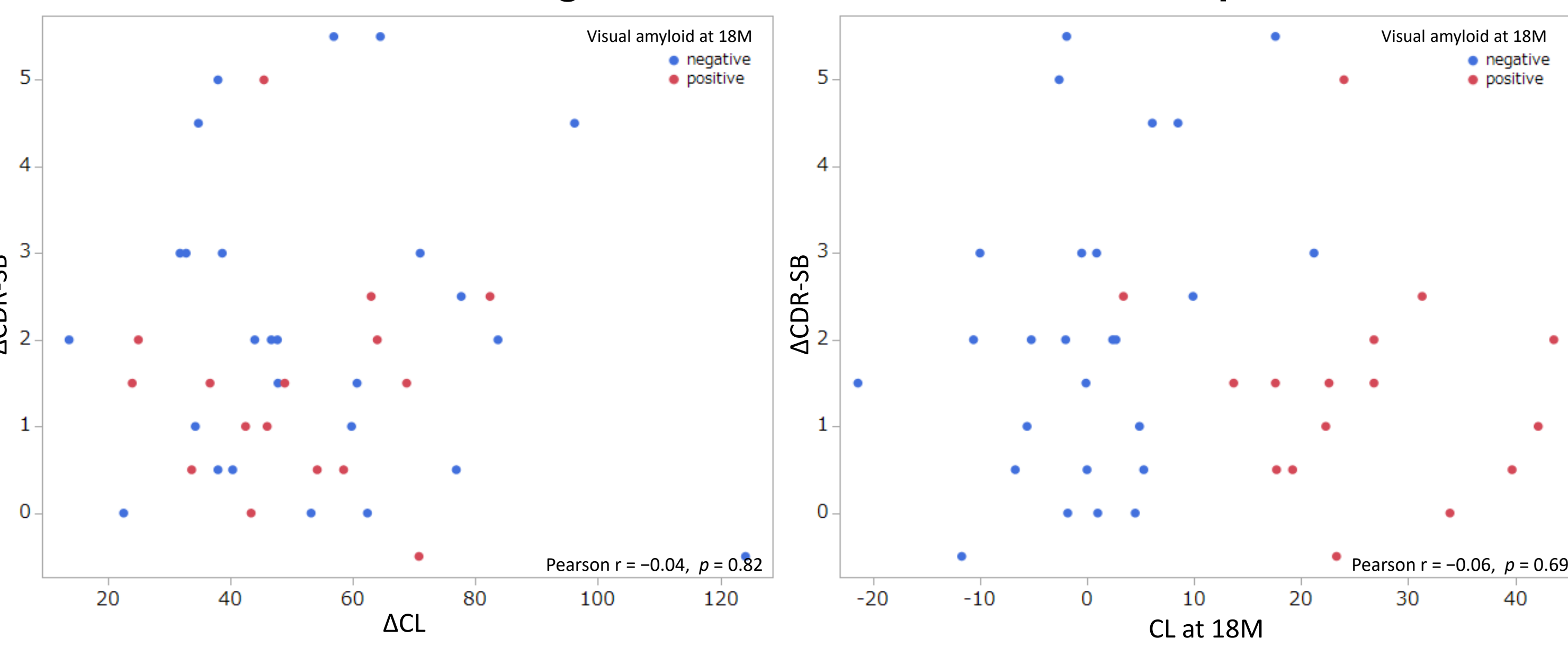
Based on the partial assessment of visual read, pink = positive, white = negative

Striatal A β showed the lowest frequency of residual deposition at 18 months.

Images of representative cases with residual A β deposition



Individual-level CDR-SB change was not associated with Δ CL or post-treatment CL



GM-masked PET images were overlaid on MRI to reduce white matter spill-in. Residual tracer uptake appeared preferentially in sulcal regions (red arrows) rather than on gyral crowns.

Abbreviations: A β , amyloid- β ; ARIA, amyloid-related imaging abnormalities; BL, baseline; CL, Centiloid; 18M, 18 months; Δ CL, Centiloid reduction from baseline to 18 months; PCC/PC, posterior cingulate cortex/precuneus; GM, gray matter; Δ CDR-SB, change in CDR-SB from baseline to 18 months.

Conclusions

Our real-world data suggest:

- Visual amyloid clearance was achieved in 61.9% of patients after 18 months of lecanemab treatment.
- Older age and lower baseline amyloid burden independently predicted visual amyloid clearance.
- No clear individual-level association was observed between CDR-SB change with amyloid removal.
- Larger studies are warranted to clarify the clinical significance of individual-level amyloid clearance.

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