

Baseline Centiloid Values as Predictors of Treatment-Related ARIA in Anti-Amyloid Immunotherapy: A Single-Center Chart Review

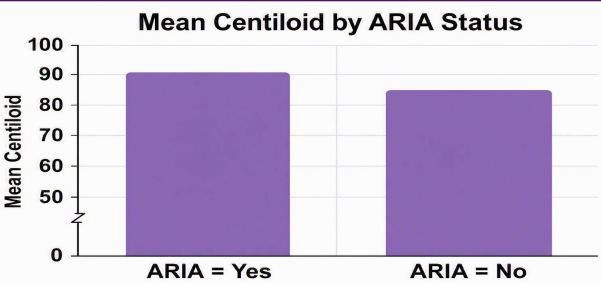
Kyle Duale, PharmD^{1,2}; Rajeet Shrestha, MD^{1,3,4}; Susie A. Sami¹; Brian S. Appleby^{1,3,4}, MD; Rebecca DiFranco, RN¹; Mohammed Elkasaby, MD^{1,3,4}; Alexandra Kovacevich, MD^{1,3}

Tuesday-0056

¹University Hospitals Cleveland Medical Center, ²University Hospitals Specialty Pharmacy, ³Case Western Reserve University, Department of Psychiatry, ⁴Case Western Reserve University, Department of Neurology

Key Takeaways:

1. Baseline Centiloid burden, APOE4 status, and antihypertensive use did not significantly predict ARIA in this cohort.



INTRODUCTION	METHODS	RESULTS	CONCLUSIONS	REFERENCES
- Two anti-amyloid monoclonal antibodies – lecanemab and donanemab - have been FDA-approved for treatment of early Alzheimer's disease (AD). - Amyloid-related imaging abnormalities (ARIA), including ARIA-E (vasogenic edema) and ARIA-H (hemosiderin deposition), represent important adverse events. - APOE4 genotype represents the primary risk factor for ARIA, with homozygotes demonstrating higher rates than non-carriers. - Recent analyses suggest baseline amyloid burden measured by Centiloids may modestly predict ARIA-E risk, but relationship in real-world clinical practice remains incompletely characterized.	- This single-center retrospective chart review examined patients who received at least one dose of lecanemab or donanemab between January 1st, 2024 and August 31st, 2025. - Of 57 patients screened, 44 met inclusion criteria for receiving at least one treatment dose, MRI and having baseline amyloid PET. - Baseline Centiloid scores were calculated using standardized methodology. ARIA events were identified through systematic review of MRI scans. - Statistical analyses examined correlations between baseline Centiloid scores and ARIA occurrence, adjusting for APOE ε4 status and antihypertensive use. t-tests, chi-squared analysis, and multivariate logistic regression utilized.	- ARIA rate: 38.6% (22/57). Baseline amyloid burden not significantly different between participants who developed ARIA (mean 91.16 ± 35.26 CL) versus those who did not (mean 84.59 ± 30.71 CL; p=0.517). - Neither APOE4 carrier status ($\chi^2=0.307$, p=0.579) nor baseline antihypertensive medication use ($\chi^2=1.084$, p=0.298) demonstrated significant associations with ARIA. - Multivariate logistic regression yielded a non-significant model ($\chi^2=1.097$, p=0.778) - Individual predictors remained non-significant: baseline Centiloids (OR 1.007, 95% CI 0.987-1.027, p=0.494), APOE4 carrier status (OR 1.619, 95% CI 0.404-6.488, p=0.496), and antihypertensive use (OR 1.328, 95% CI 0.369-4.780, p=0.665).	Baseline Centiloid burden, APOE4 status, and antihypertensive use showed modest association but did not significantly influence ARIA. These findings contrast with larger phase 3 trials demonstrating APOE4 genotype as the strongest ARIA predictor and modest associations for baseline amyloid burden. The discordance likely reflects insufficient statistical power from the small sample size. ARIA risk stratification should continue to rely on evidence from adequately powered studies.	- Centiloid Recommendations for Clinical Context-of-Use From the AMYPAD Consortium. Alzheimer's & Dementia : The Journal of the Alzheimer's Association. 2024. Collij LE, Bollack A, La Joie R, et al. Review - A Practical Overview of the Use of Amyloid-Pet Centiloid Values in Clinical Trials and Research. Neuroimage. Clinical. 2024. Iaccarino L, Burnham SC, Tunali I, et al. Review - Amyloid-Related Imaging Abnormalities With Donanemab in Early Symptomatic Alzheimer Disease: Secondary Analysis of the TRAILBLAZER-ALZ and ALZ 2 Randomized Clinical Trials. JAMA Neurology. 2025. Zimmer JA, Ardayfio P, Wang H, et al. RCT - Incidence of Amyloid-Related Imaging Abnormalities in Phase III Clinical Trials of Anti-Amyloid-β Immunotherapy: An Updated Meta-Analysis. Neurology. 2025. Jeong SY, Suh CH, Lim JS, et al. SR - Amyloid-Related Imaging Abnormalities (ARIA): Radiological, Biological and Clinical Characteristics. Brain : A Journal of Neurology. 2023. Hampel H, Elhage A, Cho M, et al. Review - Donanemab in Early Symptomatic Alzheimer Disease: The TRAILBLAZER-ALZ 2 Randomized Clinical Trial. The Journal of the American Medical Association. 2023. Sims JR, Zimmer JA, Evans CD, et al. RCT
CONTACT Kyle Duale, PharmD Kyle.Duale2@UHHospitals.org University Hospitals Cleveland Medical Center CASE WESTERN RESERVE UNIVERSITY ALZHEIMER'S ASSOCIATION AAIC 26				