

Cardiovascular effects of lecanemab in patients with Alzheimer’s disease

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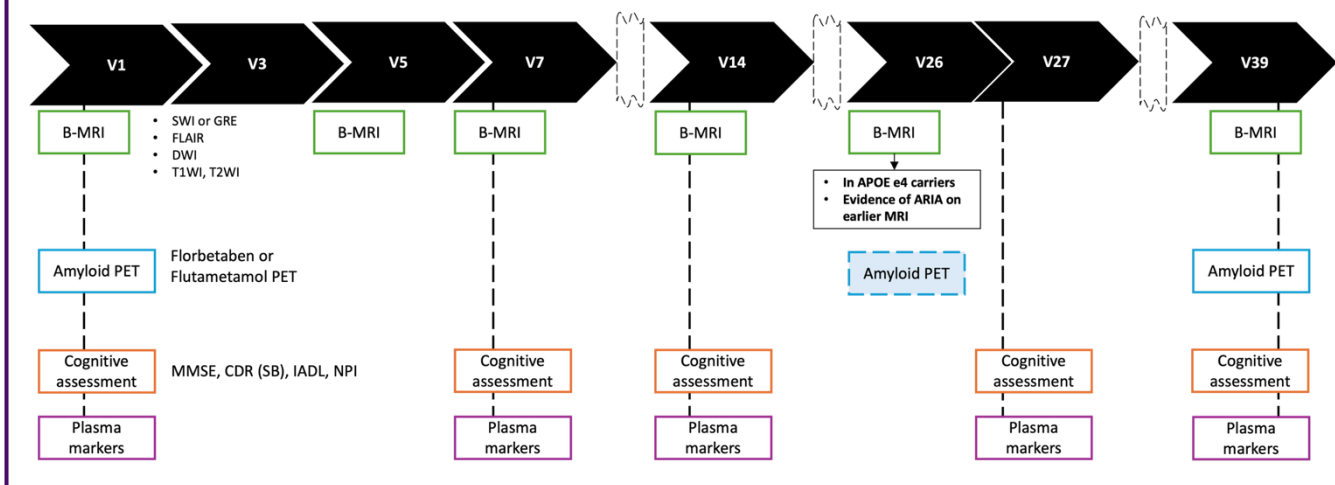
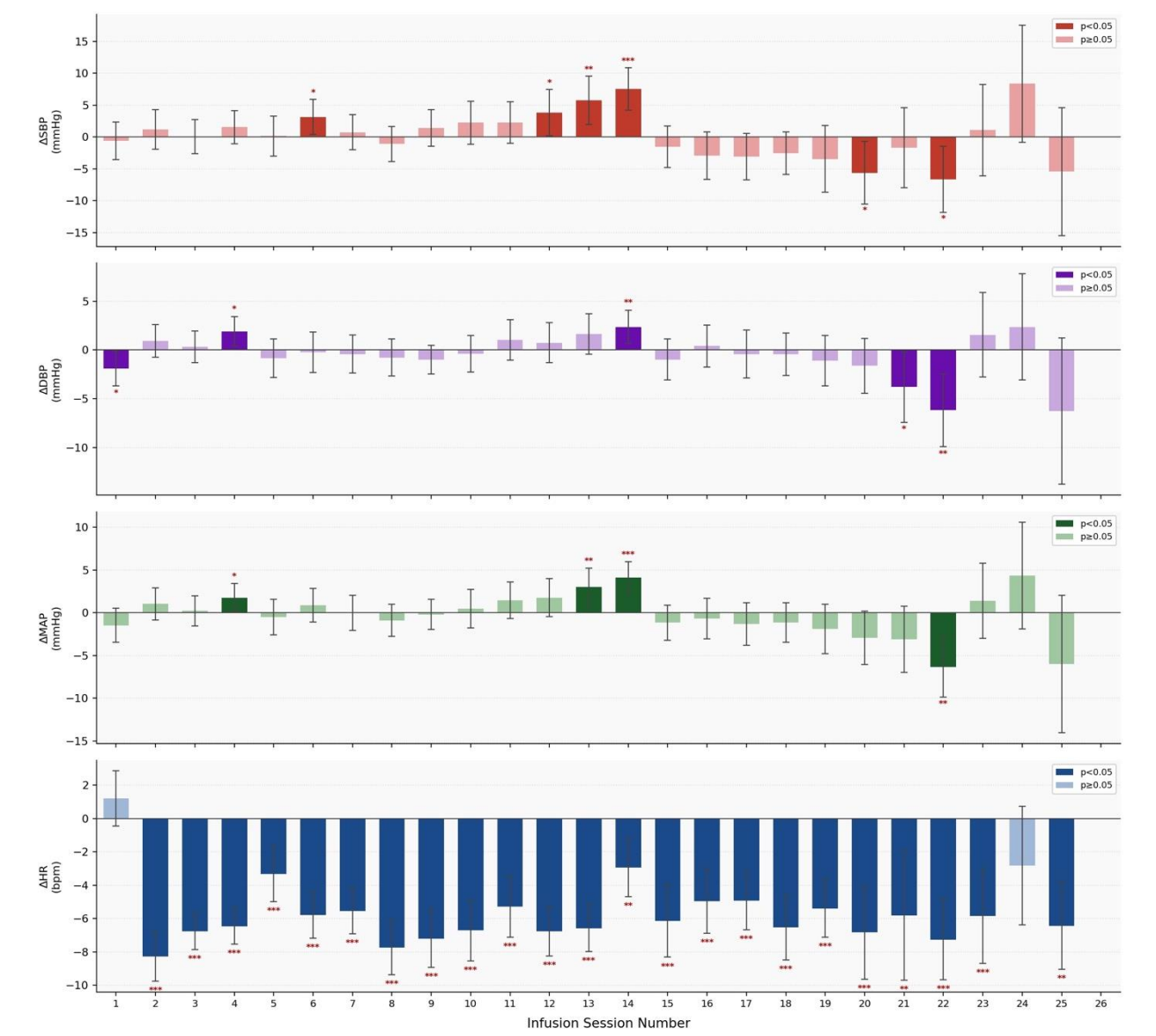
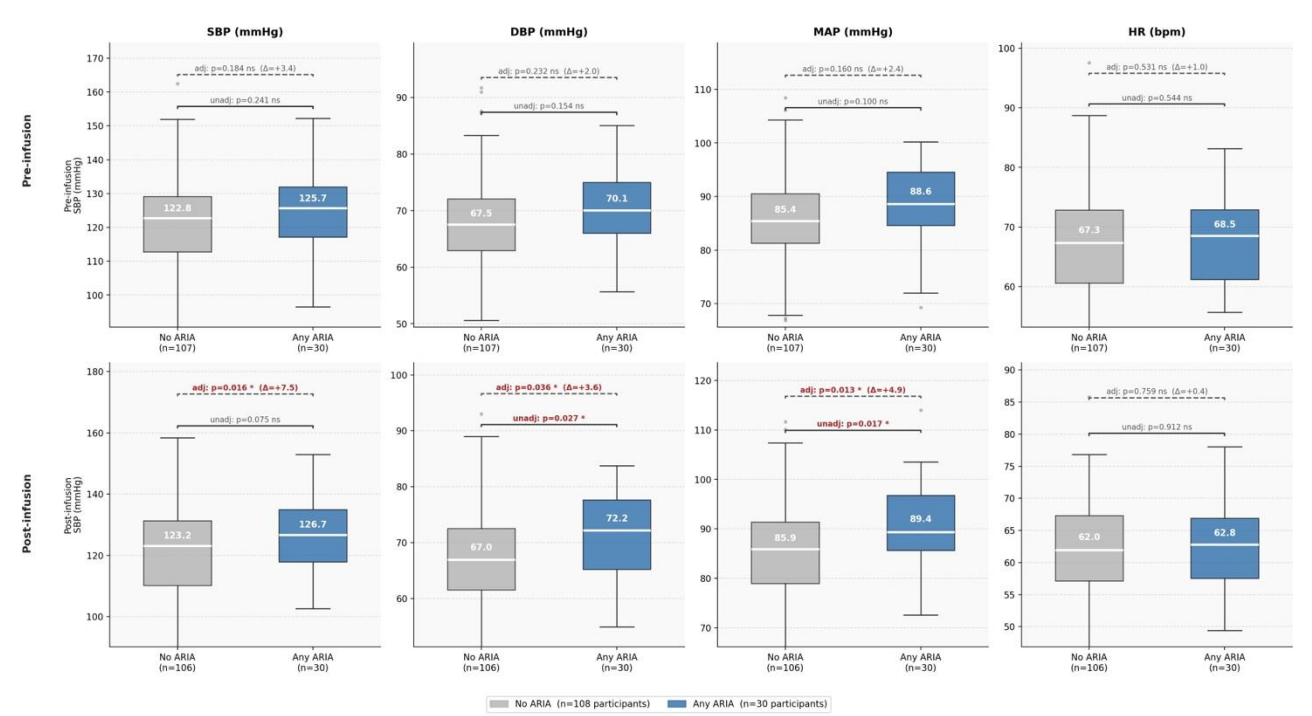
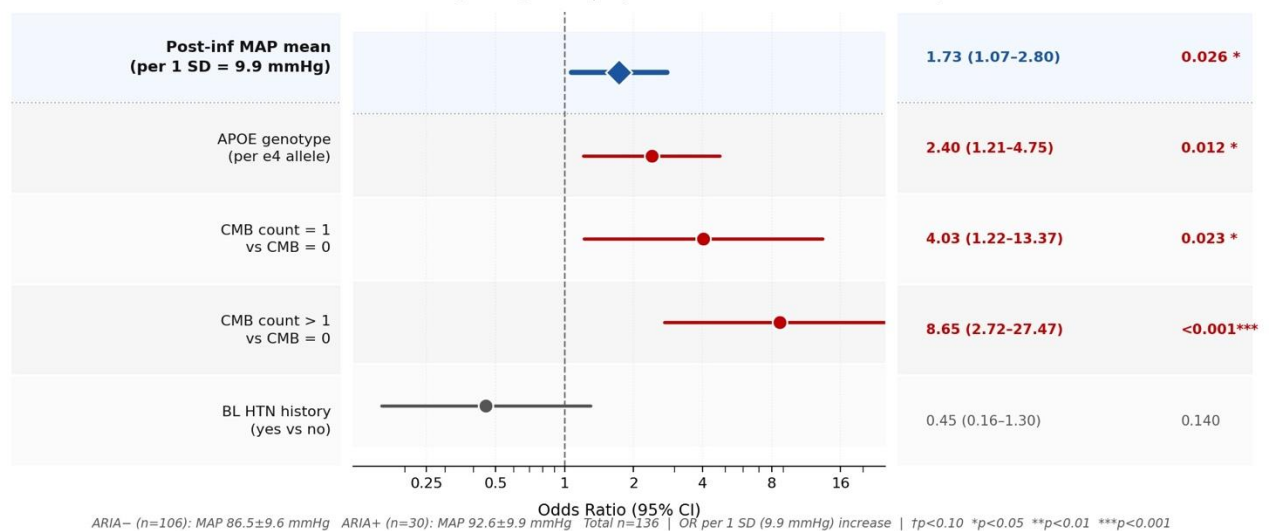
Key takeaways

1. The amyloid-related imaging abnormalities (ARIA)-positive group had higher baseline systolic blood pressure and mean arterial pressure than the ARIA-negative group.

2. Higher post-infusion mean arterial pressure during treatment sessions 1-4 may predict subsequent ARIA development.

3. Hemodynamic abnormalities after infusion were relatively common, with post-infusion hypertension (≥150/100) occurring in 25.5% of participants.

4. Lecanemab infusion was associated with a modest reduction in heart rate.

INTRODUCTION	METHODS	RESULTS	RESULTS & CONCLUSIONS	CONCLUSIONS
Lecanemab has demonstrated significant reductions in cerebral amyloid burden and modest slowing of clinical progression in patients with Alzheimer’s disease (AD). However, adverse events, particularly amyloid-related imaging abnormalities (ARIA), may limit the widespread use of lecanemab in clinical practice. Recent evidence suggests that higher mean arterial blood pressure (BP) may predict the risk of ARIA in patients treated with donanemab, indicating that baseline BP may represent a modifiable risk factor for ARIA, in contrast to nonmodifiable factors such as APOE genotype. Therefore, we aimed to investigate the prevalence of cardiovascular abnormalities, including hypertension and bradycardia, and to compare BP and heart rate (HR) according to ARIA status. We further examined whether post-infusion BP could predict the subsequent development of ARIA. 	We retrospectively included 138 participants with AD between January 2025 and January 2026. Figure 1 represents the study workflow. Clinical assessments included a history, a comprehensive neurological examination, neuropsychological testing, brain magnetic resonance imaging (MRI), routine laboratory tests, and amyloid positron emission tomography (PET). If brain MRI disclosed more than four cerebral microbleeds (CMB), a single macrohemorrhage, or superficial siderosis, lecanemab was not initiated. Surveillance MRI was performed before the fifth, seventh, and fourteenth infusions. Lecanemab was administered intravenously every two weeks. BP and HR were measured before and after each infusion and post-minus-pre infusion differences (ΔVital signs) were calculated for SBP (ΔSBP), DBP (ΔDBP), MAP (ΔMAP), and HR (ΔHR) at each treatment session. To determine whether the infusion-related change at each session differed significantly from zero, paired t-tests were applied to pre- and post-infusion measurements at each session. Statistical significance was set at $p < 0.05$. Given the limited number of ARIA events, Firth’s penalized likelihood logistic regression was used to obtain bias-reduced estimates and confidence intervals. Models were adjusted for APOE e4 allele count, baseline CMB burden, and history of hypertension.	 Figure 2. Mean post-pre infusion changes in SBP, DBP, MAP, and HR according to treatment session.  Figure 3. Comparison of pre-infusion and post-infusion hemodynamic measures according to ARIA status	 Figure 4. Post-infusion mean arterial pressure (sessions 1-4) as a predictor of ARIA To the best of our knowledge, this is the first study to investigate the cardiovascular effects in patients treated with lecanemab, with a particular focus on hemodynamic changes. First, compared with the ARIA-negative group (n=108, 78.3%), the ARIA-positive group (n=30, 21.7%) had a higher prevalence of APOE e4 carriers (homozygosity: 26.7% vs. 9.3%), a greater burden of baseline CMBs (50.0% vs. 15.7%) and more moderate-to-severe WMH. Baseline SBP (130.5 vs. 120.5 mmHg, $p=0.041$) and MAP (94.7 vs. 86.5 mmHg, $p=0.027$) were also higher in the ARIA-positive group. Second, post-infusion HR was generally lower than pre-infusion HR across most treatment sessions, while transient increases and decreased in post-infusion SBP, DBP, and MAP were observed during treatment. (Fig. 2.).	Third, post-infusion hypertension ($\geq 150/100$), hypotension ($<90/60$), and bradycardia ($<50/\text{min}$) were observed in 25.5%, 52.6%, and 18.2% of participants, respectively, whereas pre-infusion hypertension, hypotension, and bradycardia were found in 18.2%, 48.2%, and 3.6%. Fourth, after adjustment of baseline hypertension, mean post-infusion SBP, DBP, and MAP were higher in the ARIA – positive group than in the ARIA-negative group (Fig. 3.) Finally, higher mean post-infusion MAP during treatment sessions 1-4 were associated with increased odds of subsequent ARIA development (Fig. 4.) Based on the results of this study, post-infusion BP may be a potential predictor of subsequent ARIA development. However, these findings should be replicated and validated in larger independent cohorts.

CONTACT

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