

Photopsia during Anti-Amyloid Therapy: Two Contrasting Cases

Rajeet Shrestha^{1,2,3}, Susie Sami¹, Kyle Duale^{1,4}, Rebecca DiFranco¹

¹University Hospitals Cleveland Medical Center

²Case Western Reserve University, Department of Psychiatry

³Case Western Reserve University, Department of Neurology

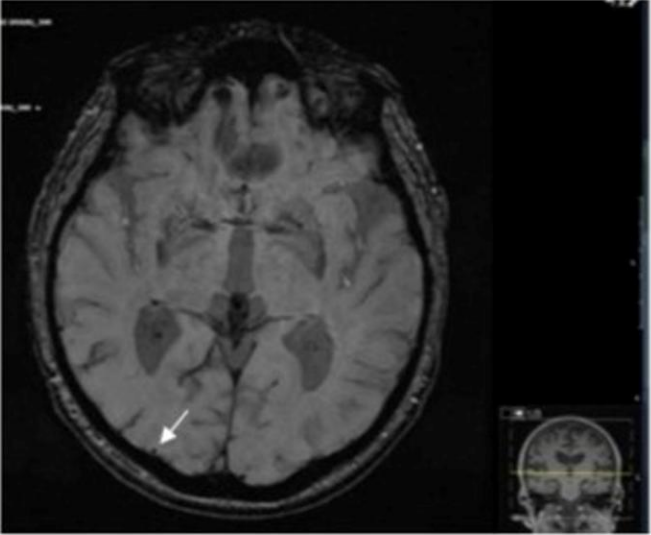
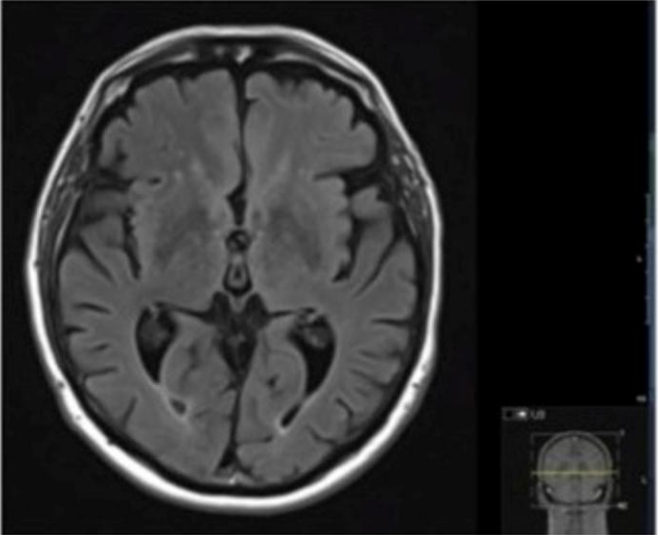
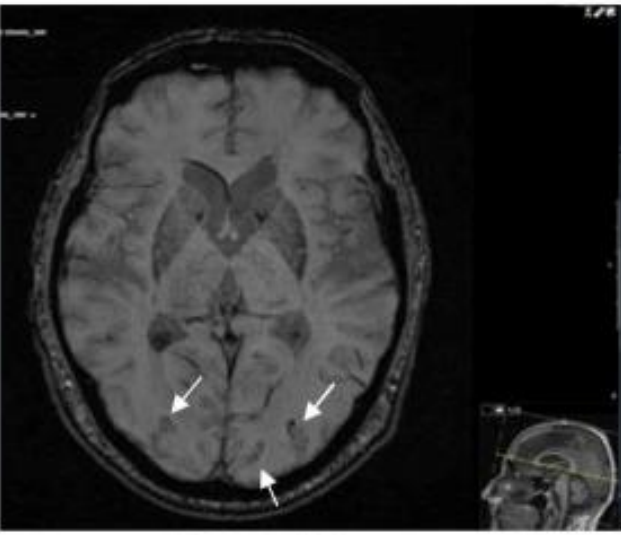
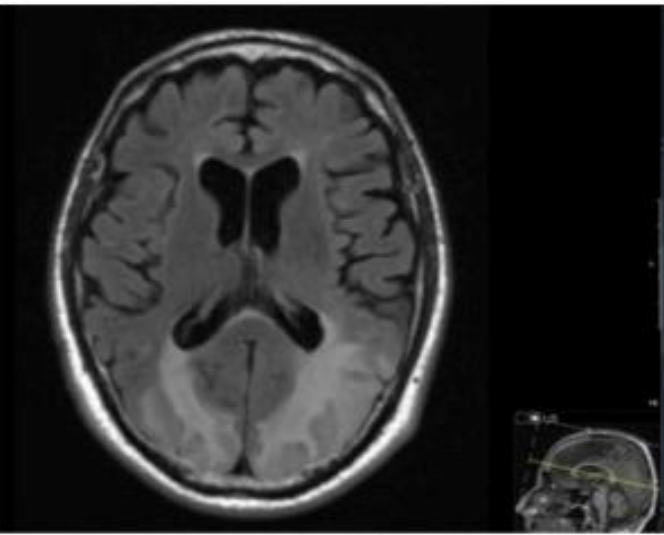
⁴University Hospitals Specialty Pharmacy

KEY TAKEAWAYS:

Vision disturbances are a known side effect of amyloid-targeting therapy

Two patients on amyloid-targeting therapy experienced transient photopsia during the course of treatment associated with occipital ARIA

Careful clinical and MRI surveillance, and patient education is critical in ensuring safe administration of these therapies

INTRODUCTION	CASE 1 (contd.)	CASE 2	DISCUSSION	REFERENCES
- Two anti-amyloid monoclonal antibodies – lecanemab and donanemab - have been FDA-approved for treatment of early Alzheimer’s disease (AD). - Commonly reported side effects include infusion-related reactions and amyloid-related imaging abnormalities (ARIA), which can be with edema (ARIA-E) or hemorrhage (ARIA-H). - Two case reports with similar unusual symptom of blue photopsia with contrasting MRI findings and clinical outcomes are presented.	✓ No new symptoms, and neurological examination was normal. ✓ After infusion #27, he reported seeing blue shadows and dots on the ground and trees that lasted for about an hour and spontaneously resolved ✓ MRI following this complaint did not show any new ARIA.  Case 1 FLAIR Case 1 SWI	78 year-old man with mild cognitive impairment due to AD, HTN and hyperlipidemia ✓ Baseline amyloid PET +ve (101.3 CL) ✓ ApoE: e2/e3 ✓ Started on donanemab infusions q4wks. After infusion #5, he reported seeing “blue-purple” flashing lights; he was also noted to be somewhat confused. He reported seeing blue light flashes again the next morning but was no longer confused. ✓ MRI brain showed new development of extensive ARIA-E as well as extensive gyriform ARIA-H in the parieto-occipital regions bilaterally ✓ Infusions were discontinued  Case 2 FLAIR Case 2 SWI	Photopsia is “the perception of light (luminous rays or flashes) that is purely subjective and accompanies a pathologic condition, especially of the retina or brain.” Causes: Mostly ophthalmic but may be central nervous system or systemic, like vertebrobasilar insufficiency, Charles Bonnet syndrome, migraine, hypoglycemia, and medication toxicity. Visual disturbances can occur during amyloid-targeting therapies but have not been described in detail. Most ARIA are asymptomatic and detected on routine MRI surveillance. ARIA can plausibly present with visual disturbances, especially with occipital involvement. Case #2 showed extensive ARIA-E and ARIA-H, including occipital regions, while case #1 had a previous right occipital microhemorrhage, although not coinciding with the occurrence of photopsia.	- Cummings J et al. Lecanemab: Appropriate use recommendations. <i>J Prev Alzheimers Dis.</i> 2023;10(3):362-377 - Jack CR Jr et al. Revised criteria for diagnosis and staging of Alzheimer’s disease: Alzheimer’s Association Workgroup. <i>Alzheimer’s Dement.</i> 2024 Aug;20(8):5143-5169 - Ramanan VK et al. Anti-amyloid Monoclonal Antibody Therapy for Alzheimer Disease: Emerging Issues in Neurology. <i>Neurology.</i> 2023 Nov 7;101(19):842-852 - Sims JR et al. Donanemab in early symptomatic Alzheimer’s disease: The Trailblazer-ALZ2 randomized clinical trial. <i>JAMA.</i> 2023 Aug 8;330(6):512-527 - Van Dyck CH et al. Lecanemab in early Alzheimer’s disease. <i>N Engl J Med.</i> 2023 2023 Jan 5;388(1):9-21 - Rabinovici DG et al. Donanemab: Appropriate use recommendations. <i>J Prev Alzheimers Dis.</i> 2025; 2025 May;12(5):100150 - Brown GC, Brown MM, Fischer DH. Photopsias: A key to diagnosis. <i>Ophthalmology</i> 2015;122:2084-2094
CASE 1 76 year-old man with mild cognitive impairment (MCI) due to AD, hyperlipidemia and BPH ✓ Baseline amyloid PET +ve (149.8 CL) ✓ ApoE: e3/e4 ✓ Started on lecanemab infusions q2wks ✓ Following infusion #13, a new punctate focus of susceptibility artifact in right occipital gray-white matter junction was noted on MRI susceptibility-weighted imaging (SWI).	✓ Infusions were continued ✓ He experienced these symptoms two more times over the next few months, subsequent MRI scans did not show any new lesions.		CONCLUSION Patients receiving anti-amyloid therapy for Alzheimer’s disease need to be monitored carefully for development of side effects, including ARIA. New visual symptoms may occur due to ARIA and should be investigated promptly.	CONTACT Rajeet Shrestha MD Email: Rajeet.Shrestha@UHhospitals.org University Hospitals Cleveland Medical Center CASE WESTERN RESERVE UNIVERSITY IMPACT-AD Institute on Methods and Protocols for Advancement of Clinical Trials in AD/DR ALZHEIMER’S ASSOCIATION AAIC>26