

Addressing Unmet Needs For Patients with Wet AMD

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President & Chief Executive Officer

 **Eyecelerator**® October 17th 2024

ADVERUM
Preserving Sight for Life®



Forward-Looking Statements

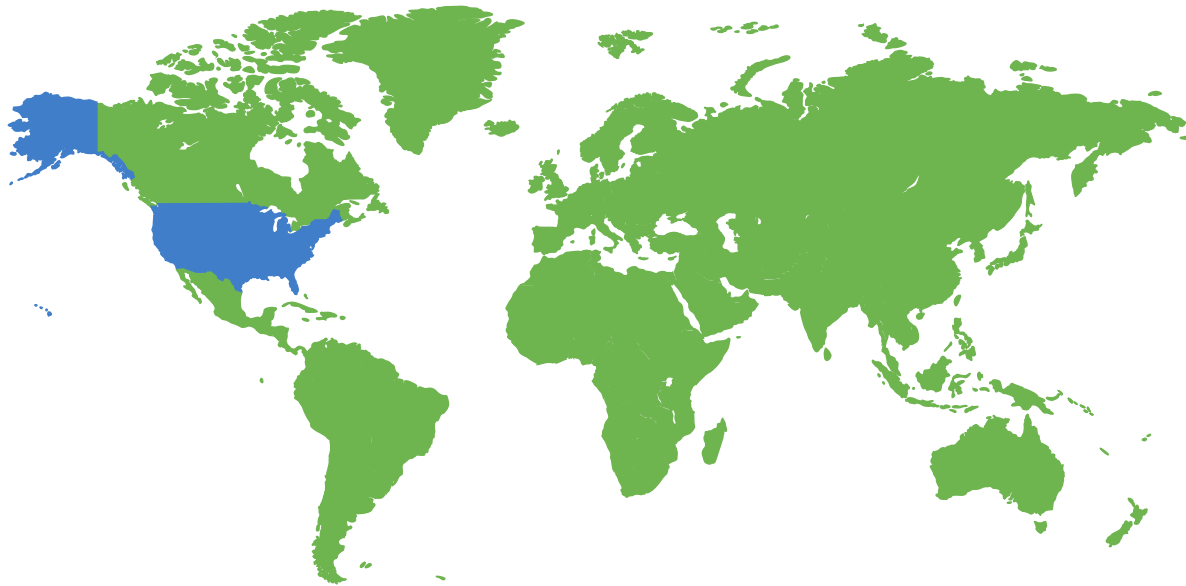
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1.5M patients U.S.^{1,2} **20M** worldwide.^{1,2}

~200,000 new cases every year.^{1,2}

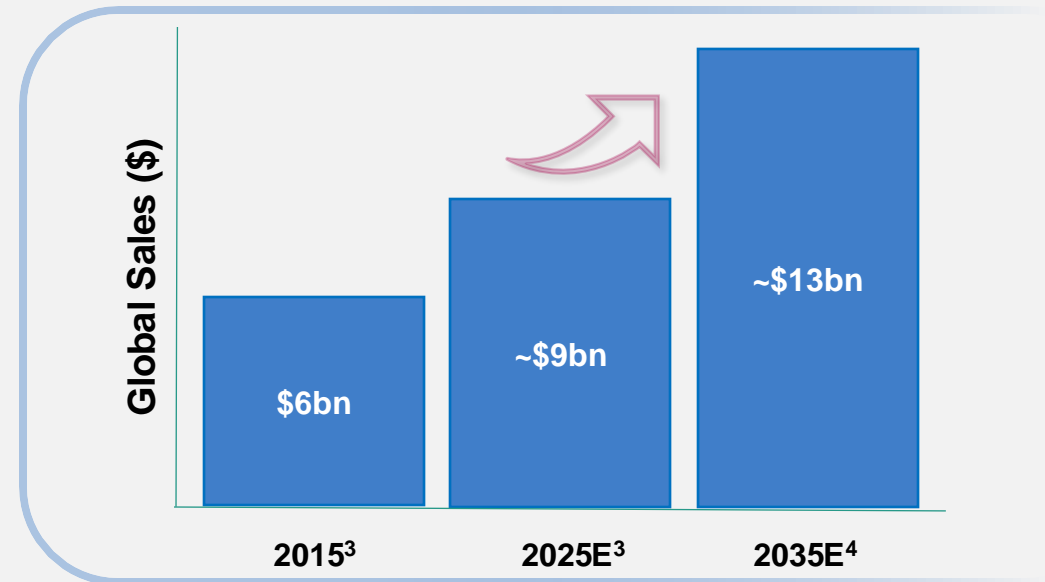


Up to 42% develop bilateral disease within 2-3 years of initial diagnosis⁵

**Wet AMD Global Market
Expected to Grow to \$13bn by 2035⁴**

Wet AMD Global Market Opportunity

Market growth driven by aging population and product innovation



1% market share ~ \$260M to \$440M

(assuming 3-5-year benefit of gene therapy)

Current therapies for wet AMD require **frequent intravitreal injections** that are burdensome to patients and caregivers, impacting treatment compliance and clinical outcomes

Therapies with **greater durability** continue to be top of mind for physicians as significant unmet need

Patient Adherence Can Be Limited By^{1,2}



Needle Anxiety



Financial Hardship



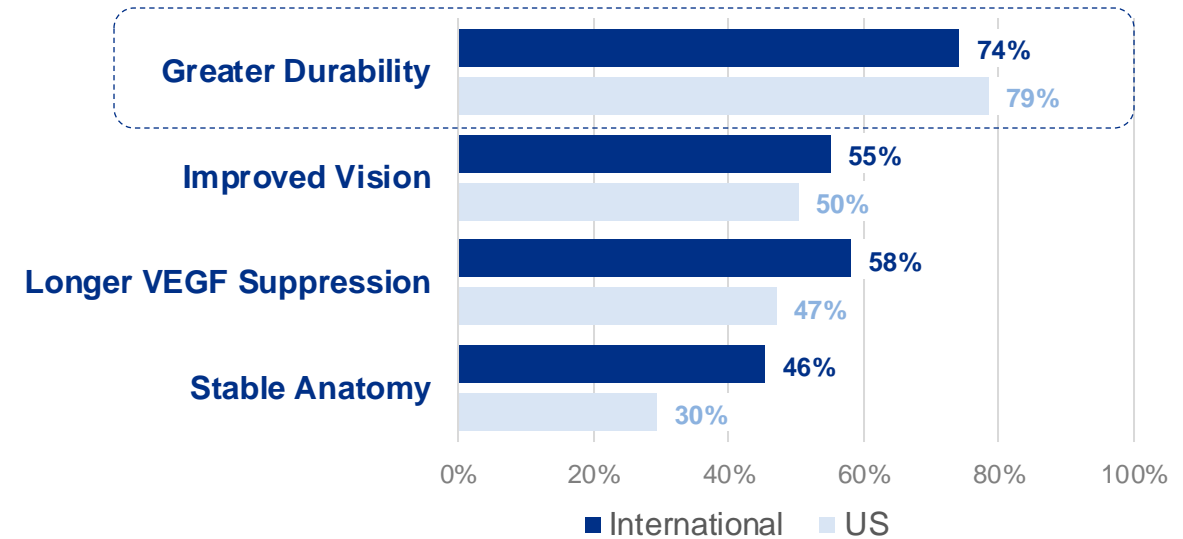
Scheduling Conflicts



Lack of Transportation

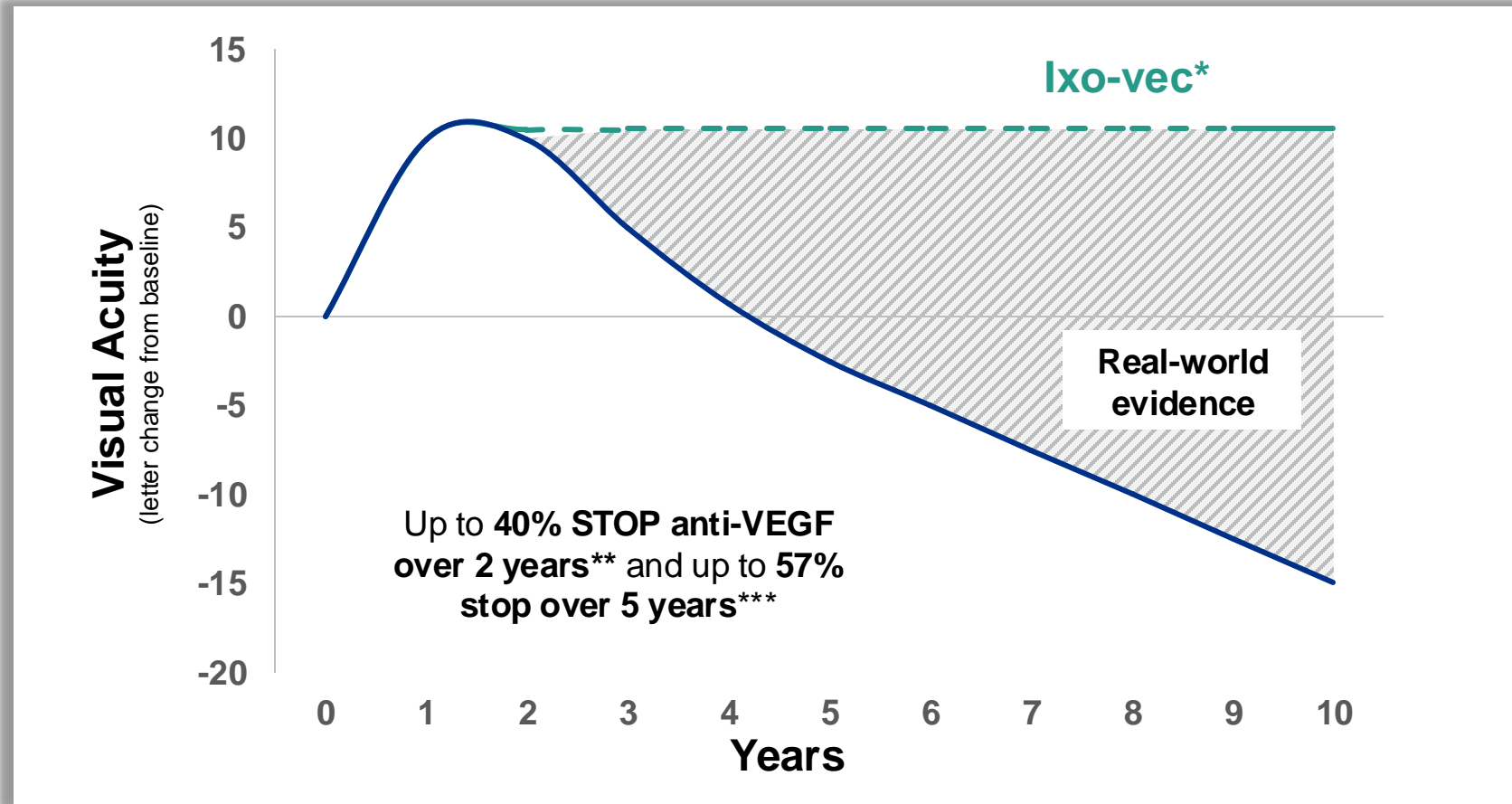


Physician Survey: Greatest Unmet Needs In Treating Wet AMD And DME³



Sources: ¹Hussain RM, Shaikat BA, Ciulla LM, Berrocal AM, Sridhar J. Vascular Endothelial Growth Factor Antagonists: Promising Players in the Treatment of Neovascular Age-Related Macular Degeneration. *Drug Des Devel Ther.* 2021 Jun 21;15:2653-2665. doi: 10.2147/DDDT.S295223. PMID: 34188445; PMCID: PMC8232378., ²Polat O, Inan S, Özcan S, Doğan M, Küsbeci T, Yavaş GF, Inan ÜÜ. Factors Affecting Compliance to Intravitreal Anti-Vascular Endothelial Growth Factor Therapy in Patients with Age-Related Macular Degeneration. *Turk J Ophthalmol.* 2017 Aug;47(4):205-210. doi: 10.4274/tjo.28003. Epub 2017 Aug 15. PMID: 28845324; PMCID: PMC5563548., ³ASRS 2023 Preferences and Trends Survey.

Illustrative Long-Term Vision Outcome

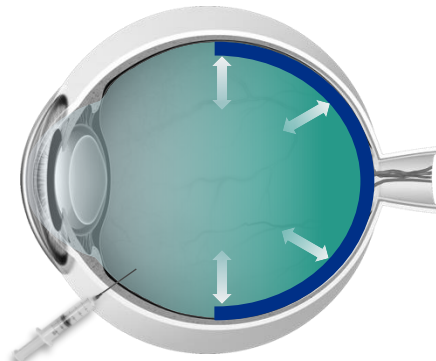


SoC curve is based on CATT, HARBOR, and 7UP extension out to 5 years, with years 5-10 modeled. Sources: Weng CY, Singh RP, Gillies MC, Regillo CD. Optimizing Visual Outcomes in Patients With Neovascular Age-Related Macular Degeneration: the Potential Value of Sustained Anti-VEGF Therapy. *Ophthalmic Surg Lasers Imaging Retina*. 2023 Nov;54(11):654-659. *Potential Ixo-vec curve illustrated based on OPTIC results Khanani et al. *Lancet eClinical Medicine -- THE LANCET Discovery Science* 2024. **Wykoff CC, Garmo V, Tabano D, et al. Impact of Anti-VEGF Treatment and Patient Characteristics on Vision Outcomes in Neovascular Age-related Macular Degeneration: Up to 6-Year Analysis of the AAO IRIS® Registry. *Ophthalmol Sci*. 2023;4(2):100421. ***Boulanger-Scemama E, et al. Ranibizumab for exudative age-related macular degeneration: A five year study of adherence to follow-up in a real-life setting. *J Fr Ophthalmol*. 2015;38:620-7.

Codon optimized aflibercept-encoding AAV2.7m8 vector engineered via directed evolution to enhance retinal transduction



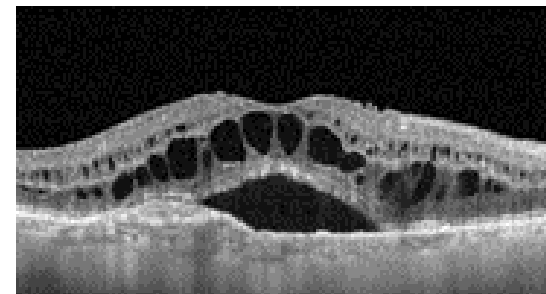
A one-time Ixo-vec IVT injection transduces retinal cells to become a biofactory continually producing aflibercept



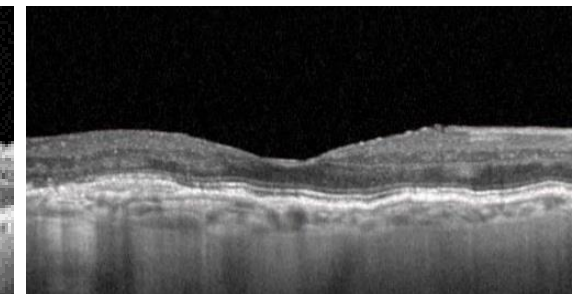
IVT injection of Ixo-vec

115 participants dosed with Ixo-vec across 3 clinical trials with up to 5 years of follow-up

nAMD OPTIC 2E10 Participant with No Supplemental anti-VEGF Injections through 3 Years³



Baseline
BCVA (ETDRS): 75



Year 3
BCVA (ETDRS): 80

Primary Objective

Long-term safety and efficacy of Ixo-vec IVT in treatment experienced patients

Secondary Objectives

- Vision maintenance (BCVA)
- Anatomy (SD-OCT)
- Need for supplemental therapy



	Ixo-vec Dose	Corticosteroid Prophylaxis	Extension Scheduled Visits	Supplemental Aflibercept (2 mg IVT) Criteria:
Cohort 1 (n=6)	6E11	Oral*, 13d	Quarterly assessments following completion of 2-year OPTIC parent study	<ul style="list-style-type: none"> • ≥ 10 letters BCVA (ETDRS) loss m baseline OR, • CST >75 μm increase from baseline OR, • New Vision-threatening hemorrhage due to AMD • After initial supplemental injection subsequent injections administered at investigator discretion
Cohort 2 (n=6)	2E11	Oral*, 13d		
Cohort 3 (n=9)	2E11	Eye Drops**, 6 wks		
Cohort 4 (n=9)	6E11	Eye Drops**, 6 wks		

Study timelines not to scale. *Participants in Cohorts 1 and 2 received prophylaxis of 60 mg oral prednisone for 6 days starting at Day -3 followed by 7-day taper; participants in Cohorts 3 and 4 received prophylaxis of QID difluprednate eye drops for 3 weeks starting at Day 1 followed by a 3-week taper. AAV, adeno-associated virus; AMD, age-related macular degeneration; BCVA, best corrected visual acuity; CST, central subfield thickness; IRF, intraretinal fluid; SRF, subretinal fluid; ETDRS, Early Treatment Diabetic Retinopathy Study; IVT, intravitreal therapy; QID, four times daily; SD-OCT, spectral domain optical coherence tomography; OPTIC: NCT03748784; OPTIC EXT: NCT04645212.

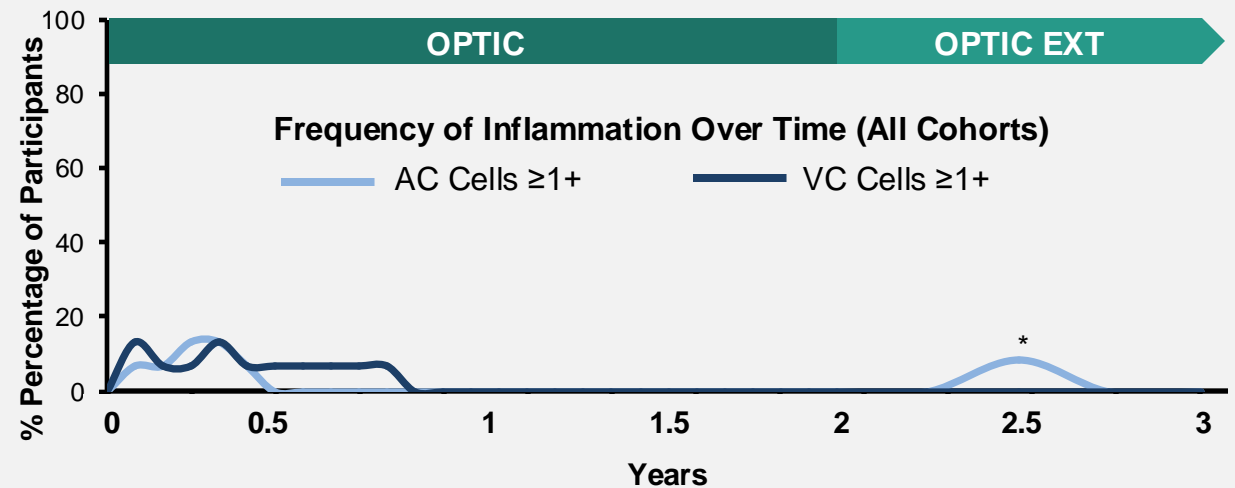
Baseline Characteristics	Cohort 1: 6E11 OPTIC (N=6) OPTIC EXT (N=4)	Cohort 2: 2E11 OPTIC (N=6) OPTIC EXT (N=4)	Cohort 3: 2E11 OPTIC (N=9) OPTIC EXT (N=8)	Cohort 4: 6E11 OPTIC (N=9) OPTIC EXT (N=7)
Mean (range) Age, Years	79.0 (62–88)	79.8 (74–90)	77.4 (65–90)	79.9 (68–88)
Mean (range) Years Since nAMD Diagnosis	4.5 (0.9–10.6)	4.1 (0.5–6.8)	3.3 (0.7–8.0)	3.3 (0.2–8.0)
Mean (range) Number anti-VEGF Injections Since Initial Diagnosis*	38.2 (7–109)	34.0 (4–69)	24.8 (9–70)	28.5 (2–58)
Mean (range) Annualized anti-VEGF Injections Prior to Ixo-vec	9.7 (8.4–11.2)	10.5 (8.5–11.7)	9.6 (7.9–12.8)	9.9 (6.3–13)
Mean (range) BCVA, ETDRS Letters Approximate Snellen Equivalent	65.8 (57–77) 20/50	64.7 (53–72) 20/50	65.9 (53–75) 20/50	65.0 (54–77) 20/50
Mean (range) CST, μm	369.2 (293–561)	307.7 (235–339)	473.4 (301–857)	398.6 (255–538)
Participant Status				
Follow-up (Years)	4–5 (median 4.5)	4 (median 4.0)	3–4 (median 3.7)	3 (median 3.0)

OPTIC 2E11 vg/eye Dose

- 2E11 was generally well tolerated through 3 years of follow-up
- Inflammation was dose-dependent, did not impact vision and, when present, was responsive to local corticosteroids
- **14 of 15 (93%) inflammation free at Year 1 and 100% at Year 2**
- **Long-term safety data** (published out to 3Y) with **10-fold safety margin from highest dose tested in nAMD**

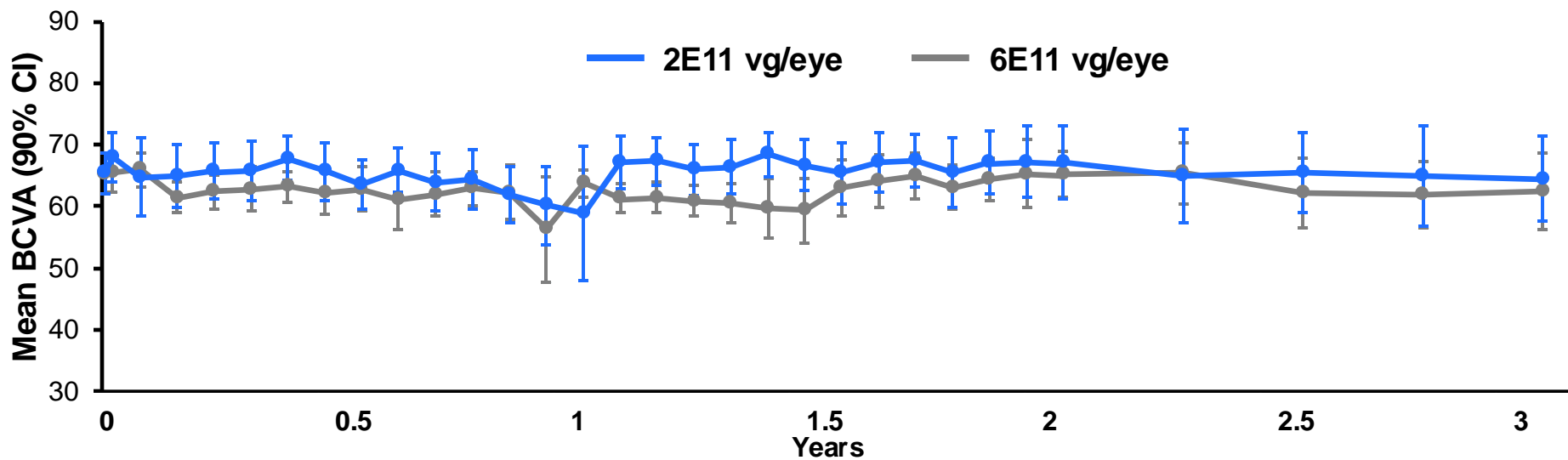
Frequency of Inflammation Decreased Over Time

2E11 vg/eye



Insufficient prophylaxis in OPTIC

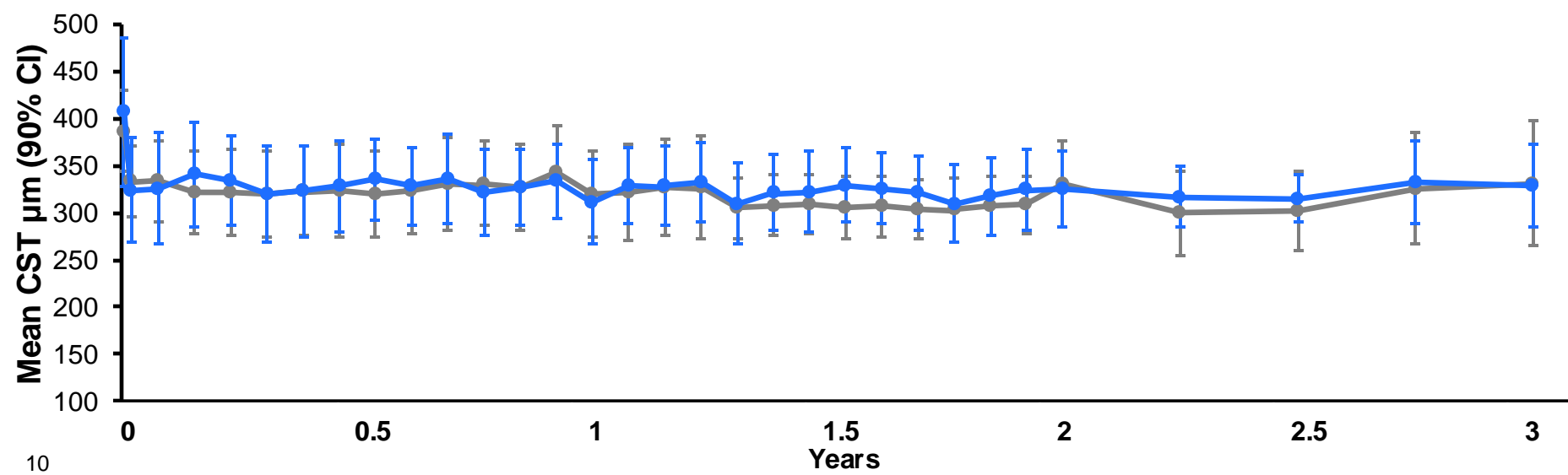
13 days oral prednisone or 6 weeks of topical drops



Mean BCVA (letters) change from baseline to last visit (90% CI)

-1.6 (-7.1, 3.9)
2E11 vg/eye

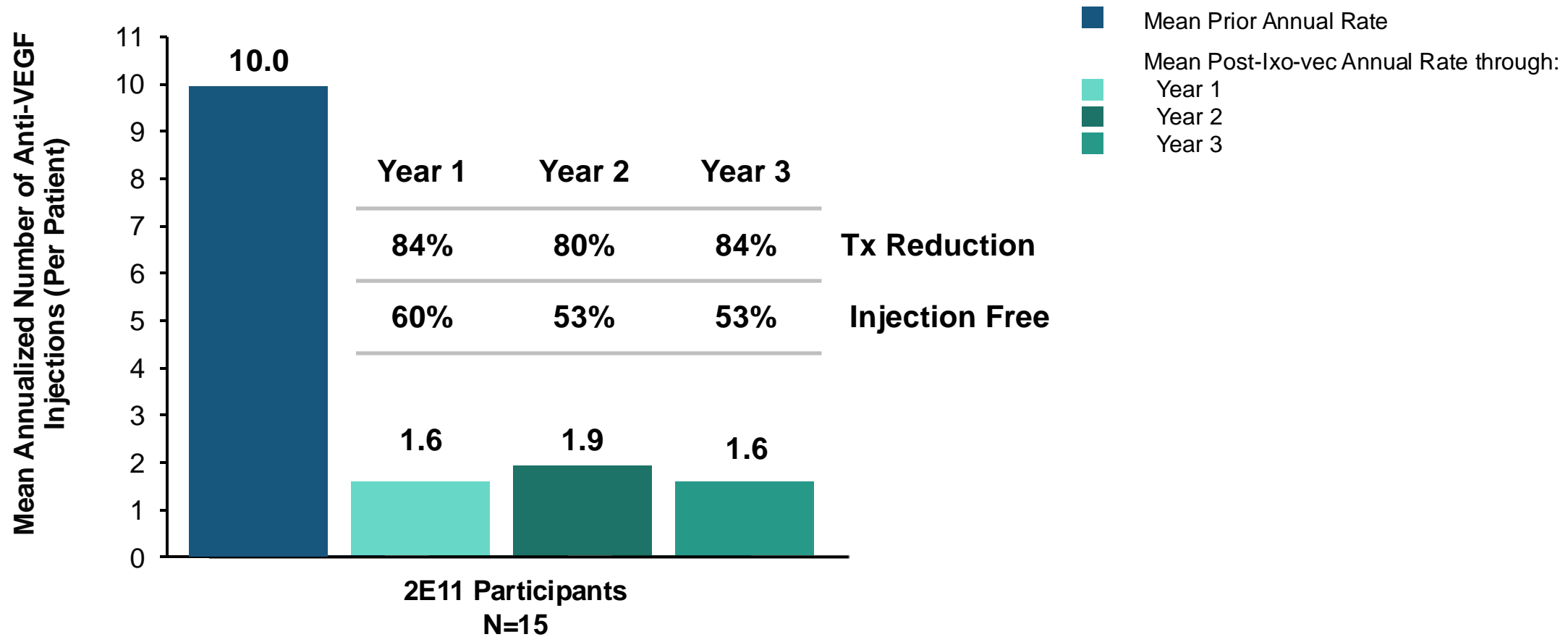
-2.4 (-6.4, 1.6)
6E11 vg/eye



Mean CST (µm) change from baseline to last visit (90% CI)

-64.9 (-105.5, -24.2)
6E11 vg/eye

-89.7 (-164.0, -15.5)
2E11 vg/eye



Impact of macular fluid volume fluctuations on visual acuity during anti-VEGF therapy in eyes with nAMD

Usha Chakravarthy¹ · Moshe Havilio² · Annie Syntosi³ · Natasha Pillai⁴ · Emily Wilkes⁵ · Gidi Benyamini² · Catherine Best³ · Alexandros Sagkriotis³

Central retinal thickness fluctuations in patients treated with anti-VEGF for neovascular age related macular degeneration

Francesco Ciucci¹, Giuseppina Ioele², Antonio Bardocci¹, Giorgio Lofoco¹, Barbara Antonelli¹, Cristiano De Gaetano¹, Gabriele Polimanti¹, Michele De Luca², Gaetano Ragno² and Roberto Gattegna³

JAMA Ophthalmology | Original Investigation

Associations of Variation in Retinal Thickness With Visual Acuity and Anatomic Outcomes in Eyes With Neovascular Age-Related Macular Degeneration Lesions Treated With Anti-Vascular Endothelial Growth Factor Agents

Rebecca N. Evans, MSc; Barnaby C. Reeves, DPhil; Maureen G. Maguire, PhD; Daniel F. Martin, MD; Alyson Muldrew, PhD; Tunde Peto, MD, PhD; Chris Rogers, PhD; Usha Chakravarthy, MD, PhD

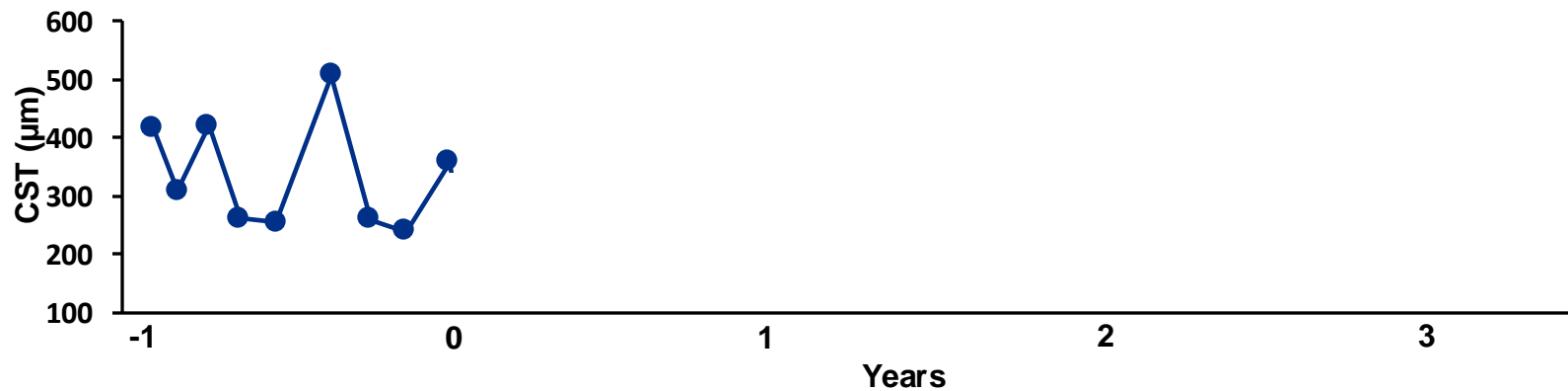


Fluctuations in Macular Thickness in Patients with Retinal Vein Occlusion Treated with Anti-Vascular Endothelial Growth Factor Agents

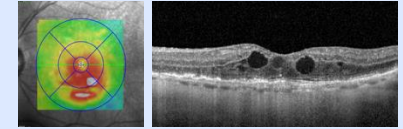
Andrew X. Chen, BSE,^{1,2} Tyler E. Greenlee, DO,² Thais F. Conti, MD,² Isaac N. Briskin, MA,² Rishi P. Singh, MD^{1,2}

90-Year-Old Female with 9 IVTs in the 12 Months Prior to Ixo-vec

Aflibercept Q5W prior to Ixo-vec

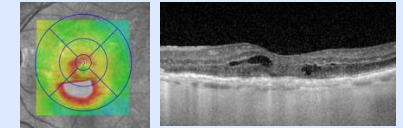


-56 weeks



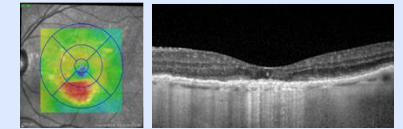
-2 wks (baseline)

BCVA: 53 letters
CST: 358 µm



Day 0

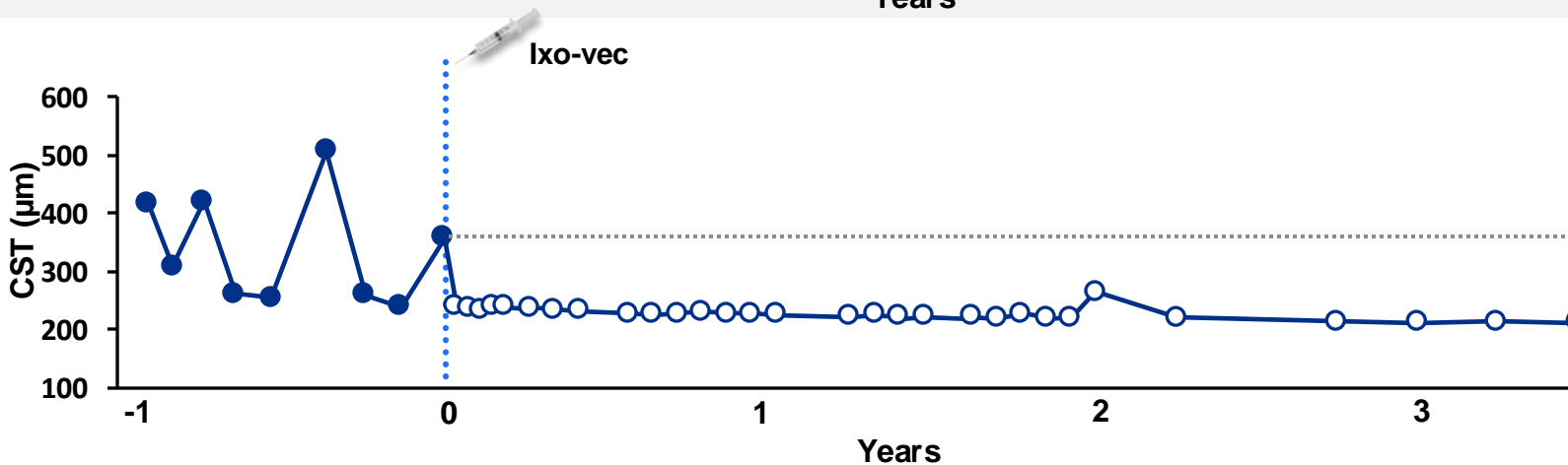
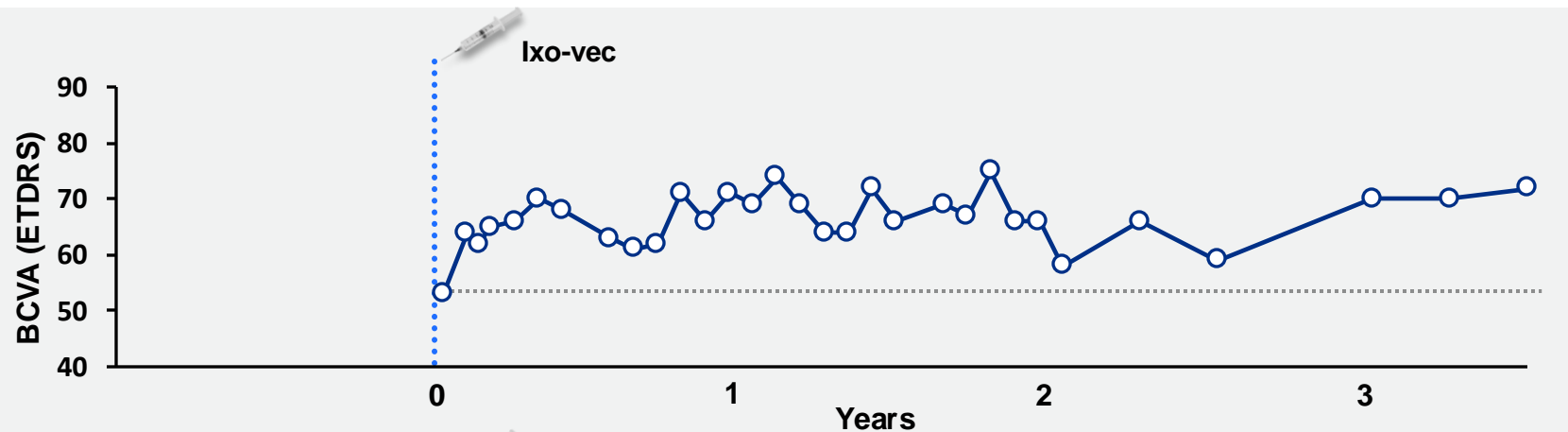
Ixo-vec
administration



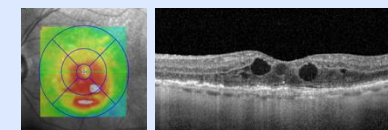
90-Year-Old Female with 9 IVTs in the 12 Months Prior to Ixo-vec

Aflibercept Q5W prior to Ixo-vec

100% anti-VEGF injection free following Ixo-vec

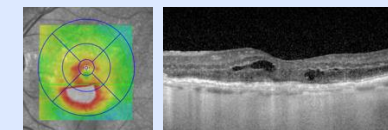


-56 weeks



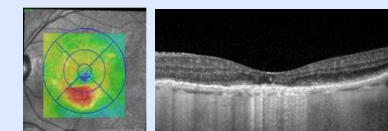
-2 wks (baseline)

BCVA: 53 letters
CST: 358 µm



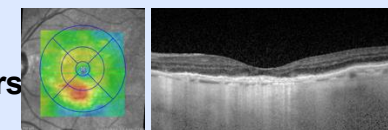
Day 0

Ixo-vec administration



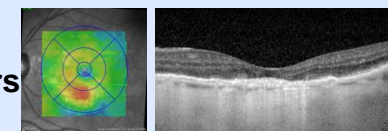
9 Months

BCVA Δ: +18 letters
CST Δ: -127 µm



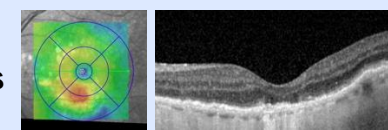
1 Year

BCVA Δ: +16 letters
CST Δ: -132 µm



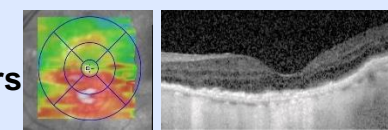
2 Years

BCVA Δ: +5 letters
CST Δ: -93 µm



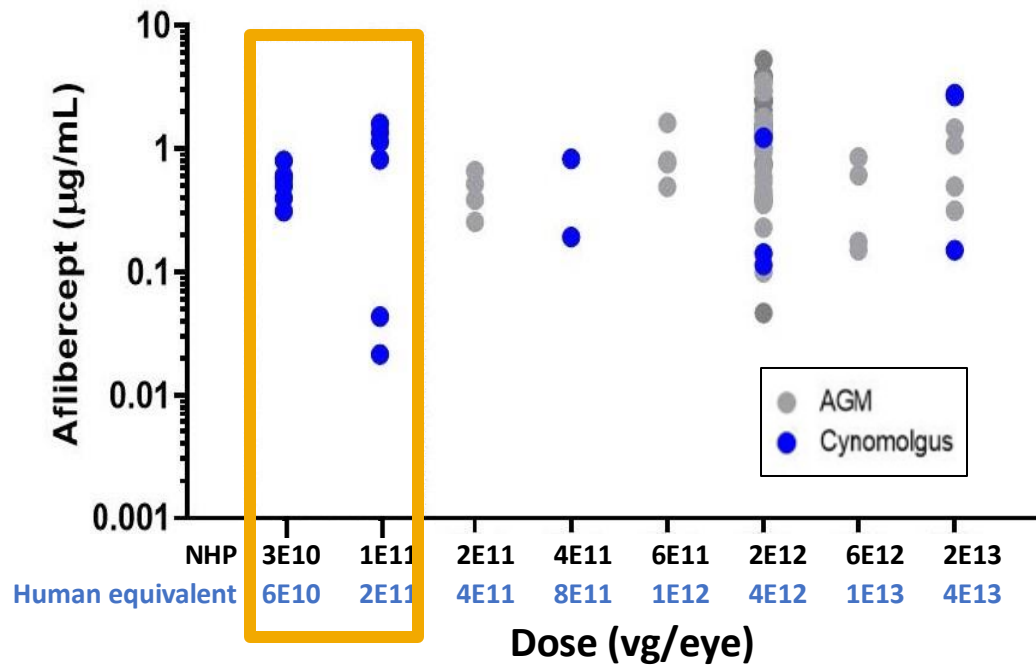
2.2 Years

BCVA Δ: +13 letters
CST Δ: -135 µm

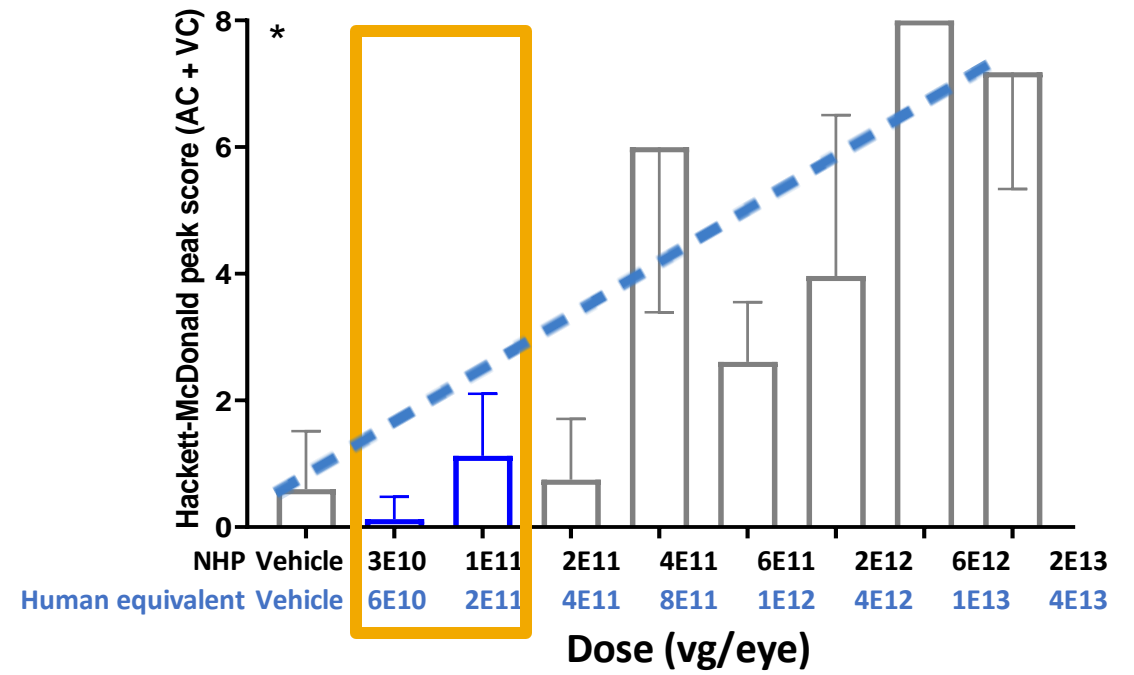


- NHP data demonstrate a flat dose response for aflibercept levels across 3 Logs
- NHP data shows improved IOI scores with lower doses (not prophylaxis)

Aqueous Humor Aflibercept Levels



Inflammation Scores



*Scale is cumulative of two parameters for maximum score of 8.

Human Equivalent Dose (HED) is approximately twice the corresponding NHP dose based on eye volume. E.g., 2E11 is the HED of 1E11 NHP dose.

NOAEL established at NHP dose of 1E11 vg/eye. LUNA clinical trial doses outlined in orange box.

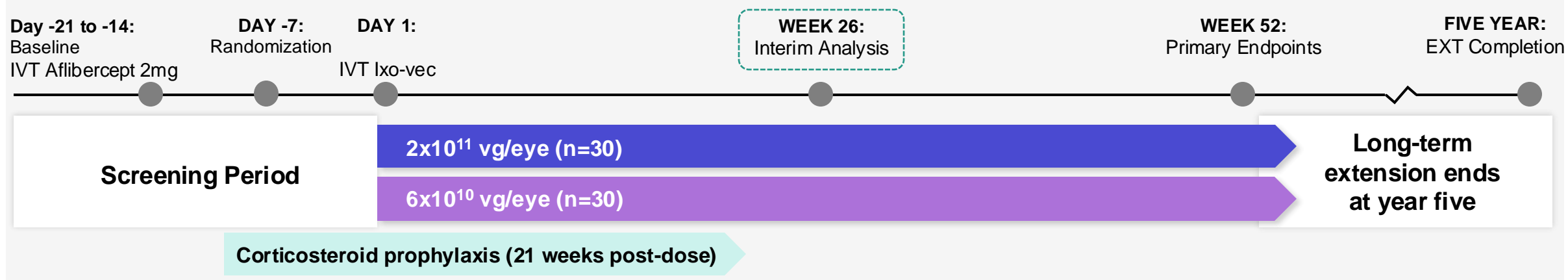
Schaefer-Swale K. Non-Clinical Data Support Efficacy and Tolerability of a Human Equivalent Dose of 6E10 vg/eye of ADV-022 for the Treatment of Neovascular Age-Related Macular Degeneration. Poster presented at ASGCT 2023



Multicenter, double-masked, randomized, parallel-group Phase 2 study

Key inclusion criteria:

- Responsive to anti-VEGF therapy; received a minimum of 2 injections for nAMD treatment
- Study eye BCVA (25 – 83 ETDRS letters)



Corticosteroid Prophylaxis

- Difluprednate 22 wks ± prednisone oral 10 wks
- Ozurdex IVT + difluprednate after week 4 ± prednisone oral 10 wks*
- Randomized 2:1 local versus local + oral

Supplemental Injection Criteria

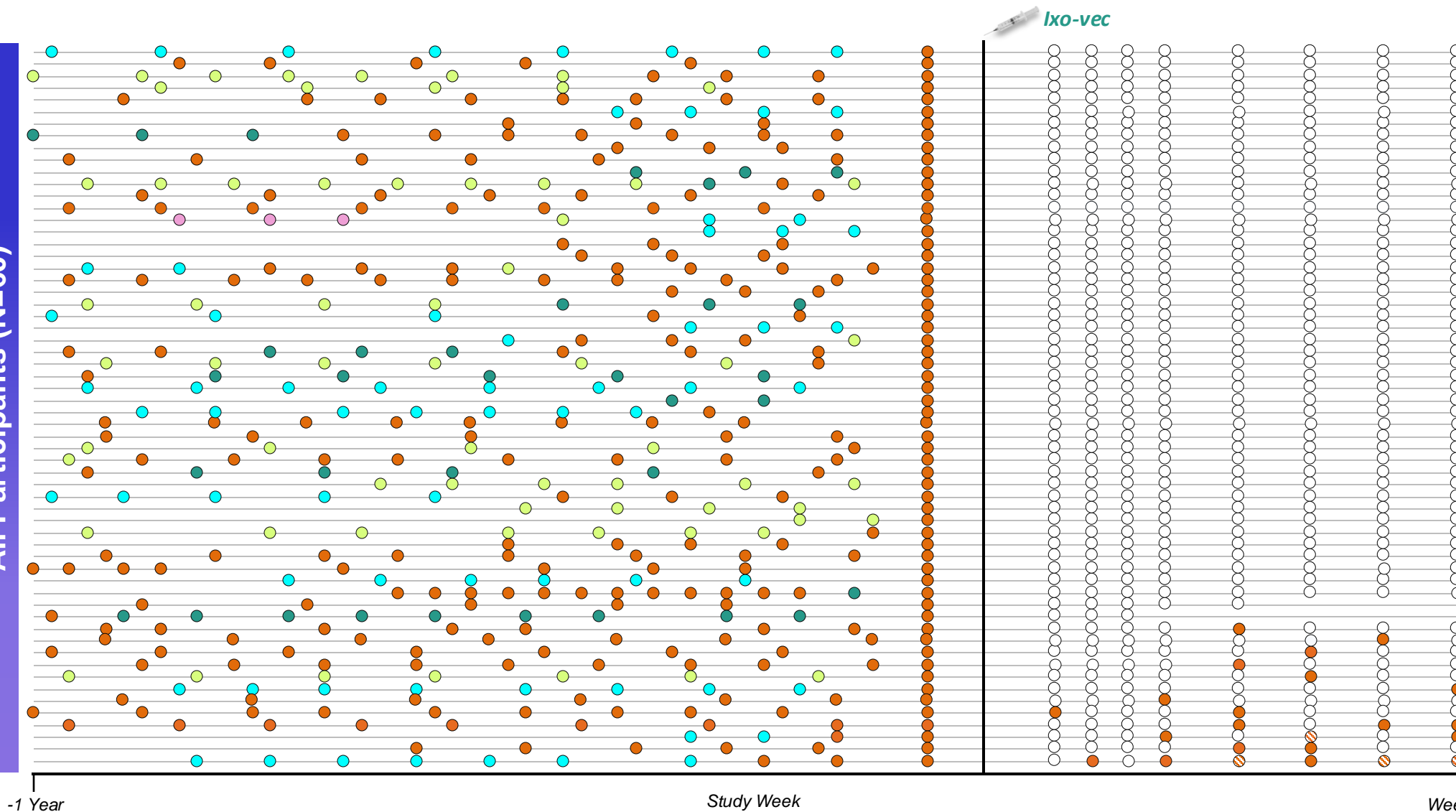
- Increase in CST > 75 μm from BL confirmed by the CRC **OR**
- Loss of ≥ 10 letters in BCVA from BL due to new/worsening IRF or SRF **OR**
- New vision-threatening hemorrhage due to nAMD



Demographics and Baseline Characteristics	LUNA 6E10 N = 30	LUNA 2E11 N = 30	LUNA Total N = 60	OPTIC Total N = 30
Mean age, years (SD)	75.4 (8.2)	77.7 (7.4)	76.6 (7.8)	79.0 (7.3)
Female, n (%)	16 (53%)	18 (60%)	34 (57%)	15 (50%)
Race, n (%)				
White	27 (90%)	28 (93%)	55 (92%)	30 (100%)
Asian	2 (7%)	2 (7%)	4 (7%)	0
Mean years since nAMD diagnosis in the study eye (SD)	3.0 (2.9)	3.0 (3.1)	3.0 (2.9)	3.7 (2.8)
Mean annualized anti-VEGF injections in year prior to Day 1 (SD)	10.2 (1.7)	10.0 (3.3)	10.1 (2.6)	9.9 (1.9)
Mean BCVA, ETDRS letters (SD)	72.9 (8.8)	71.8 (6.4)	72.3 (7.7)	65.4 (7.2)
Mean CST, μm (SD)	360.6 (112.0)	340.5 (119.3)	350.6 (115.2)	397.0 (137.3)
Phakic lens status, n (%)	11 (37%)	11 (37%)	22 (37%)	10 (33.3%)



All Participants (N=60)



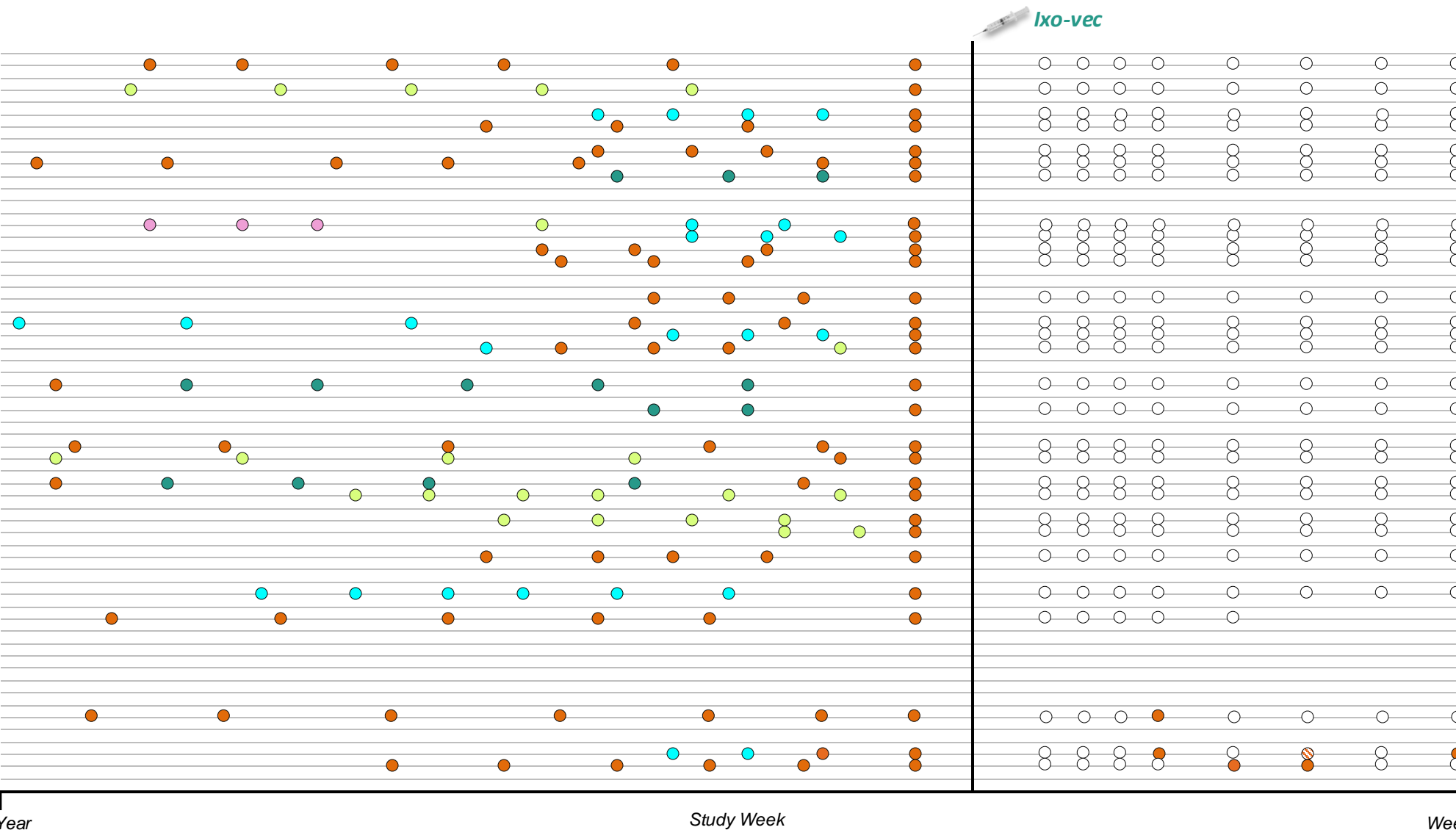
% Injection Free	
Overall	79%
6E10 vg/eye	76%
2E11 vg/eye	83%

7 Participants with 1 Injection
5 Participants with >1 Injection

-1 Year Study Week Week 26
● Afibercept ● Bevacizumab ● Ranibizumab ● Faricimab ● Other ○ No supplemental injection given ● Supplemental injection administered out of protocol



Participants w/ ≤ 6 Prior Injections (N=29)



% Injection Free	
Overall	90%
6E10 vg/eye	100%
2E11 vg/eye	82%

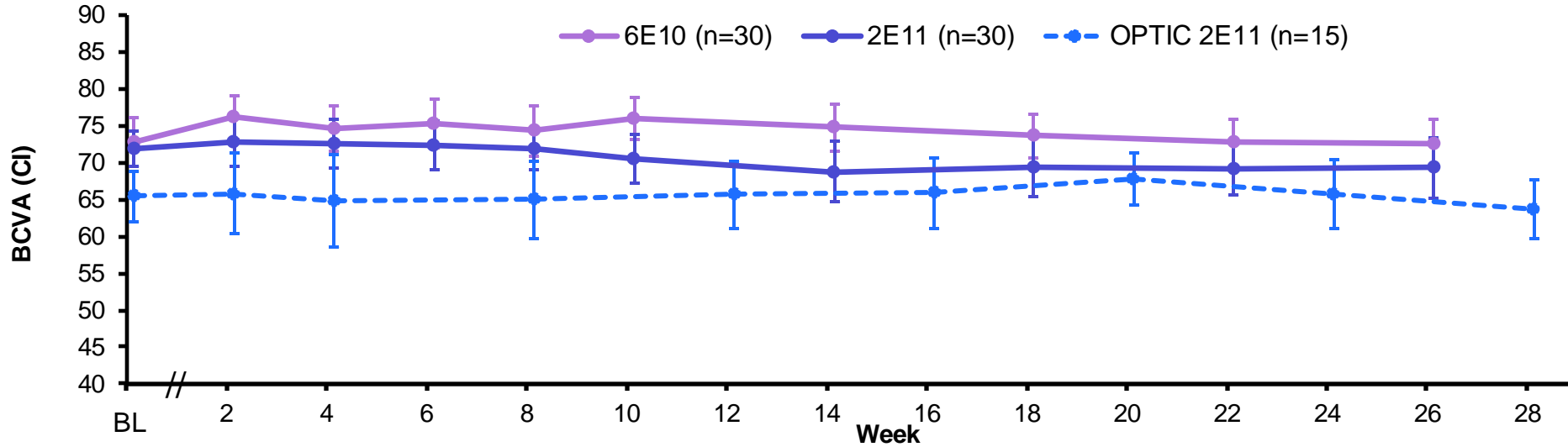
1 Participant with 1 Injection
2 Participants with >1 Injection

-1 Year Study Week Week 26
 ● Afibercept ● Bevacizumab ● Ranibizumab ● Faricimab ● Other ○ No supplemental injection given ● Supplemental injection administered out of protocol

19 Patients received up to 6 injections in the year prior to entering the LUNA study excluding the LUNA aflibercept screening dose: 4.3 mean actual injections in both 6E10 and 2E11 dose cohorts and 10.2 and 9.5 mean annualized injections in 6E10 and 2E11 dose cohorts, respectively; 6E10: N=12, 2E11: N=17. Doses pooled in swim lane plot to preserve investigator masking in an ongoing double masked study.



Mean Best Corrected Visual Acuity (BCVA) Over Time by Dose



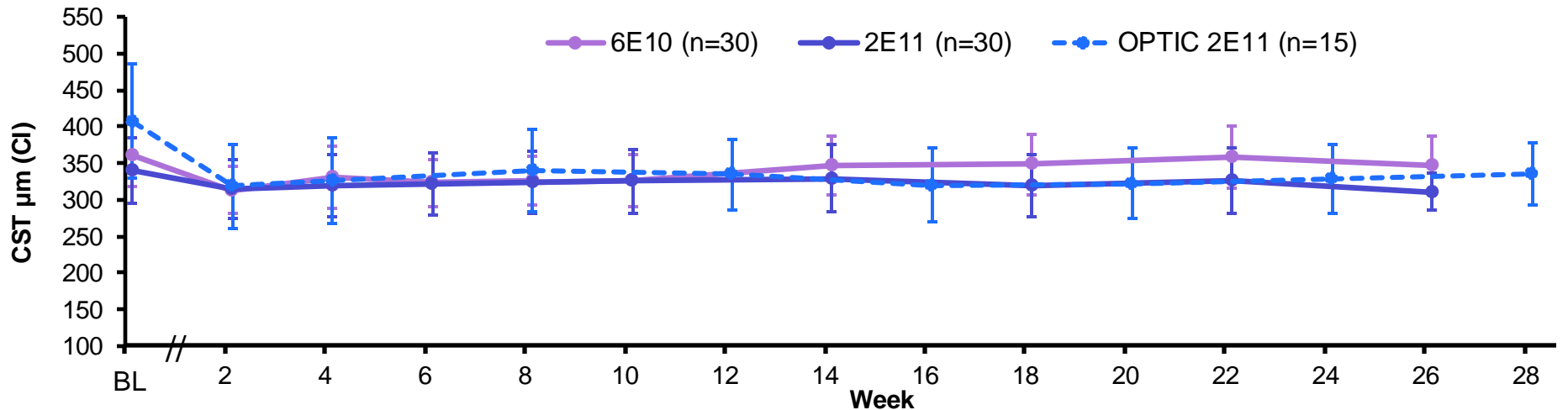
LS Means BCVA Change from Baseline at Week 26, letters (CI)

-1.1 (-3.5, 1.2)
6E10 vg/eye

-2.2 (-4.5, 0.2)
2E11 vg/eye

-1.8 (-5.8, 2.2)
2E11 vg/eye
OPTIC

Mean Central Subfield Thickness (CST) Over Time by Dose



LS Means CST Change from Baseline at Week 26, µm (CI)

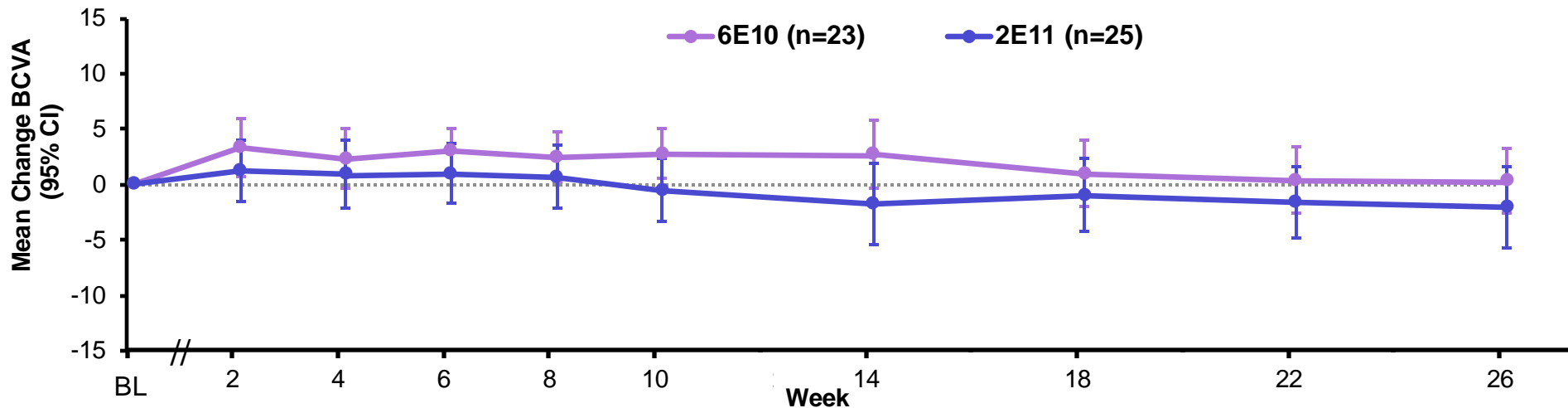
-12.6 (-30.2, 5.0)
6E10 vg/eye

-12.0 (-30.0, 6.0)
2E11 vg/eye

-71.1 (-130.8, -11.5)
2E11 vg/eye
OPTIC



Mean Change in BCVA Over Time in Supplemental Injection Free Participants, by Dose

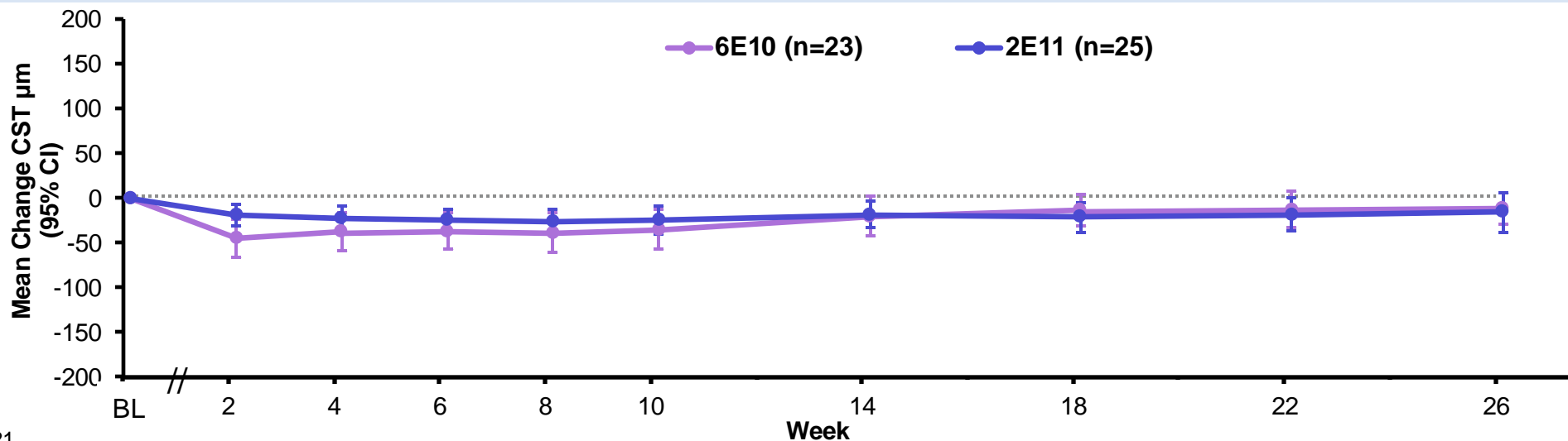


Mean BCVA Change from Baseline at Week 26, Letters (95% CI)

+0.3 (-2.6, 3.2)
6E10 vg/eye

-2.1 (-5.8, 1.6)
2E11 vg/eye

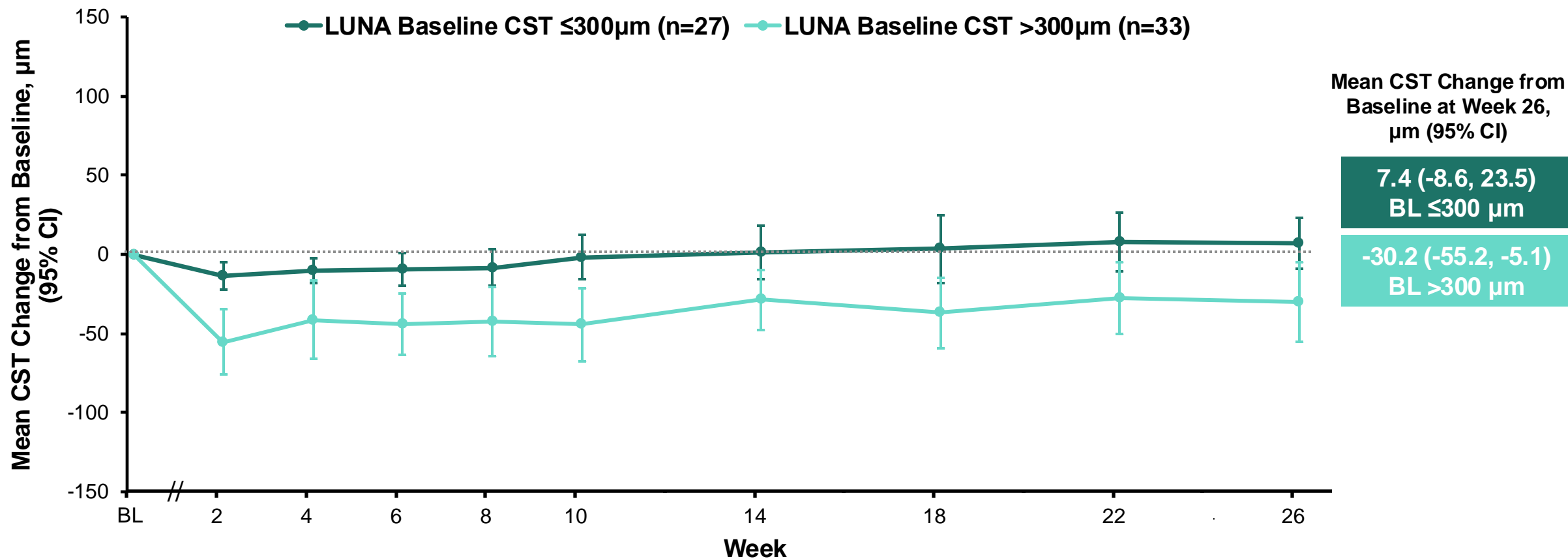
Mean Change in CST Over Time in Supplemental Injection Free Participants, by Dose



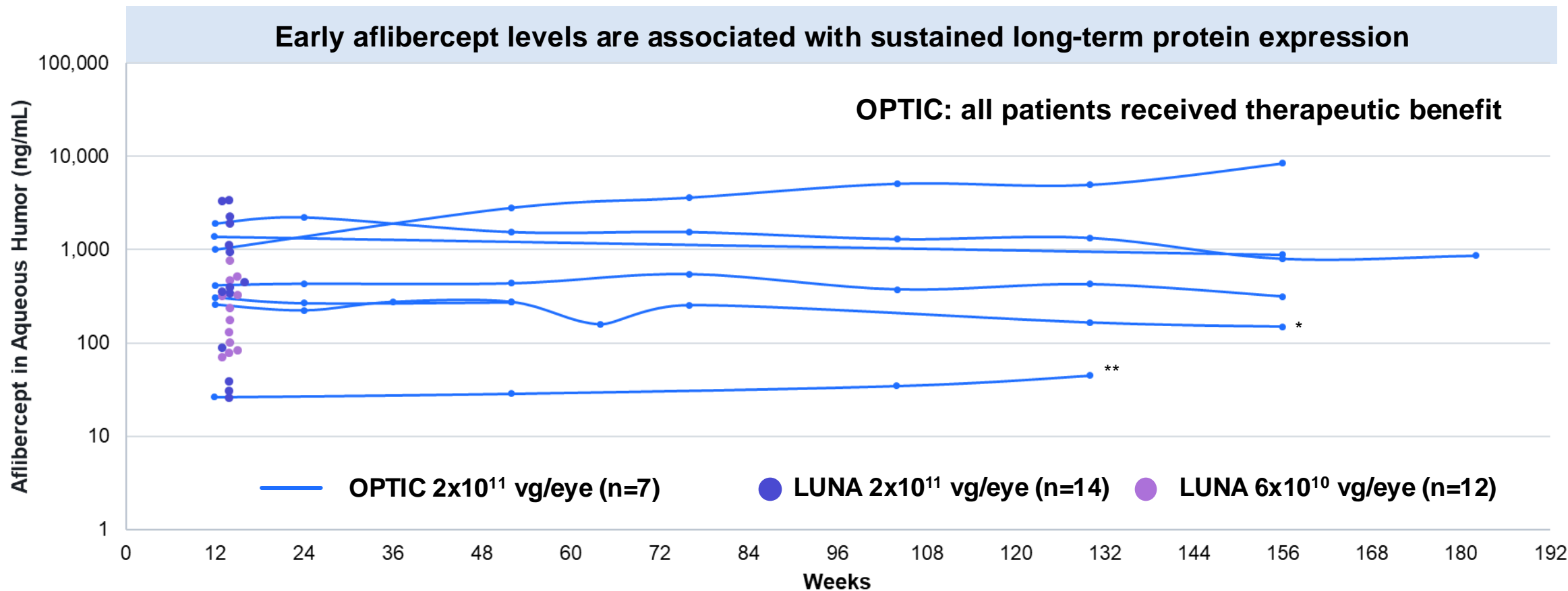
Mean CST Change from Baseline at Week 26, μm (95% CI)

-11.4 (-29.2, 6.4)
6E10 vg/eye

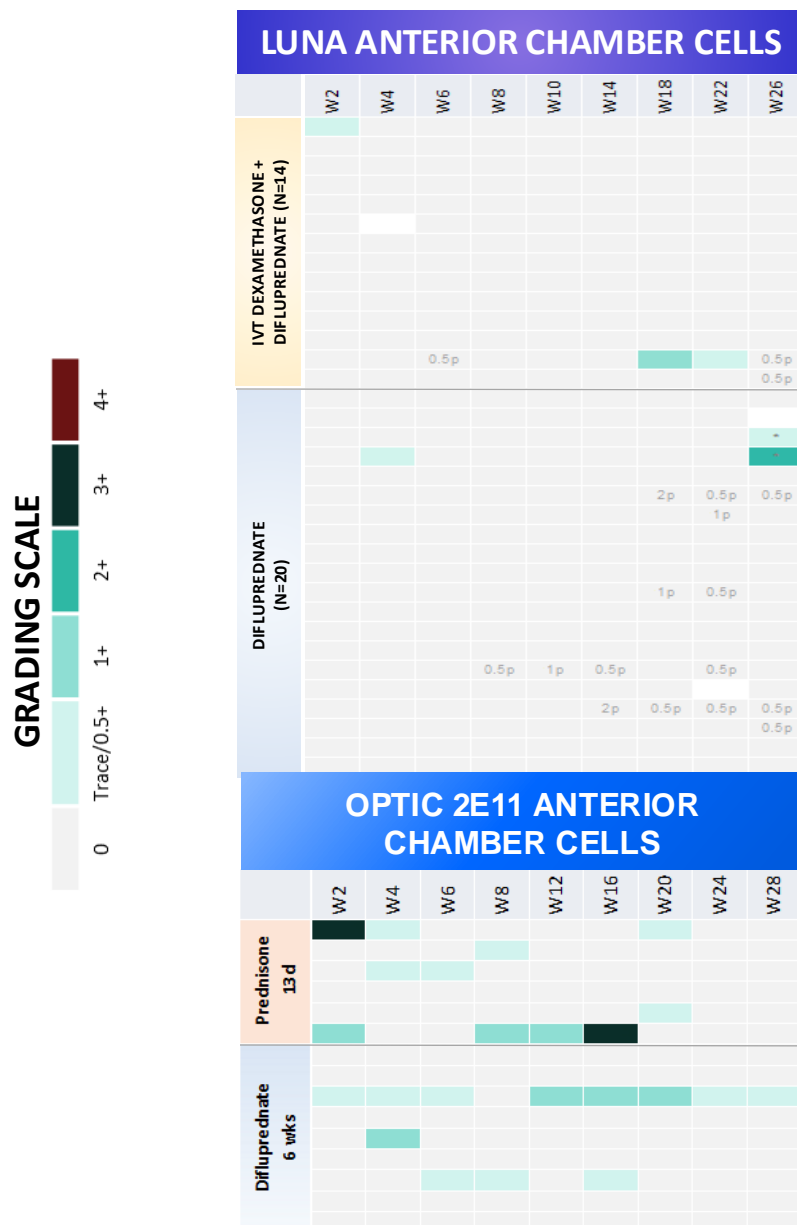
-15.9 (-38.4, 6.6)
2E11 vg/eye



Baseline Characteristic for Subgroup	CST $\leq 300\mu\text{m}$	CST $> 300\mu\text{m}$
Mean CST, μm (SD)	269.9 (18.7)	416.6 (119.1)



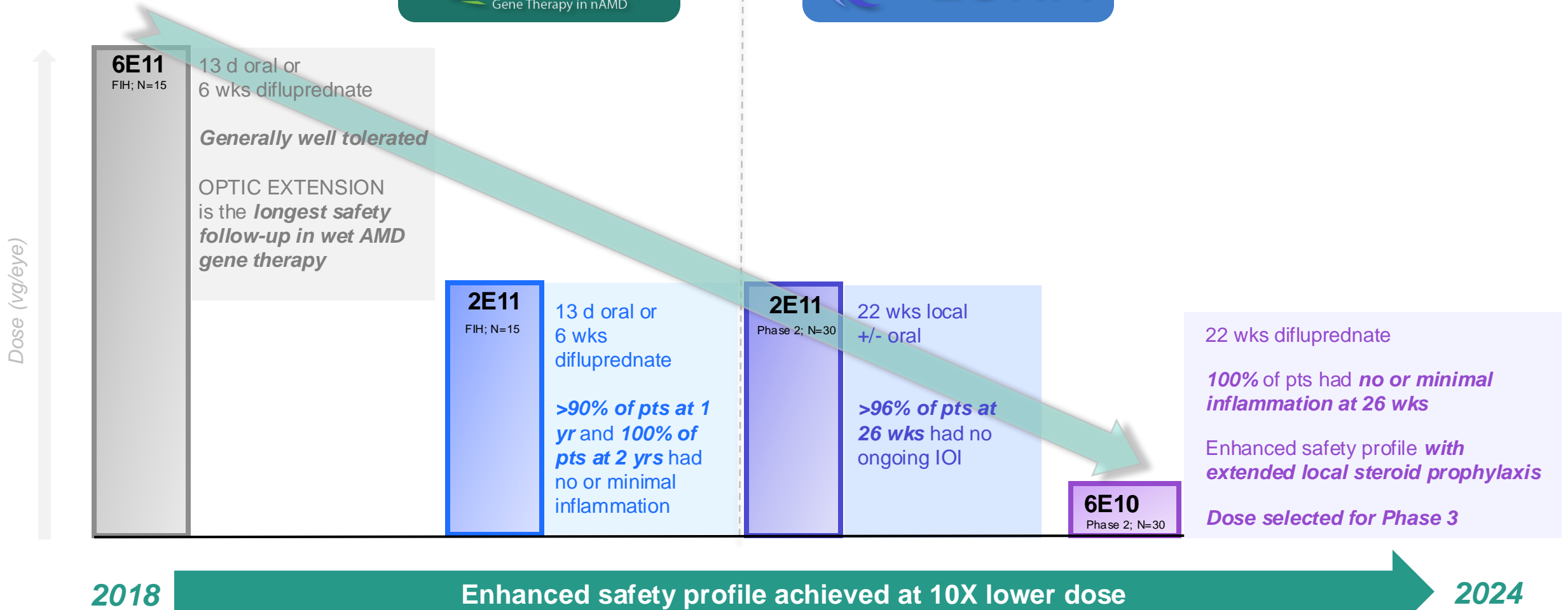
Data cuts: LUNA as of 15Nov2023, OPTIC as of 23Aug2023. LUNA Week 14 aflibercept levels plotted for 26 of 30 individual participants. 4 samples across both the 2E11 and 6E10 doses had aqueous aflibercept levels (ELISA assay BLQ: <25 ng/ml). Of these, 2 were free of injections and 2 had either 1 or 2 supplemental injections through at least week 26. LUNA revised to stop collection of AH samples. *Participant received supplemental aflibercept injections at weeks 36, 52, 64, 68, 76, 80, 88, 92, 100, 130, 143, 156. 58% reduction in annualized anti-VEGF injections 3 years post-Ixo-vec compared to 12 months prior to Ixo-vec. **Participant received supplemental aflibercept injections at weeks 24, 64, 72, 80, and 156. 81% reduction in annualized anti-VEGF injections 3 years post-Ixo-vec compared to 12 months prior to Ixo-vec. At three timepoints (not indicated on plot), aflibercept levels were BLQ.



LUNA vs OPTIC Comparison

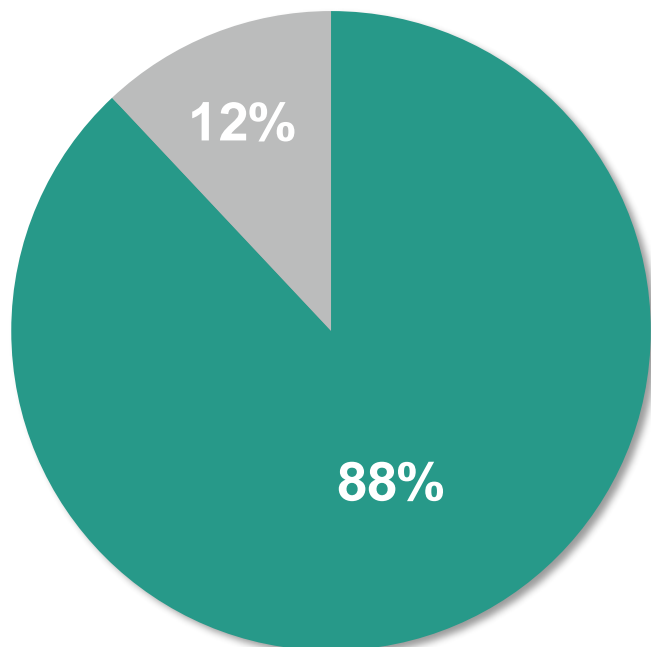
- In LUNA, an extended prophylaxis beyond OPTIC's 6-week topical regimen resulted in an improved inflammatory profile
- Local corticosteroid prophylaxis was effective in minimizing inflammation
 - 91% of participants had no or minimal inflammation (0 or trace/0.5+ AC cells) at any study visit through Week 26**
 - At Week 26, 0.5+ AC cells were present in 1 6E10 participant and 2+ in 1 2E11 participant

Doses pooled in heatmaps to preserve investigator masking in an ongoing double masked study. *Mixed pigmented and non-pigmented cells are graded with the same color scheme and scale as non-pigmented cells. p, pigmented cell. AC, anterior chamber. V, vitreous. Cell grades as assessed by slit lamp; grade categories are based on the Standardization of Uveitis Nomenclature (SUN) and National Eye Institute Scores for white blood cells. No participant in the displayed arms had more than 2+.



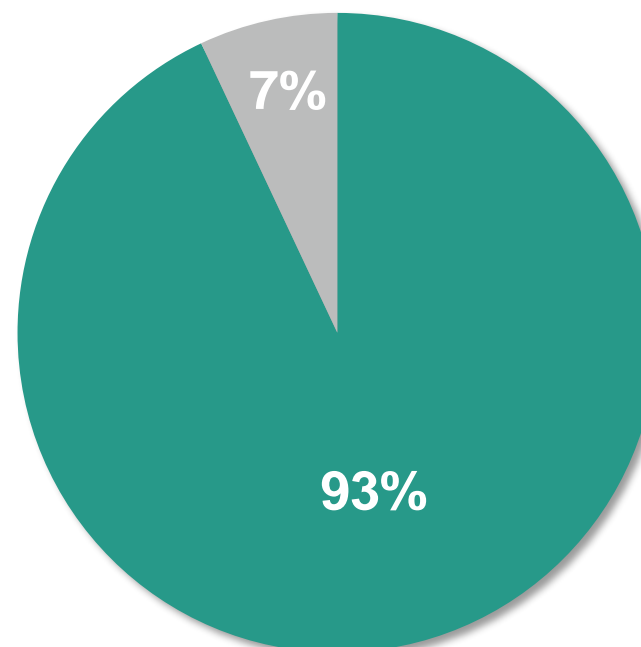


Would you prefer Ixo-vec therapy over the prior treatment(s) you received to treat your wet AMD?



N=57

Would you want to receive Ixo-vec therapy in your other eye if you had wet AMD in both eyes?



N=57

■ Yes ■ No

100% of 6E10 + Difluprednate Participants (N=10) Prefer Ixo-vec Over Standard of Care Anti-VEGF



Key Takeaways

- **Industry Leading Proportion of Patients Injection Free:** 76% of hard-to-treat patients injection free
- **Treatment Burden Reduction:** 90% reduction in annualized injections
- **Visual and Anatomic Endpoints:** maintained through 26 weeks
- **Improved Safety Profile Compared to OPTIC:** with lower dose and enhanced prophylactic regimen
 - OPTIC 2E11 favorable long-term safety profile: 14 of 15 (93%) inflammation free at Y1, 100% at Y2
- **Strong Patient Preference for Ixo-vec over Standard of Care**
- **6E10 Selected for Phase 3 with Local Prophylaxis:** 10x safety margin

Anticipated Milestones

- 4Q'24:** Continued Regulatory Interactions
- 4Q'24:** LUNA 52-Week Data, Including All Available Safety
- 4Q'24:** Phase 3 Pivotal Trial Design
- 1H'25:** Planned Phase 3 Start

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