

Virtual IR/KOL Event

August 10, 2020

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Virtual IR/KOL Event Agenda

Time	Presentation	Speaker
10-minutes	Welcome	Laurent Fischer, M.D. CEO, Adverum Biotechnologies
30-minutes	OPTIC Presentation INFINITY DME Clinical Trial Design	Arshad M. Khanani, M.D., M.A. Managing Partner and Director of Clinical Research, Sierra Eye Associates, and Clinical Associate Professor of Ophthalmology, University of Nevada; Principal Investigator in OPTIC and INFINITY Trials
30-minutes	Q&A	Laurent Fischer, M.D CEO Aaron Osborne, MBBS - CMO Leone Patterson - President Thomas Leung - CFO Arshad M. Khanani, M.D., M.A., PI
5-minutes	Closing remarks	Laurent Fischer, M.D.



Phase 1 Study of Intravitreal Gene Therapy with ADVM-022 for Neovascular Age-related Macular Degeneration (OPTIC Trial Cohorts 1-4)

Arshad M Khanani, M.D., M.A.

Director of Clinical Research, Sierra Eye Associates (on behalf of the OPTIC investigators)



Disclosures



- Grant Support: Adverum, Allergan, Chengdu Kanghong, Genentech, Gyroscope, Gemini Therapeutics, Kodiak, Novartis, Iveric Bio, Opthea, Oxurion, Recens Medical, Roche, Regenxbio
- Consultant: Adverum, Allergan, Bausch and Lomb, Chengdu Kanghong, Eyepoint Pharmaceuticals, Genentech, Gyroscope, Gemini Therapeutics, Kodiak, Novartis, Opthea, Oxurion, Recens Medical, Regenxbio
- Speaker: Allergan, Novartis

Key Takeaways for ADVM-022



- Continues to show robust treatment response
- Long-term durability beyond 15 months from single IVT injection with zero rescue injections in Cohort 1
- Further evidence of a dose response between the high and low doses
- Substantial reduction in annualized anti-VEGF injection frequency
- Continues to be well tolerated with a favorable safety profile in all 4 cohorts including encouraging early safety data from Cohort 4 using prophylactic steroid eye drops
- Warrants further investigation in larger studies

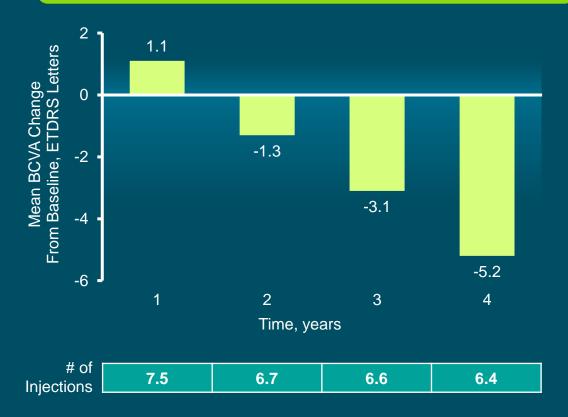
Real-world anti-VEGF Patient Outcomes



Under treatment leads to vision loss over time



Development Approach to Deliver Long-Term Efficacy



Gene Therapy

In-Office Intravitreal Injection to Establish an Intraocular anti-VEGF Biofactory

ADVM-022: Adeno-Associated Virus Gene Therapy Vector



Designed for continuous delivery of aflibercept by intravitreal injection



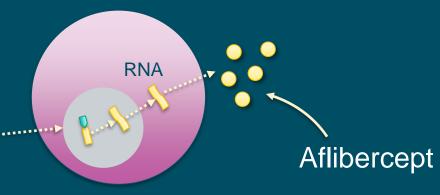
Capsid Engineered from Wild-Type AAV2 by Directed Evolution and Screened for Highly Efficient Retinal Transduction Following IVT Injection



Aflibercept

Aflibercept Expression Cassette

Strong, Ubiquitous Promoter Designed for Robust Protein Expression



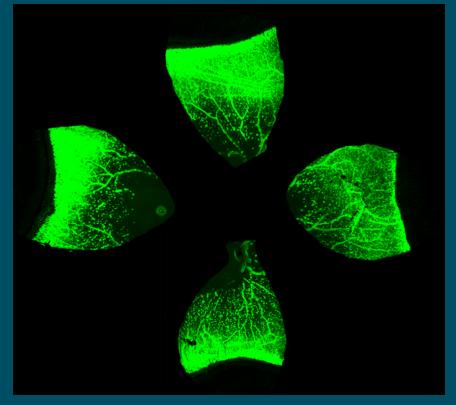
Target Retinal Cell Expresses Aflibercept

Codon-Optimized cDNA

Intravitreal Injection of AAV.7m8 Results in Robust Cellular Transduction and Protein Expression in the Eye



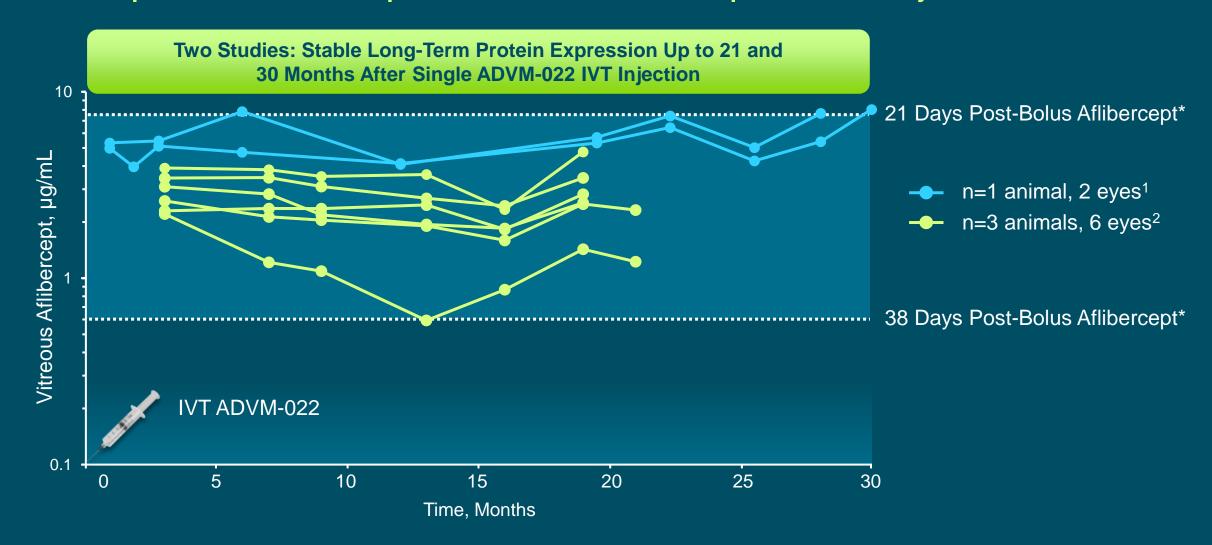
- Advanced AAV.7m8 vector developed using directed evolution to:
 - Enable efficient intravitreal delivery^{1,3}
 - Increase transduction of retinal cells^{1,3}
 - Increase protein expression¹
- Protein expression in NHPs:
 - Photoreceptors, ganglion cells¹⁻³
 - Bipolar cells, Müller cells, optic nerve²
 - Ciliary epithelium, iris pigment epithelium²



Green Fluorescent Protein Expression In Non-Human Primate Retina¹

Preclinical NHP Data Demonstrate Long-Term Sustained Aflibercept Levels Comparable to Aflibercept Bolus Injection





^{*}Time after IVT injection of bolus aflibercept protein (1.2 mg/eye; separate study) when similar aflibercept levels were observed in NHPs IVT, intravitreal therapy; NHP, non-human primate

OPTIC: Phase 1, Two-Year Multicenter Dose-Ranging Study of ADVM-022 in Neovascular AMD



Primary Objective

 Assess the safety and tolerability of a single IVT injection of ADVM-022

Secondary Objective

- Evaluate vision (BCVA)
- Evaluate anatomy (SD-OCT)
- Assess the need for rescue therapy



Oral steroid prophylaxis*: Cohort 1 (6x10¹¹ vg/eye, n=6) and Cohort 2 (2x10¹¹ vg/eye, n=6)

Steroid eye drops prophylaxis**: Cohort 3 (2x10¹¹ vg/eye, n=9) and Cohort 4 (6x10¹¹ vg/eye, n=9)

Patients Receive Rescue Aflibercept (2 mg IVT) if any of the Following Criteria are Met:

- 1. Loss of ≥10 letters in BCVA from baseline that is attributed to intraretinal or subretinal fluid observed by the investigator
- 2. Increase in central subfield thickness >75 µm from baseline
- 3. Presence of vision-threatening hemorrhage due to AMD

^{*}Subjects received prophylaxis of 60 mg oral prednisone for 6 days starting at Day –3 followed by 7-day taper.

^{**}Subjects receive prophylaxis of QID difluprednate eye drops for 3 weeks starting at Day 1 followed by a 3-week taper.

BCVA, best-corrected visual acuity; IVT, intravitreal therapy; SD-OCT, spectral domain optical coherence tomography; QID, 4x/day





Adverum: OPTIC Clinical Trial

- Recruitment for Cohort 4 successfully completed during COVID-19
- Limited and manageable number of missed visits related to COVID-19
- Implementation of remote visits and telemedicine assessments when necessary

Highlights the Value of Continuous Delivery of Treatment for Chronic Retinal Diseases

OPTIC Update for Cohorts 1-4 as of July 23, 2020



	Cohort 1	Cohort 2	Cohort 3	Cohort 4*
	(N=6)	(N=6)	(N=9)	(N=9)
ADVM-022 Dose, vg/eye	High Dose	Low Dose	Low Dose	High Dose
	6×10 ¹¹	2×10 ¹¹	2×10 ¹¹	6×10 ¹¹
Steroid Prophylaxis	Oral	Oral	Eye drops	Eye drops
	13-day course	13-day course	6-week course	6-week course
Follow-Up, Weeks	64–84 weeks	52–56 weeks	20-40 weeks	2–8 weeks
	(median 72)	(median 52)	(median 36)	(median 4)
Subject Disposition	No discontinuations, some visits missed due to COVID-19 concerns	No discontinuations	No discontinuations, some visits missed due to COVID-19 concerns	No discontinuations
Baseline Characteristics	✓	✓	✓	✓
Safety Data	✓	✓	✓	✓
Efficacy Data [†]	✓ No rescue injections	✓	✓	N/A* No rescue injections

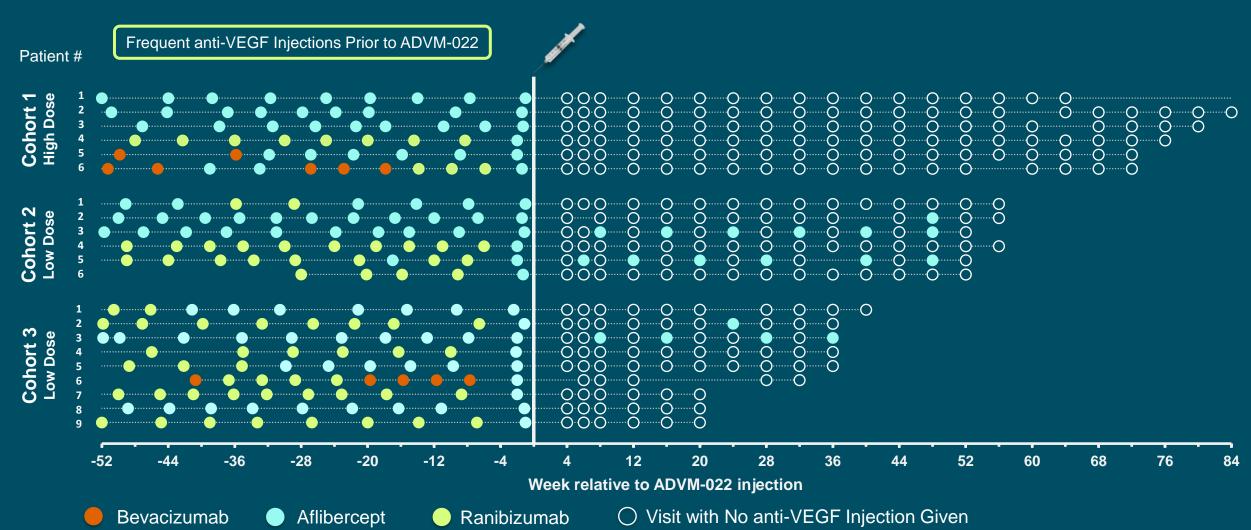
Neovascular AMD Study Population Previously Required Frequent Injections to Maintain Vision



Baseline Characteristics	Cohort 1 (N=6)	Cohort 2 (N=6)	Cohort 3 (N=9)	Cohort 4 (N=9)
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	3.5 (0.9–10.6)	4.1 (0.5–6.8)	3.3 (0.7–8.0)	3.2 (0.2–8.0)
Mean (range) Number anti-VEGF Injections Since Initial Diagnosis*	32.2 (7–109)	34.0 (4–69)	24.8 (9–70)	28.5 (2–58)**
Mean (range) Number anti-VEGF Injections in 12 Months Prior to ADVM-022	9.2 (8–11)	9.2 (5–11)	9.1 (7–10)	6.8 (3–12)**
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)

Substantial Reduction in anti-VEGF Treatments Following a Single IVT Injection of ADVM-022





Two patients (Cohort 1 subject 1 and Cohort 3 subject 6) missed two or more consecutive visits due to COVID-19 concerns VEGF, vascular endothelial growth factor; IVT, Intravitreal

Safety Summary Across Cohorts through July 23, 2020



- No ADVM-022-related non-ocular adverse events
 - No deaths or discontinuations in OPTIC
- When observed, inflammation has been responsive to and manageable with steroid eye drops
 - Minimal early inflammation with steroid eye drops prophylaxis in Cohort 3 and Cohort 4
- No clinical or fluorescein* evidence of posterior inflammation
 - No vasculitis, retinitis, choroiditis, vascular occlusions or endophthalmitis
- All ADVM-022-related ocular AEs were mild (78%) to moderate (22%)
 - One AE of special interest of moderate recurrent uveitis deemed to be related to ADVM-022 was responsive to steroid eye drops (Cohort 1)
- One unrelated ocular SAE of retinal detachment surgically repaired and resolved (Cohort 1)
- Two patients had mild AEs of IOP elevation that resolved
 - One patient had two mild IOP elevations (highest 24 mmHg) that were both treated with Combigan[®] eye drops
 - One case in a patient on Combigan® for ocular hypertension at baseline which resolved with no change to treatment

Adverse Events Across Cohorts as of July 23, 2020 ADVM-022 related events were mild (78%) or moderate (22%)



		Cohort 1 (N=6)		Cohort 2 (N=6)		Cohort 3 (N=9)		Cohort 4 (N=9)	
		6×10 ¹¹ vg/eye Oral steroids 13-day prophylaxis		2×10 ¹¹ vg/eye Oral steroids 13-day prophylaxis		2×10 ¹¹ vg/eye Steroid eye drops 6-week prophylaxis		6×10 ¹¹ vg/eye Steroid eye drops 6-week prophylaxis	
Adverse Events		Subjects	Events	Subjects	Events	Subjects	Events	Subjects	Events
	Serious	2	2*	0	0	0	0	0	0
Ocular	ADVM-022 Related**	6	30	5	21	5	14	5	12
	Total Ocular	6	51	5	32	8	26	7	15
Non-Ocular [†]	Serious ‡	1	1	0	0	2	2	0	0
Non-Ocular	Total Non-Ocular [†]	5	18	6	7	4	9	1	1

^{*} Retinal detachment (unrelated to ADVM-022) and recurrent moderate uveitis (likely related to ADVM-022)

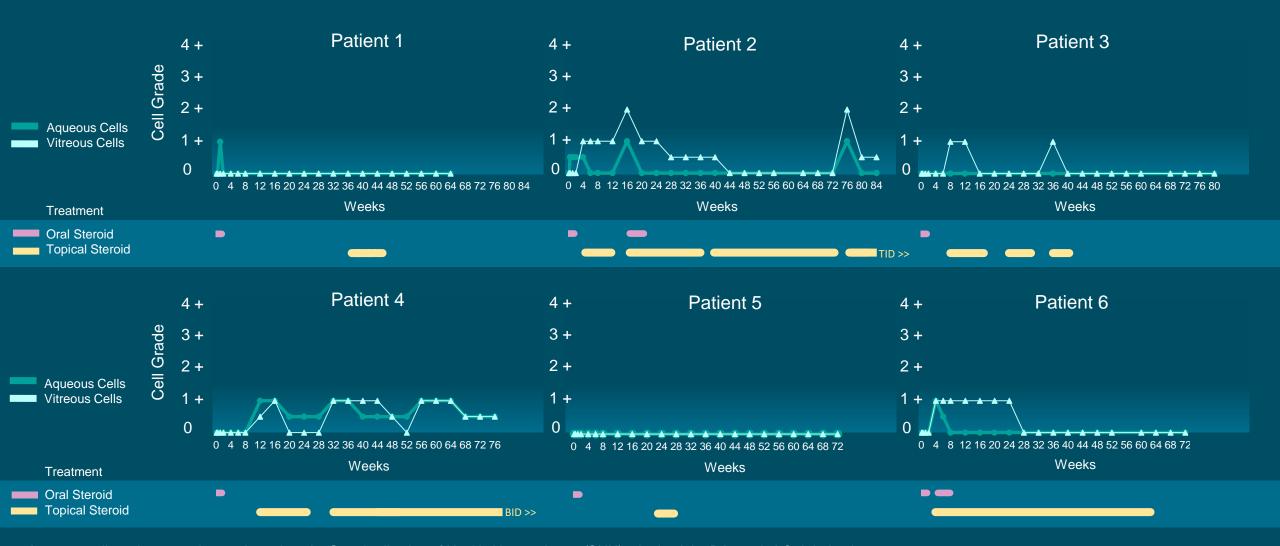
^{**} ADVM-022 related ocular events were mild (78%) or moderate (22%)

[†] None of the non-ocular AEs were ADVM-022 related

[‡] Serious non-ocular AEs included degenerative intervertebral disc disease (1) in Cohort 1; and COPD exacerbation (1), and stable angina pectoris (1) in Cohort 3

Cohort 1: Cellular inflammation as Assessed by Slit Lamp Low grade and responsive to topical steroids

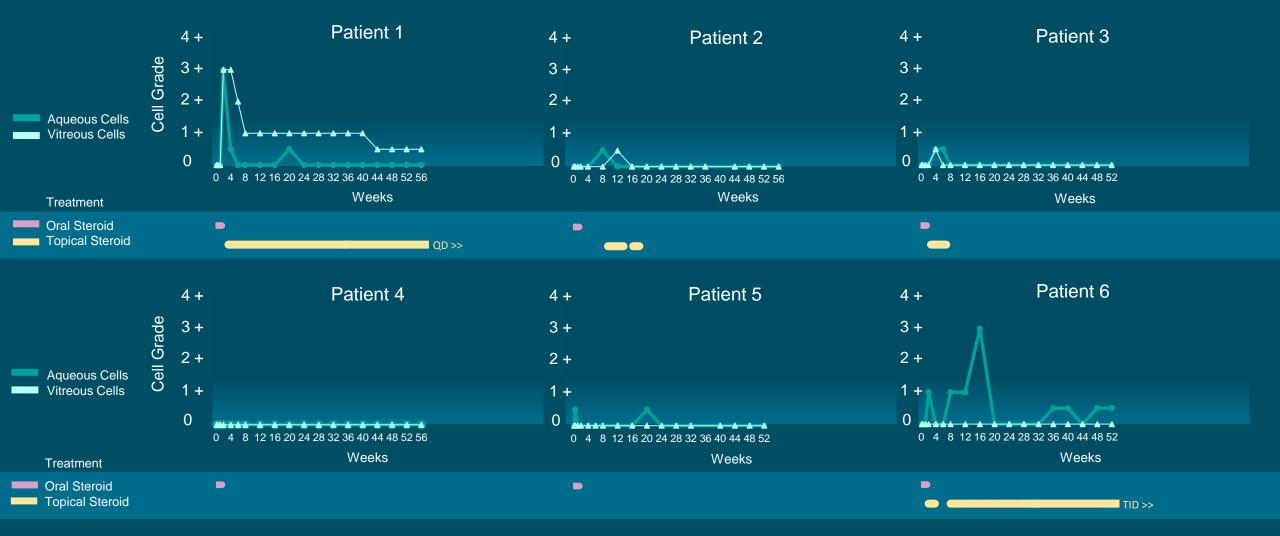




Aqueous cell grade categories are based on the Standardization of Uveitis Nomenclature (SUN) criteria: Jabs DA, et al. J Ophthalmol 2005;140:509–516 Vitreous cell grade categories are based on National Institutes of Health (NIH) guidelines Aqueous cells: 0.5+: 1-5 cells 1+: 6-15 cells 2+: 16-25 cells 3+: 26-50 cells 4+: >50 cells Vitreous cells: 0.5+: 1-10 cells 1+: 11-20 cells 2+: 21-30 cells 3+: 31-100 cells 4+: >100 cells; rare cells are captured as 0.5+ for this analysis

Cohort 2: Cellular Inflammation as Assessed by Slit Lamp Responsive to and managed with topical steroids

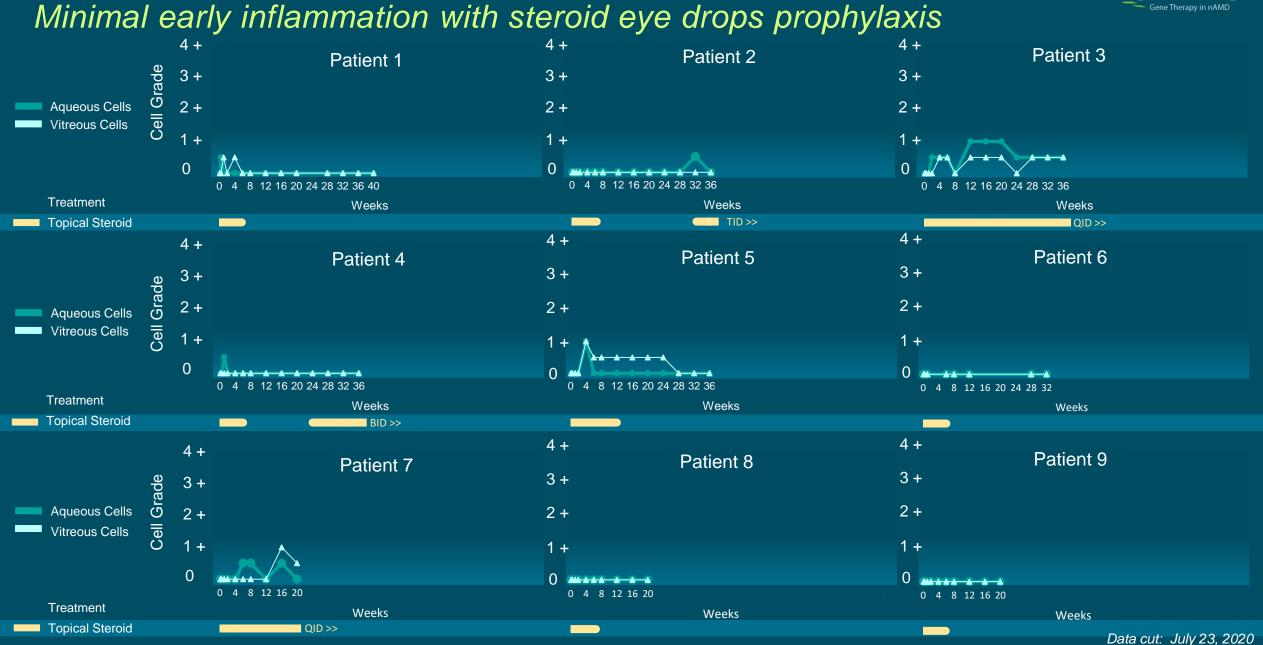




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Cohort 3: Cellular Inflammation as Assessed by Slit Lamp

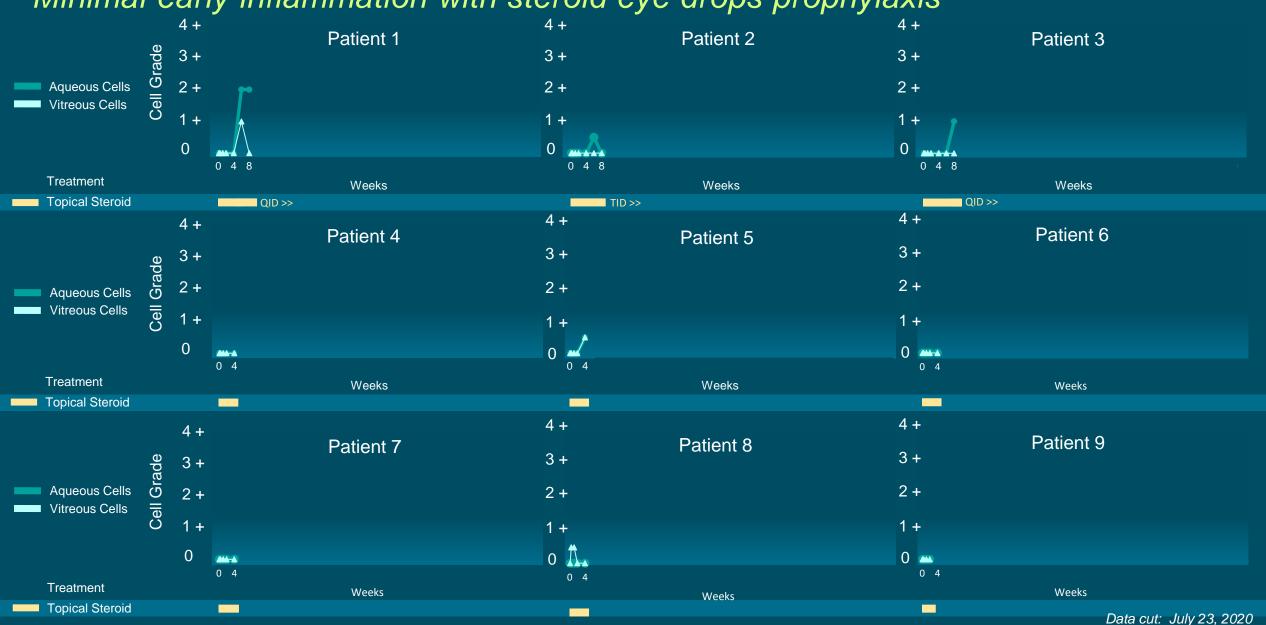




Cohort 4: Cellular Inflammation as Assessed by Slit Lamp

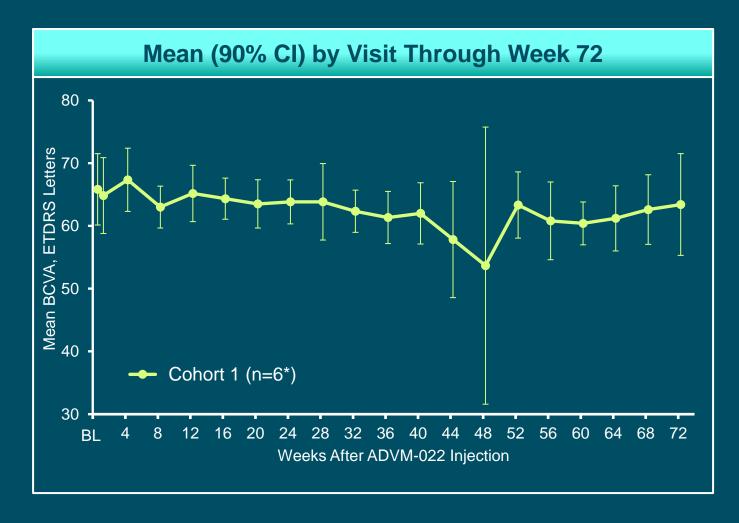


Minimal early inflammation with steroid eye drops prophylaxis



Cohort 1: BCVA Over Time



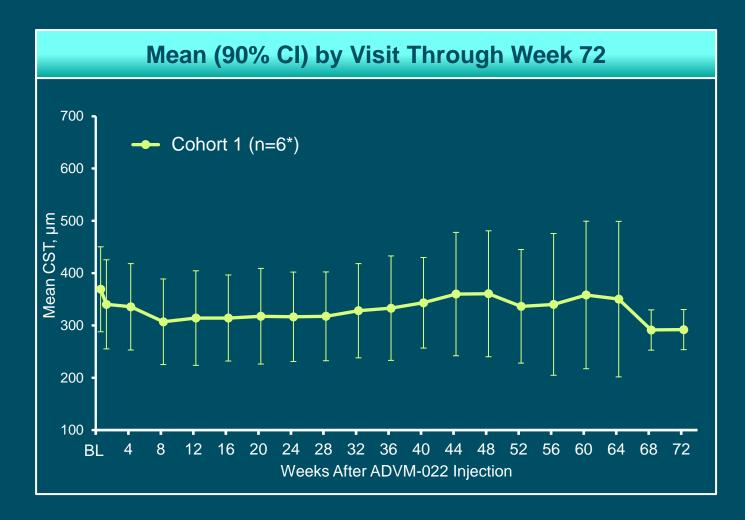


Latest Outcomes as of July 23, 2020			
Follow-Up	64–84 weeks (median 72)		
Rescue-Free Patients	100% (6/6)		
Mean BCVA Change from Baseline			
All Patients –3.2 Letters			

*One patient had low BCVA score at 44 and 48 weeks due to retinal detachment; N=5 from Week 56 to 72 Aflibercept 2 mg IVT administered at baseline, 7–15 days prior to ADVM-022 IVT (Day 1); BCVA, best corrected visual acuity; CST, central subfield thickness; BL, baseline; D, day; W, week Error bars are 90% CIs of the mean absolute BCVA and CST using T-distribution

Cohort 1: CST Over Time



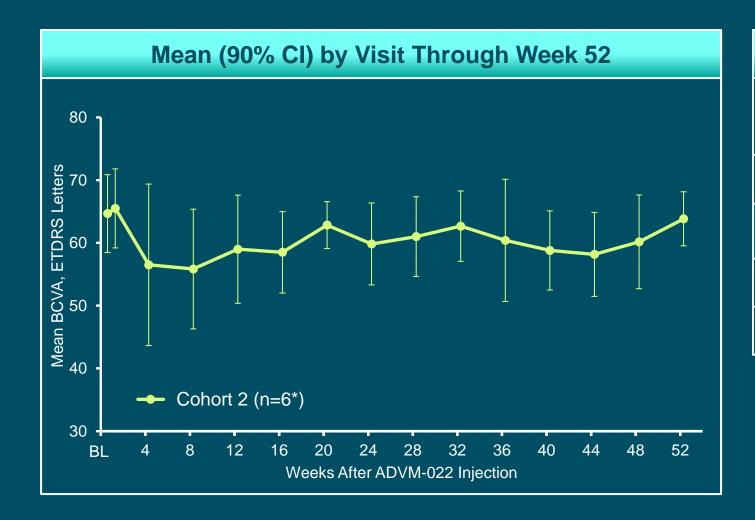


Latest Outcomes as of July 23, 2020			
Follow-Up	64–84 weeks (median 72)		
Rescue-Free Patients	100% (6/6)		
Mean CST Change from Baseline			
All Patients –21.0 μm			

^{*}One patient had no CST data at 44 and 48 weeks due to retinal detachment; N=5 from Week 56 to Week 72 Aflibercept 2 mg IVT administered at baseline, 7–15 days prior to ADVM-022 IVT (Day 1); BCVA, best corrected visual acuity; CST, central subfield thickness; BL, baseline; D, day; W, week Error bars are 90% CIs of the mean absolute BCVA and CST using T-distribution

Cohort 2: BCVA Over Time

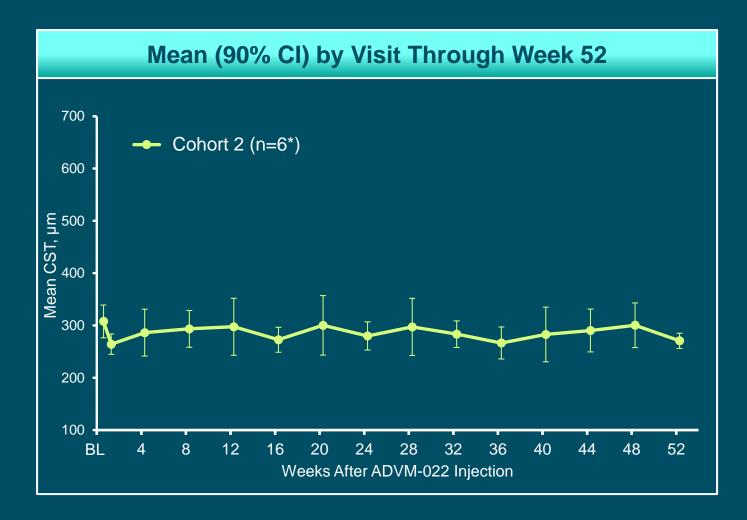




Latest Outcomes as of July 23, 2020			
Follow-Up	52–56 weeks (median 52)		
Rescue-Free Patients	50% (3/6)		
Mean BCVA Change from Baseline:			
All Patients –2.0 Letters			
Rescue-Free Patients +0 Letters			

Cohort 2: CST Over Time

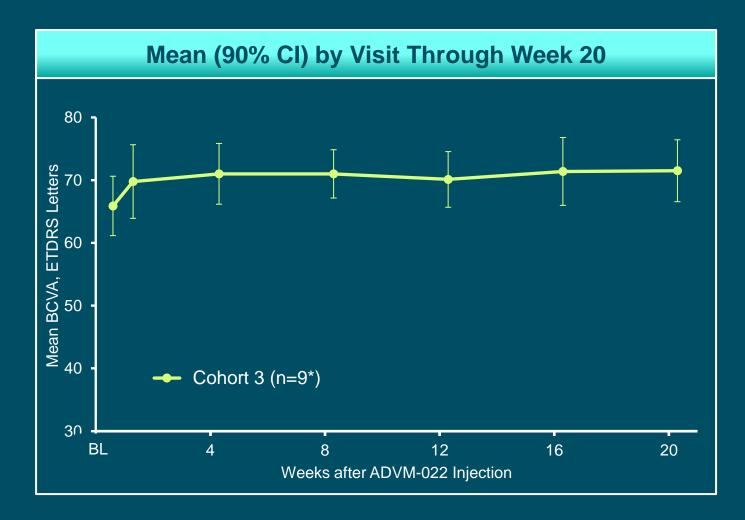




Latest Outcomes as of July 23, 2020			
Follow-Up	52–56 weeks (median 52)		
Rescue-Free Patients	50% (3/6)		
Mean CST Change from Baseline:			
All Patients –24.8 μm			
Rescue-Free Patients –8.3 µm			

Cohort 3: BCVA Over Time



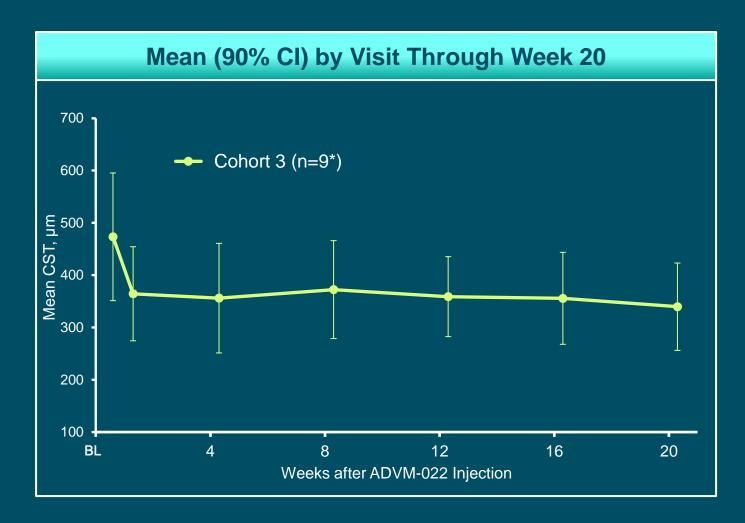


Latest Outcomes as of July 23, 2020			
Follow-Up	20–40 weeks (median 36)		
Rescue-Free Patients	78% (7/9)		
Mean BCVA Change from Baseline:			
All Patients +4.0 Letters			
Rescue-Free Patients	+6.4 Letters		

^{*}N=8 for Week 4, 16 and 20
Aflibercept 2 mg IVT administered at baseline, 7–15 days prior to ADVM-022 IVT (Day 1)
BCVA, best corrected visual acuity; CST, central subfield thickness; BL, baseline; D, day; W, week
Error bars are 90% CIs of the mean absolute BCVA and CST using T-distribution

Cohort 3: CST Over Time





Latest Outcomes as of July 23, 2020			
Follow-Up 20–40 weel (median 36			
Rescue-Free Patients	78% (7/9)		
Mean CST Change from Baseline:			
All Patients –118.6 μm			
Rescue-Free Patients –152.7 µm			

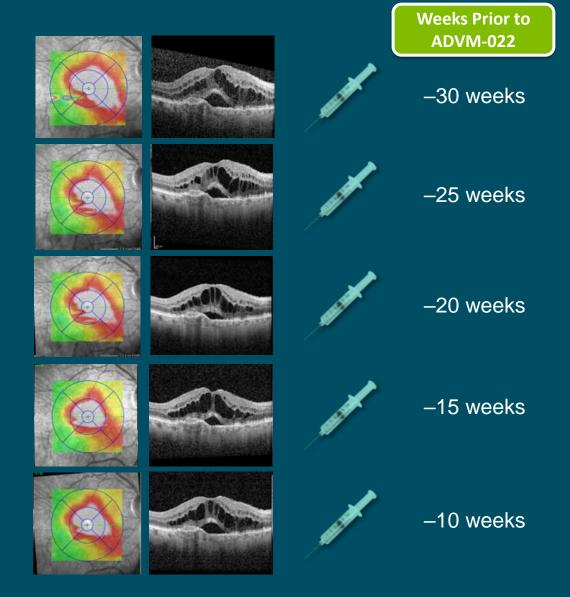
N=8 for Week 4, 16 and 20
Aflibercept 2 mg IVT administered at baseline, 7–15 days prior to ADVM-022 IVT (Day 1)
BCVA, best corrected visual acuity; CST, central subfield thickness; BL, baseline; D, day; W, week
Error bars are 90% CIs of the mean absolute BCVA and CST using T-distribution

Case Study: Cohort 3, Subject 5 Persistent fluid despite frequent anti-VEGF injections



OCT scans and treatment intervals from most recent 5 anti-VEGF injections visits prior to OPTIC

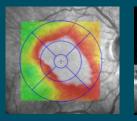
82 Year Old Male		
Previous IVT, n	19	
IVT in Last 12 Months, n	9	

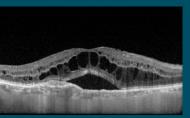


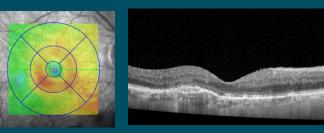
Case Study: Cohort 3, Subject 5 Rapid and sustained anatomical improvements



–3 weeks Screening BCVA: 77 letters CST: 678 μm

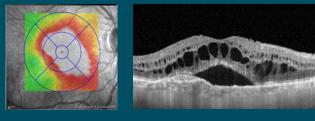






Aflibercept IVT

-2 weeks
BCVA: 75 letters
CST: 664 µm

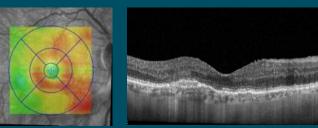


+20 weeks BCVA: 82 letters CST: 266 µm

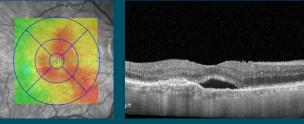
+12 weeks

BCVA: 81 letters

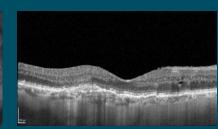
CST: 257 µm



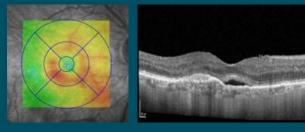
ADVM-022 0 weeks BCVA: 82 letters CST: 355 µm



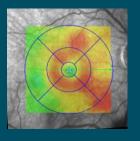
+28 weeks BCVA: 84 letters CST: 277 µm

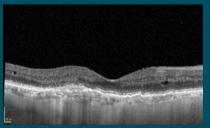


+1 week BCVA: 80 letters CST: 338 µm



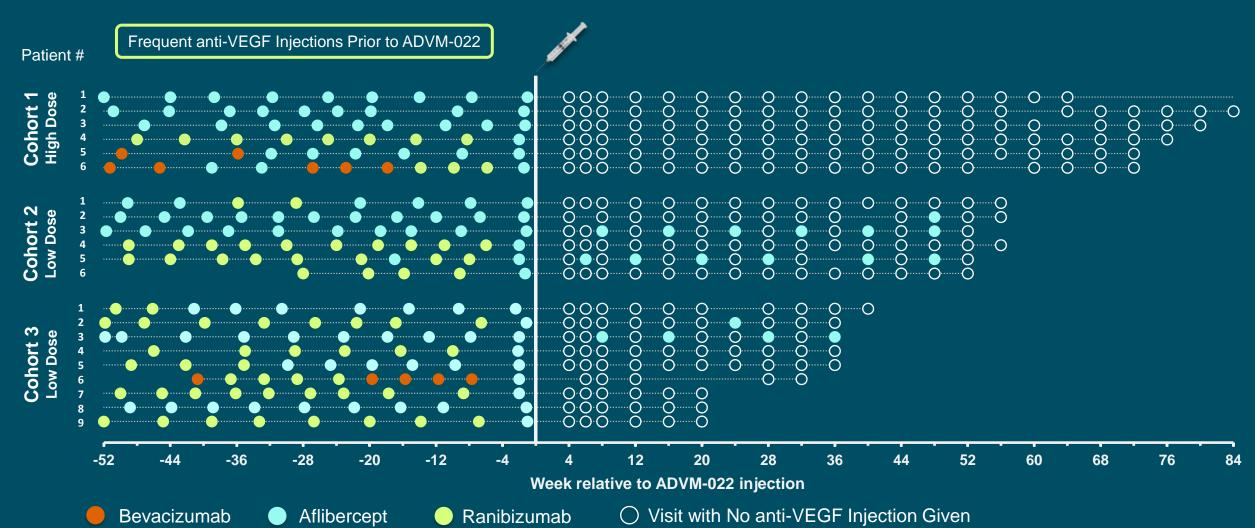
+36 weeks BCVA: 83 letters CST: 286 µm





Substantial Reduction in anti-VEGF Treatments Following a Single IVT Injection of ADVM-022

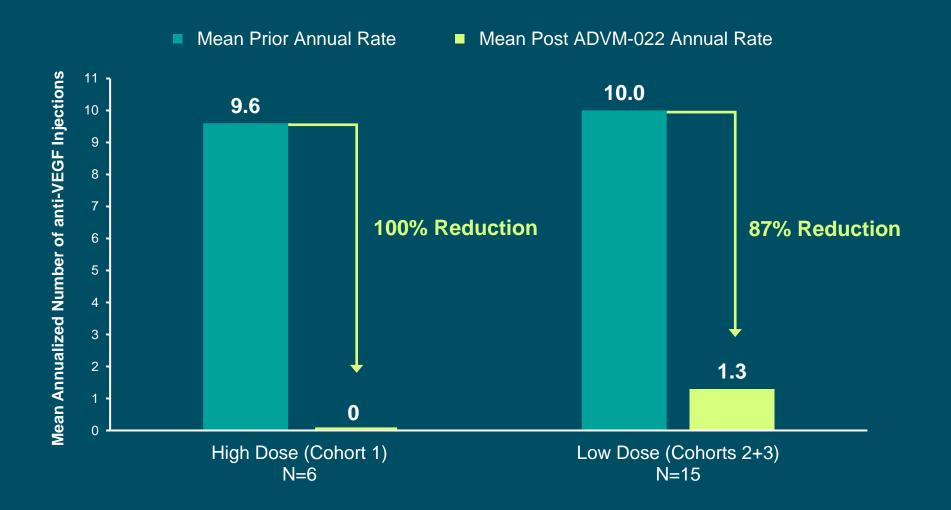




Two patients (Cohort 1 subject 1 and Cohort 3 subject 6) missed two or more consecutive visits due to COVID-19 concerns VEGF, vascular endothelial growth factor; IVT, Intravitreal

Substantial Reduction in Annualized anti-VEGF Injection Frequency Following ADVM-022





ADVM-022 Demonstrates Further Potential to Greatly Reduce Treatment Burden in wet AMD



- ADVM-022 continues to show robust treatment response
 - Mean BCVA maintained
 - Mean CST maintained to improved
- Long-term durability beyond 15 months from single IVT injection with zero rescue injections in Cohort 1
- Further evidence of a dose response:
 - High dose: 6/6 patients rescue injection free
 - Low dose: 10/15 patients rescue injection free
- Substantial reduction in annualized anti-VEGF injection frequency following ADVM-022:
 - High dose: 100%
 - Low dose: 87%
- ADVM-022 continues to be well tolerated with a favorable safety profile in all 4 cohorts (n=30)
 - All ADVM-022-related ocular adverse events were mild (78%) to moderate (22%)
 - Ocular inflammation, when observed, has been responsive to steroid eye drops
- ADVM-022 warrants further investigation in larger studies

ADVM-022 Acknowledgments



Investigators, Study Teams and Participants

- David Boyer MD
- Brandon Busbee MD
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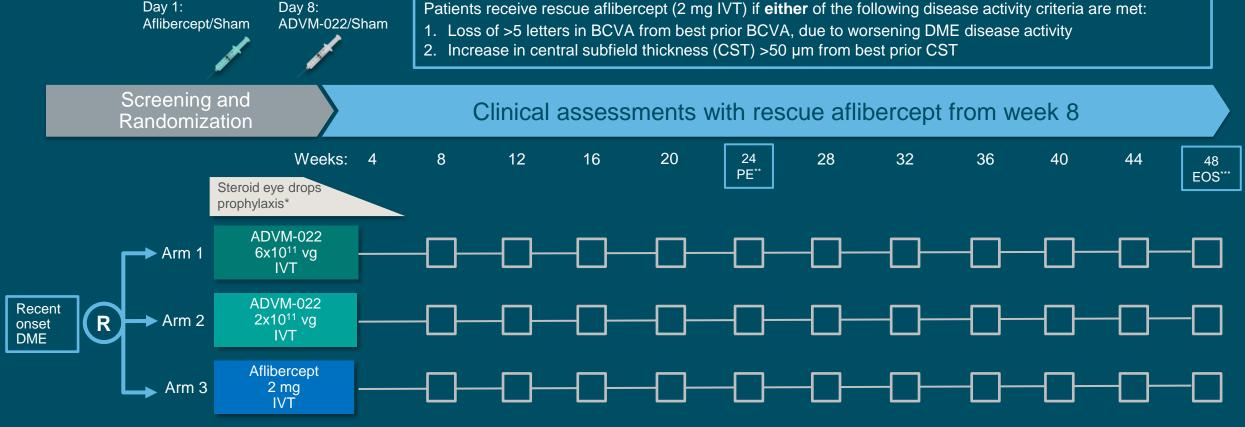


INFINITY: Phase 2 Trial of ADVM-022 in DME



Multi-center, randomized, double-masked, active comparator-controlled

- Evaluate a single IVT injection of ADVM-022 in patients with vision impairment due to center involving diabetic macular edema (DME)
- Designed to demonstrate superior disease control compared to a single aflibercept injection, measured by time to worsening of DME disease activity
- Additional objectives assess frequency of rescue aflibercept to the study eye, visual acuity (BCVA), retinal anatomy (OCT and DRSS) and safety outcomes



DRSS, Diabetic Retinopathy Severity Score OCT, Optical Coherence Tomography CST. Central Subfield Thickness

^{*}All subjects receive a 7-week course of difluprednate eye drops, starting at QID and tapering to QD

www.INFINITYclinicaltrial.com or

Thank you



