

Virtual KOL/IR Event

November 14, 2020



Forward-looking Statements

Statements contained in this press release regarding events or results that may occur in the future are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Such statements include, but are not limited to, statements regarding: the potential for ADVM-022 in treating patients with wet AMD and DME; the expected growth of the incidence of new cases of wet AMD in the U.S. as its population ages; Adverum's expectations that it will present longer-term data from the OPTIC Phase 1 trial for ADVM-022 in wet AMD in the first half of 2021 and data from the INFINITY Phase 2 trial for ADVM-022 in DME in the second half of 2021; Adverum's plans to accelerate the development and future commercial launch plans for ADVM-022; and Adverum's expectations as to its plans to advance ADVM-022 in wet AMD by initiating a pivotal trial mid-2021. All of these statements are based on certain assumptions made by Adverum on current conditions, expected future developments and other factors Adverum believes are appropriate in the circumstances. Adverum may not achieve any of these in a timely manner, or at all, or otherwise carry out the intentions or meet the expectations disclosed in its forwardlooking statements, and you should not place undue reliance on these forward-looking statements. Actual results and the timing of events could differ materially from those anticipated in such forward-looking statements as a result of various risks and uncertainties, which include risks inherent to, without limitation: Adverum's novel technology, which makes it difficult to predict the time and cost of product candidate development and obtaining regulatory approval; the results of early clinical trials not always being predictive of future results; the potential for preliminary or interim results of clinical trials to change as the clinical trial continues or in connection with the preparation and analysis of final results; the potential for future complications or side effects in connection with use of ADVM-022; obtaining regulatory approval for gene therapy product candidates; enrolling patients in clinical trials; reliance on third parties for conducting the OPTIC and INFINITY trials and vector production; the effects of the COVID-19 pandemic on the company's operations and on the company's ongoing clinical trials; and ability to fund operations through completion of the OPTIC and INFINITY trials and thereafter. Risks and uncertainties facing Adverum are described more fully in Adverum's Form 10-Q filed with the SEC on November 5, 2020 under the heading "Risk Factors." All forward-looking statements contained in this press release speak only as of the date on which they were made. Adverum undertakes no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made.



Agenda for OPTIC Data Virtual KOL/IR Event Saturday, Nov 14, 2020 7:30-9am PT

Time	Presentation	Speaker
5 Minutes	Opening Remarks	Laurent Fischer, M.D. CEO, Adverum Biotechnologies
25 Minutes	OPTIC Phase 1 Presentation	Carl D. Regillo, M.D., F.A.C.S Director, Wills Eye Hospital Retina Service Investigator in OPTIC Phase 1 Trial
15 Minutes	Ocular Inflammation Overview	Steven Yeh, M.D. Associate Professor, Director, Section of Uveitis and Ocular Immunology, Emory Eye Center
15 Minutes	Fireside Chat – Dr. Boyer and Dr. Fischer	David S. Boyer, M.D. Senior Partner, Retina-Vitreous Associates Medical Group and Adjunct Clinical Professor of Ophthalmology, University of Southern California/ Keck School of Medicine, Los Angeles Investigator in OPTIC Phase 1 Trial
30 Minutes	Q&A	Laurent Fischer, M.D. Aaron Osborne, M.B.B.S. Leone Patterson David S. Boyer, M.D. Carl D. Regillo, M.D., F.A.C.S. Steven Yeh, M.D.
	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)

Carl D. Regillo, M.D., F.A.C.S

Director of the Wills Eye Hospital Retina Service

(on behalf of the OPTIC investigators)



Disclosures



- Grant Support: Genentech, Regeneron, Novartis, Allergan, Astellis, Notal, Chengdu Kanghong, Opthea, Iveric, Adverum, RegenXBio, Kodiak, Graybug
- Consultant: Genentech, Novartis, Allergan, Notal, Takeda, Kodiak, Graybug, Lineage, Opthea, Eyepoint, Iveric, Aldeyra, Merck, Adverum, Chengdu Kanghong

Key Takeaways for ADVM-022 (OPTIC Trial)

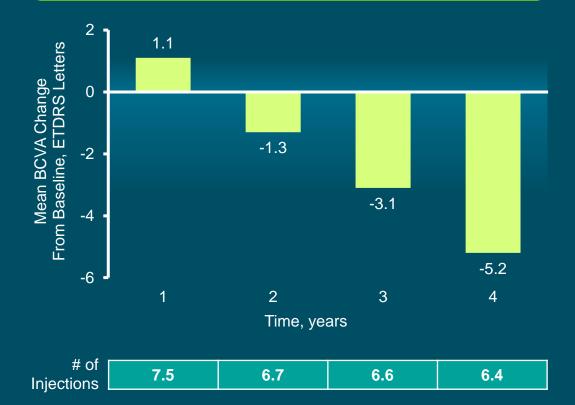


- Continues to be well tolerated with a favorable safety profile at both high and low doses
- Show robust and sustained efficacy at both high and low doses
- Durability out to 92 weeks from a single IVT injection with zero supplemental injections in Cohort 1
- Robust aqueous anti-VEGF protein expression observed at 18 months in Cohort 1
- Substantial reduction in annualized injection frequency following ADVM-022
- Most patients are supplemental injection free in OPTIC
- Warrant further investigation in larger studies

Real-world anti-VEGF Patient Outcomes Under treatment leads to vision loss over time



98,821 Eyes from 79,885 US Patients
Receiving Routine Intravitreal anti-VEGF Therapy



Development Approach to Deliver Long-Term Efficacy

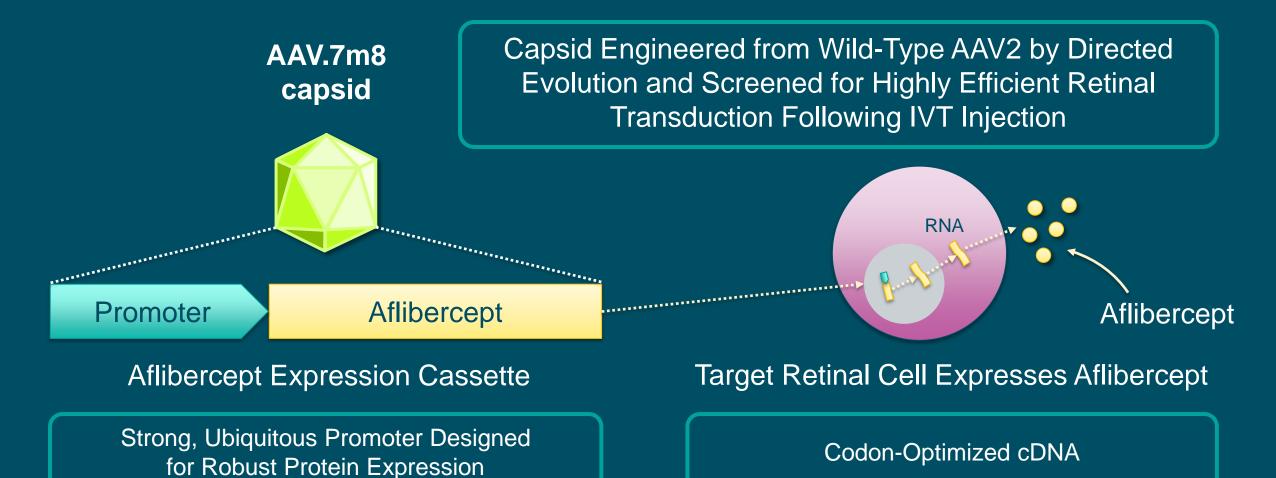
Gene Therapy

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

ADVM-022: Adeno-Associated Virus Gene Therapy Vector



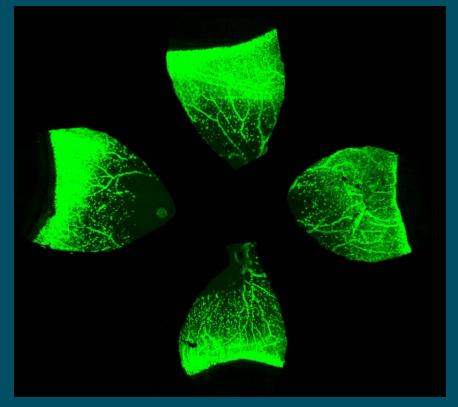
Designed for continuous delivery of aflibercept by intravitreal injection



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



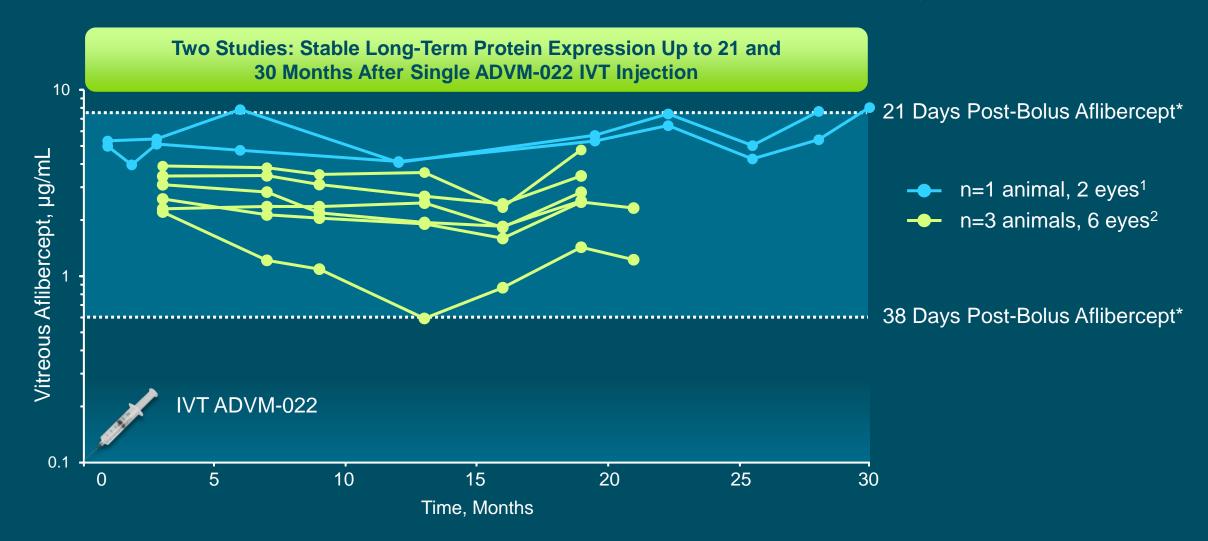
- Advanced AAV.7m8 vector developed using directed evolution to:
 - Enable efficient intravitreal delivery^{1,3}
 - Increase transduction of retinal cells^{1,3}
 - Increase protein expression¹
- Protein expression in NHPs:
 - Photoreceptors, ganglion cells¹⁻³
 - Bipolar cells, Müller cells, optic nerve²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





	Cohort 1 (N=6)	Cohort 2 (N=6)	Cohort 3 (N=9)	Cohort 4* (N=9)
ADVM-022 Dose, vg/eye	High Dose 6×10 ¹¹	Low Dose 2×10 ¹¹	Low Dose 2×10 ¹¹	High Dose 6×10 ¹¹
Steroid Prophylaxis	Oral 13-day course	Oral 13-day course	Eye drops 6-week course	Eye drops 6-week course
Follow-Up, Weeks	64-92 weeks (median 86)	64–68 weeks (median 64)	32-48 weeks (median 48)	12–24 weeks (median 16)
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†	✓	✓	✓	N/A
Aqueous anti-VEGF Protein Expression Data	N=2 at week 76	N/A	N/A	N/A

Neovascular AMD Study Population Previously Required Frequent Injections to Maintain Vision



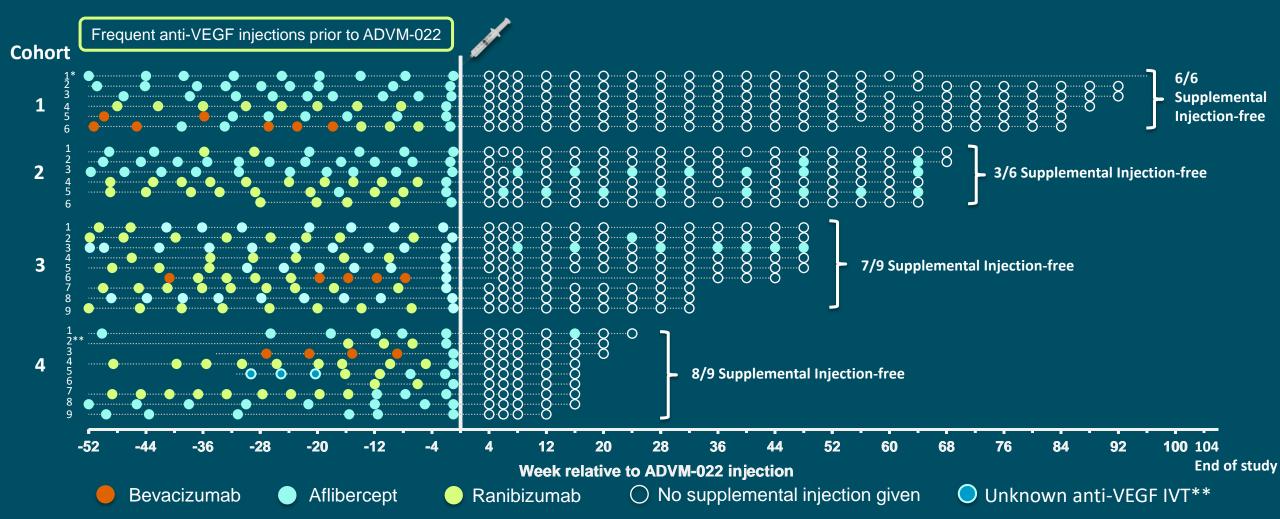
Baseline Characteristics	Cohort 1 (N=6)	Cohort 2 (N=6)	Cohort 3 (N=9)	Cohort 4 (N=9)
Mean (range) Age, Years	79.0 (62–88)	79.8 (74–90)	77.4 (65–90)	79.9 (68–88)
Mean (range) Years Since nAMD Diagnosis	4.5 (0.9–10.6)	4.1 (0.5–6.8)	3.3 (0.7–8.0)	3.2 (0.2–8.0)
Mean (range) Number anti-VEGF Injections Since Initial Diagnosis*	38.2 (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)	7.1 (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)

^{*}Not including the mandated aflibercept at Screening; **Excluding Patient #2 with incomplete prior anti-VEGF data.

BCVA, best corrected visual acuity: CST, central subfield thickness; ETDRS, Early Treatment Diabetic Retinopathy Study nAMD, neovascular age-related macular degeneration; VEGF, vascular endothelial growth factor

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





Five patients were diagnosed <1 year prior to ADVM-022 injection: one each in Cohorts 2 and 3, three in Cohort 4.

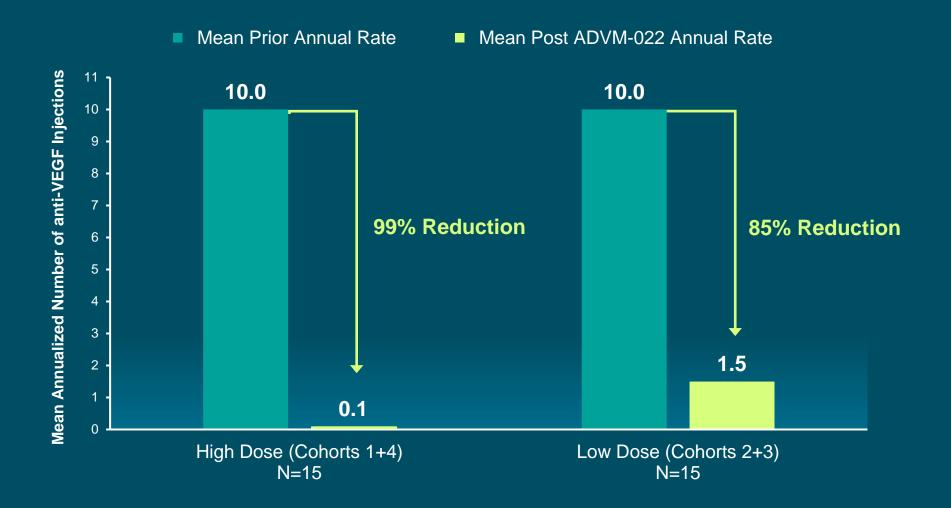
*Cohort 1, Patient 1 remains on study but have missed visits post Week 64; **Incomplete prior data for Cohort 4, Patient 2;

†Received in a clinical trial not yet unmasked (NCT04049266).

Data cut: October 15, 2020

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





Safety Summary Across Cohorts through October 15, 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
- 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 October 15, 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
Ocular	Serious	2	2*	0	0	0	0	0	0
	ADVM-022 Related**	6	31	5	21	5	15	6	19
	Total Ocular	6	54	5	34	8	31	8	23
Non-Ocular [†]	Serious ‡	1	1	0	0	2	2	0	0
	Total Non-Ocular [†]	5	18	6	7	5	10	2	2

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

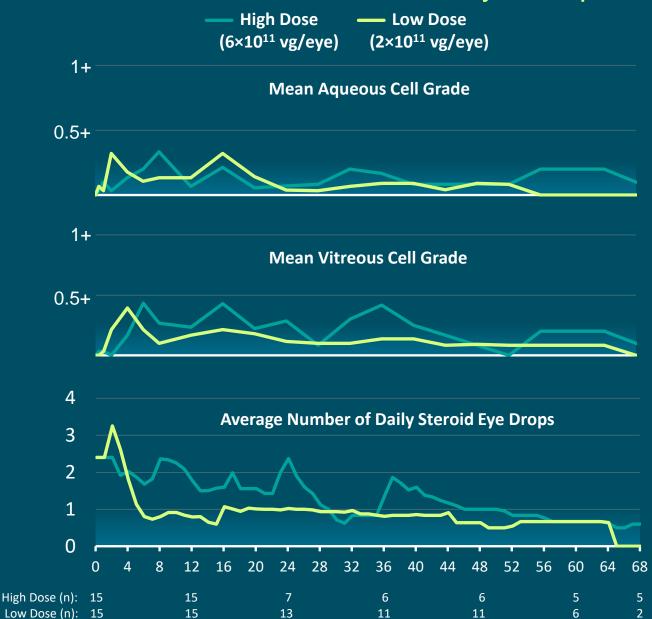
^{**} ADVM-022 related ocular events were mild (78%) or moderate (22%)

[†] 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

Ocular Cell Grade and Steroid Eye Drop Use Decreases over Time





Decreasing trend over time for:

- Average aqueous cell grade
- Average vitreous cell grade
- Average steroid eye drop use

Cell grades as assessed by slit lamp Grade categories are based on the Standardization of Uveitis Nomenclature (SUN) criteria for aqueous cells and National Institutes of Health (NIH) guidelines for vitreous cells. 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

Ocular Cellular Inflammation & Topical Steroid Eye Drop Overview Latest Outcomes as of October 15, 2020



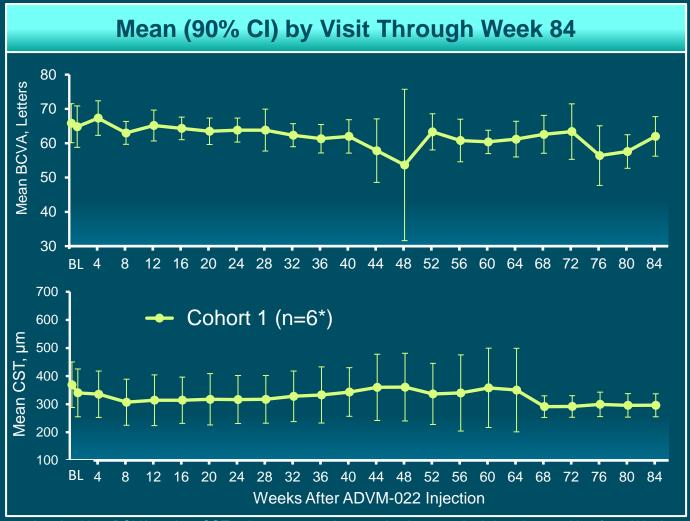
Dose	Cohort 1 High Dose (N=6)	Cohort 2 Low Dose (N=6)	Cohort 3 Low Dose (N=9)	Cohort 4 High Dose (N=9)
Follow-Up	64-92 weeks (median 86)	64-68 weeks (median 64)	32–48 weeks (median 48)	12–24 weeks (median 16)
Average Aqueous Cell Grade	0.08	0.00	0.06	0.11
Average Vitreous Cell Grade	0.17	0.00	0.06	0.11
% with any cellular inflammation	33%	0%	11%	22%
Average # of daily drops	1.2	0.5	0.8	1.9

At the most recent visit:

- Low average cell grades
- Low average number of daily drops
- Cohort 4 still in early follow-up
- Slow tapering implemented

Cohort 1: BCVA and CST Stable, Zero Supplemental Injections ©

Robust anti-VEGF Protein Expression observed at 18 months



Latest Outcomes as of Oct. 15, 2020		
Follow-Up	64–92 weeks (median 86)	
Rescue-Free Patients 100% (6/6)		
Mean BCVA Change from Baseline		
All Patients –2.5 Letters		
Mean CST Change from Baseline		
All Patients –19.7 μm		

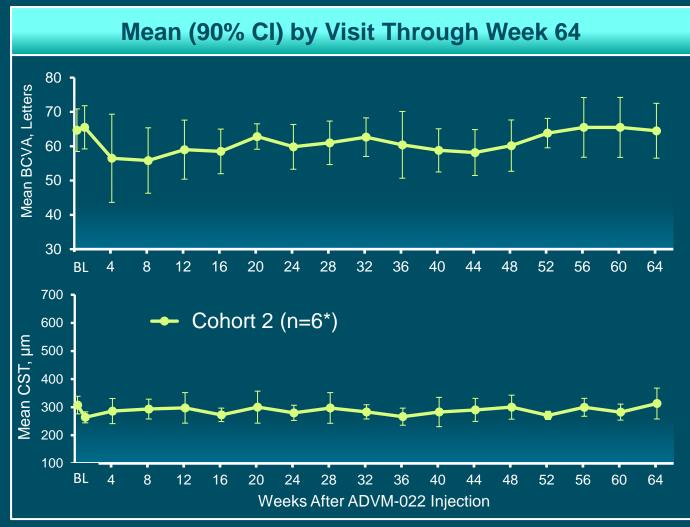
Mean Aqueous anti-VEGF Protein level**	
Week 76 (n=2)	1840 ng/mL

*One patient had low BCVA and no CST values at 44 and 48 weeks due to retinal detachment; N=5 from Week 56 to 84 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

^{**} Available aqueous humor aflibercept protein samples from Cohort 1 subjects enrolled in optional aqueous humor sampling study

Cohort 2: BCVA and CST Maintained Over Time





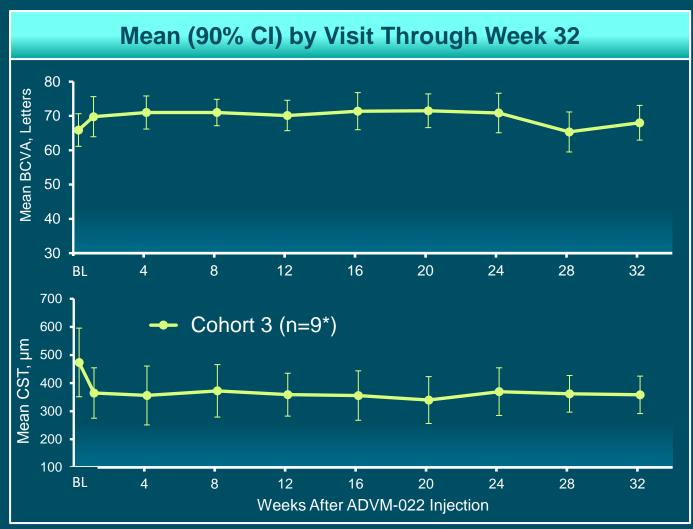
Follow-Up	64–68 weeks (median 64)	
Rescue-Free Patients	50% (3/6)	
Mean BCVA Change from Baseline		
All Patients	+0.2 Letters	
Rescue-Free Patients	+1.0 Letters	
Mean CST Change from Baseline		
All Patients	–1.0 μm	
Rescue-Free Patients	–23.7 μm	

Latest Outcomes as of Oct. 15, 2020

^{*} N=5 for Week 36 and 40 visits
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: BCVA Maintained and CST Improved





Latest Outcomes as of Oct. 15, 2020 32-48 weeks Follow-Up (median 48) **Rescue-Free Patients** 78% (7/9) **Mean BCVA Change from Baseline All Patients** -0.9 Letters **Rescue-Free Patients** +4.1 Letters **Mean CST Change from Baseline All Patients** -113.4 µm **Rescue-Free Patients** $-132.7 \, \mu m$

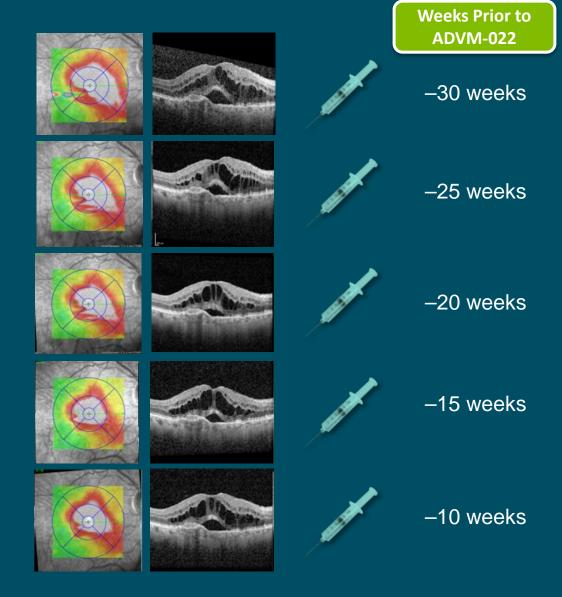
*N=8 for Week 4, 16 and 20; N=7 at Week 24
Aflibercept 2 mg IVT administered at baseline, 7–15 days prior to ADVM-022 IVT (Day 1)
BCVA, best corrected visual acuity; CST, central subfield thickness; BL, baseline; D, day; W, week
Error bars are 90% CIs of the mean absolute BCVA and CST using T-distribution

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



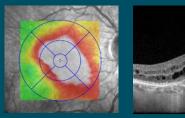
Aflibercept injections

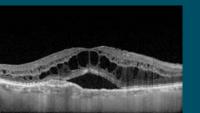
^{*} Excluding the aflibercept injection received at the Screening visit IVT, intravitreal therapy; OCT, optical coherence tomography; VEGF, vascular endothelial growth factor

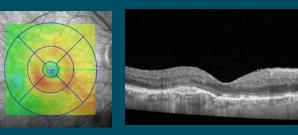
Case Study: Cohort 3, Subject 5 Rapid and sustained anatomical improvements



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





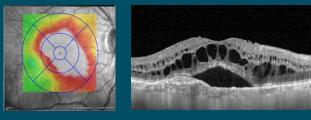


Aflibercept IVT

-2 weeks

BCVA: 75 letters

CST: 664 µm

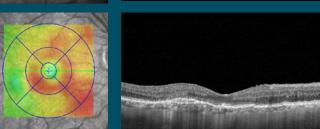


+24 weeks BCVA: 83 letters CST: 272 µm

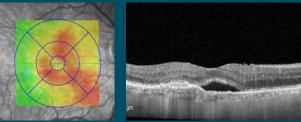
+12 weeks

BCVA: 81 letters

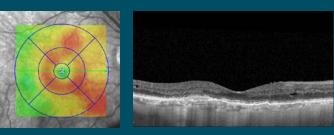
CST: 257 µm



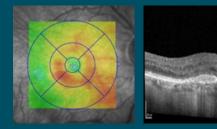
ADVM-022 0 weeks BCVA: 82 letters CST: 355 µm



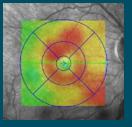
+36 weeks BCVA: 83 letters ___CST: 286 µm

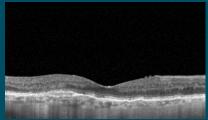


+1 week BCVA: 80 letters CST: 338 µm



+48 weeks BCVA: 83 letters CST: 300 µm





ADVM-022 Greatly Reduced anti-VEGF Injection Burden in wet AMD – Warrants Further Investigation in Larger Studies



- ADVM-022 continues to be well tolerated with a favorable safety profile at both high and low doses (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 continues to show robust and sustained efficacy at both high and low doses
 - Mean BCVA maintained
 - Mean CST maintained to improved
- Durability out to 92 weeks from a single IVT injection with zero supplemental injections in Cohort 1
- Robust aqueous anti-VEGF protein expression observed at 18 months in Cohort 1
- Substantial reduction in annualized anti-VEGF injection frequency following ADVM-022 in patients who
 previously required frequent injections to maintain vision:
 - High dose: 99% reduction
 - Low dose: 85% reduction
- Most patients are supplemental anti-VEGF injection free in OPTIC:
 - High dose: 14/15 patients injection free
 - Low dose: 10/15 patients injection free

ADVM-022 Acknowledgments



Investigators, Study Teams and Participants

- David Boyer MD
- Brandon Busbee MD
- Brian Joondeph MD
- Arshad Khanani MD
- James Major MD
- Dante Pieramici MD
- Carl Regillo MD
- Charles Wykoff MD, PhD
- Mehdi Gasmi PhD
- Szilard Kiss MD
- Aaron Osborne MBBS
- Carol Hoang PharmD
- Adam Turpcu PhD
- Carol Chung PhD



Thank you



Fireside Chat with Dr. David Boyer

David S. Boyer, M.D.

Senior Partner, Retina-Vitreous Associates Medical Group and Adjunct Clinical Professor of Ophthalmology, University of Southern California/ Keck School of Medicine, Los Angeles Investigator in OPTIC Phase 1 Trial



OPTIC and **INFINITY** Investigator



- Dr. David Boyer, Retina Specialist and Clinical Trial Investigator
- Senior Partner, Retina-Vitreous Associates Medical Group (LA Retina) servicing greater Los Angeles area
- All retina practice with 11 retina specialists
- Involved in extensive clinical research
- Enrolled a third of patients into OPTIC
- Enrolled the first and last patients into OPTIC



Fireside Chat with Dr. David Boyer

David S. Boyer, M.D.

Senior Partner, Retina-Vitreous Associates Medical Group and Adjunct Clinical Professor of Ophthalmology, University of Southern California/ Keck School of Medicine, Los Angeles Investigator in OPTIC Phase 1 Trial



Case Study: Cohort 1, Subject 5



Weeks Prior to

Frequent anti-VEGF injections for persistent retinal fluid prior to ADVM-022

88 Year Old Male	
Study Eye	Right
Lens status	Pseudophakic
Previous IVT, n*	7
IVT in Last 12 Months, n	8

ADVM-022
-32 weeks
–27 weeks
–22 weeks
–16 weeks
–9 weeks

Aflibercept injections

^{*} Excluding the aflibercept injection received at the Screening visit IVT, intravitreal therapy; OCT, optical coherence tomography; VEGF, vascular endothelial growth factor

Case Study: Cohort 1, Subject 5



Zero anti-VEGF Injections with resolved retinal fluid through 18 months after ADVM-022

Aflibercept IVT -2 weeks BCVA: 64 letters CST: 293 µm ADVM-022

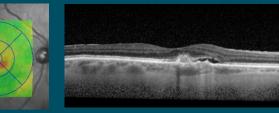


0 weeks BCVA: 65 letters CST: 262 µm

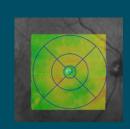
BCVA: 61 letters

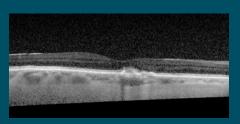
+8 week BCVA: 65 letters CST: 254 µm

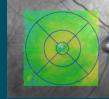


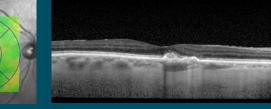


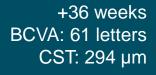
+24 week BCVA: 62 letters CST: 268 µm

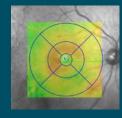


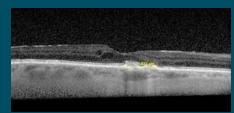




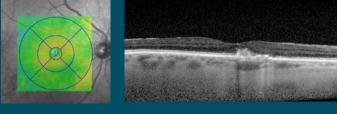


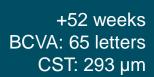


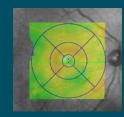


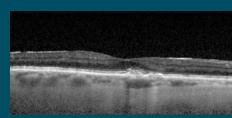


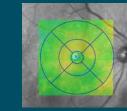


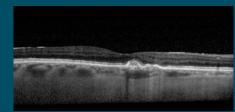




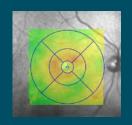


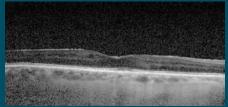






+84 weeks BCVA: 64 letters CST: 313 µm





Fireside Chat with Dr. David Boyer

David S. Boyer, M.D.

Senior Partner, Retina-Vitreous Associates Medical Group and Adjunct Clinical Professor of Ophthalmology, University of Southern California/ Keck School of Medicine, Los Angeles Investigator in OPTIC Phase 1 Trial



Q&A



Execution and Anticipated Milestones

ADVM-022 for Wet AMD OPTIC Phase 1 Clinical Trial

S	Presented additional data from Cohort 1 at Macula 20/20 in January 2020
\bigcirc	Presented new interim data from Cohorts 1 and 2 at Angiogenesis in February 2020
S	Completed patient dosing in Cohort 3
\bigcirc	Presented new interim data from Cohorts 1-3 in May 2020
Ø	Completed patient dosing in Cohort 4 in July 2020
S	Presented new interim data from Cohorts 1-4 in August 2020
S	Partial clinical hold removed by FDA
	Present additional data from Cohorts 1-4 in November 2020
	Present longer-term data, including additional anti-VEGF protein expression data, 1H2021
	Initiate first pivotal trial mid-2021

ADVM-022 for DME INFINITY Phase 2 Clinical Trial



Submitted IND in DR to FDA



Randomized first patient in July 2020



Present data from INFINITY clinical trial (24-week primary endpoint assessment) **2H2021**



