

**DEVELOPING
TRANSFORMATIVE
THERAPIES**
FOR RETINAL DISEASES

March 2021
NASDAQ: ISEE

IVERIC
BIO

FORWARD-LOOKING STATEMENTS

Any statements in this presentation about the Company's future expectations, plans and prospects constitute forward-looking statements for purposes of the safe harbor provisions under the Private Securities Litigation Reform Act of 1995. Forward-looking statements include any statements about the Company's strategy, future operations and future expectations and plans and prospects for the Company, and any other statements containing the words "anticipate," "believe," "estimate," "expect," "intend", "goal," "may", "might," "plan," "predict," "project," "seek," "target," "potential," "will," "would," "could," "should," "continue," and similar expressions.

In this presentation, the Company's forward looking statements include statements about its expectations regarding patient enrollment and retention in its second Phase 3 trial (GATHER2) of Zimura in geographic atrophy secondary to AMD and use of its completed clinical trial of Zimura for the treatment of geographic atrophy secondary to AMD (GATHER1) as a Phase 3 trial, its development and regulatory strategy for Zimura and its other product candidates, including additional indications that the Company may pursue for the development of Zimura and IC-500, the Company's hypotheses regarding complement inhibition and HtrA1 inhibition as potential mechanisms of action for the treatment of retinal diseases, the implementation of its business and hiring plan, the projected use of cash and cash balances, the timing, progress and results of clinical trials and other research and development activities, including regulatory submissions, the clinical meaningfulness of clinical trial results, the potential utility of its product candidates, estimates regarding the number of patients affected by the diseases and indications the Company's product candidates are intended to treat and statements regarding the potential for the Company's business development strategy.

Such forward-looking statements involve substantial risks and uncertainties that could cause the Company's research and development programs, future results, performance or achievements to differ significantly from those expressed or implied by the forward-looking statements. Such risks and uncertainties include, among others, those related to the progression and duration of the COVID-19 pandemic and responsive measures thereto and related effects on the Company's research and development programs, operations and financial position, the initiation and the progress of research and development programs and clinical trials, including enrollment and retention in clinical trials, availability of data from these programs, reliance on contract development and manufacturing organizations, university collaborators and other third parties, establishment of manufacturing capabilities, expectations for regulatory matters, developments from the Company's competitors and the marketplace for the Company's products, need for additional financing and other factors discussed in the "Risk Factors" section contained in the quarterly and annual reports that the Company files with the Securities and Exchange Commission.

Any forward-looking statements represent the Company's views only as of the date of this presentation. The Company anticipates that subsequent events and developments will cause its views to change. While the Company may elect to update these forward-looking statements at some point in the future, the Company specifically disclaims any obligation to do so except as required by law.

A DIVERSIFIED PORTFOLIO FOCUSED ON RETINAL DISEASES

Therapeutics for Age-Related Retinal Diseases (Large Market)

- Zimura (C5 inhibitor):
 - Positive data for the first of two Phase 3 trials (GATHER1)
 - Statistically significant 27% reduction in GA growth over 12 months (primary endpoint achieved)
 - Targeting completion of patient enrollment for second Phase 3 trial (GATHER2) 3Q 2021
 - Potential expansion into intermediate AMD, wet AMD and lifecycle initiatives
- IC-500 (HtrA1 Inhibitor): Complementary MOA adding to development stage AMD franchise

Gene Therapy for Inherited Retinal Diseases (Orphan)

- Broad and diversified pipeline
 - Novel and cutting edge AAV gene therapy options
 - Five programs in orphan inherited retinal diseases w/ no currently approved therapies

Experienced Team with Extensive Drug Development Expertise in Retina

Strong Cash Position and Well-Capitalized

- ~\$210 million in cash and marketable securities as of 12/31/20









STRONG SENIOR TEAM WITH SIGNIFICANT OPHTHALMOLOGY EXPERIENCE

GLENN SBLENDORIO Chief Executive Officer					
PRAVIN DUGEL, MD Chief Strategy and Business Officer					
DAVID CARROLL Chief Financial Officer					
KEITH WESTBY Chief Operating Officer					
ABRAHAM SCARIA, PHD Chief Scientific Officer					
EVELYN HARRISON Chief Clinical Operations Officer					
DHAVAL DESAI, PHARM D Chief of Staff					

IVERIC BIO PIPELINE

Therapeutics

AAV Gene Therapies

Indication	Res	Pre-clin	P1	P2	P3	Milestones
Zimura: GA secondary to AMD						<ul style="list-style-type: none"> GATHER1 (1st Phase 3): Positive 12 & 18-month data reported GATHER2 (2nd Phase 3): Target completion of enrollment <u>3Q 2021</u>
Zimura: Stargardt Disease						<ul style="list-style-type: none"> Expanded enrollment (up to ~25 additional patients) ongoing
IC-500 (anti-HtrA1): GA secondary to AMD						<ul style="list-style-type: none"> Plan to file IND in <u>2H 2022</u>
IC-100: RHO-adRP						<ul style="list-style-type: none"> Plan to initiate Phase 1/2 in <u>2H 2021</u>
IC-200: <i>BEST1</i> -related IRDs						<ul style="list-style-type: none"> Plan to initiate Phase 1/2 in <u>2H 2021</u>
miniCEP290: LCA10						<ul style="list-style-type: none"> Identify lead construct in <u>2Q 2021</u>
miniABCA4: Stargardt Disease*						<ul style="list-style-type: none"> Additional results expected in <u>1H 2021</u>
miniUSH2A: <i>USH2A</i> -related IRDs*						<ul style="list-style-type: none"> Preliminary results expected in <u>1H 2021</u>

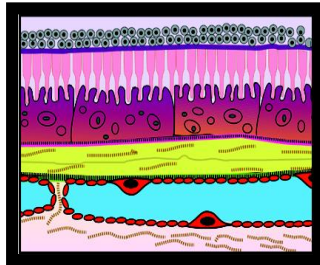
WHAT IS AGE-RELATED MACULAR DEGENERATION (AMD)?

AMD LEADS TO PROGRESSIVE VISION LOSS WITH END-STAGE ATROPHY

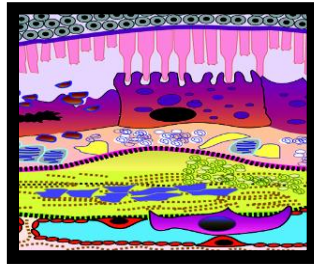


COMMON PERCEPTION: ADVANCED AMD IS EITHER DRY (LEADING TO GA) OR WET

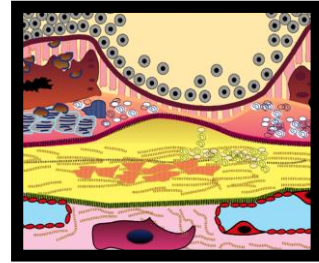
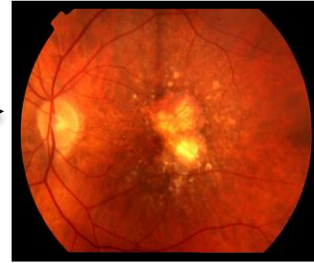
NORMAL



EARLY DRY AMD DEPOSITS



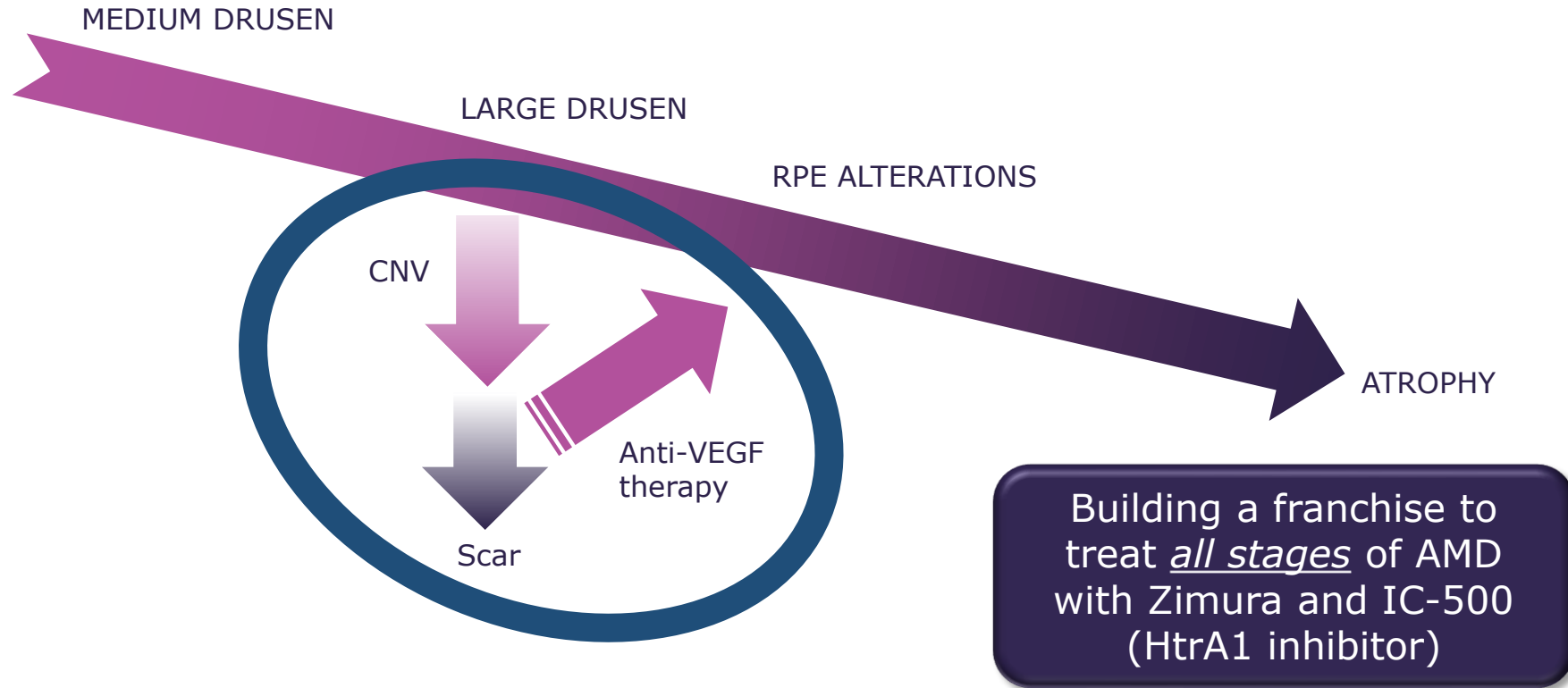
LATE DRY AMD "GEOGRAPHIC ATROPHY"



"NEOVASCULAR" AMD



PATHWAY OF AMD DISEASE PROGRESSION



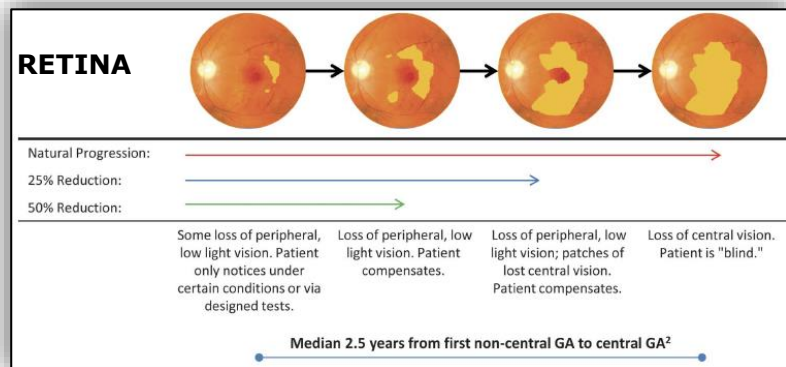
GEOGRAPHIC ATROPHY: GROWTH OVER TIME



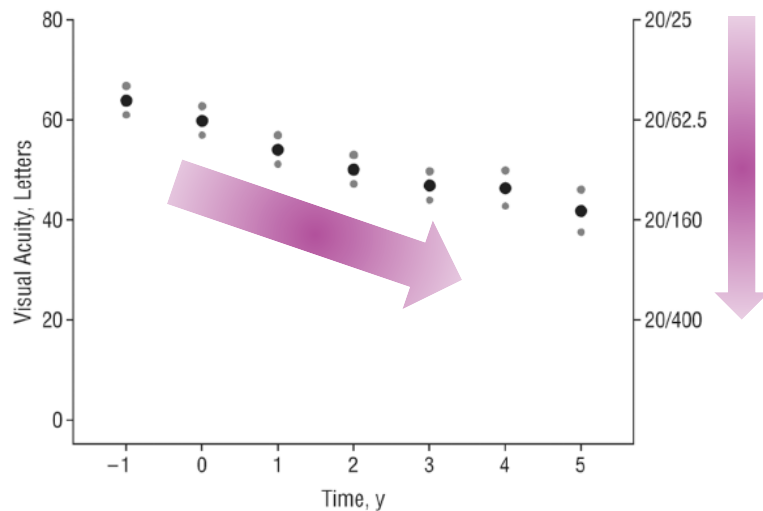
GEOGRAPHIC ATROPHY: GROWTH OF AREA & LOSS OF VISION

GEOGRAPHIC ATROPHY: LOSS OF PHOTORECEPTORS OVER TIME

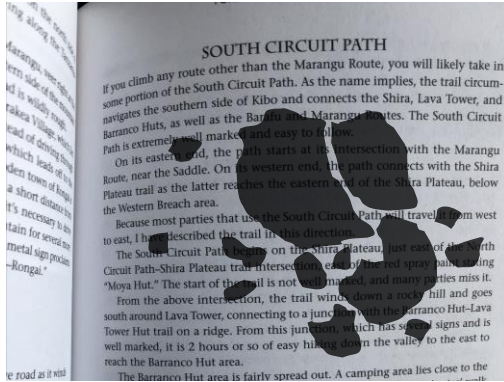
INCREASE IN AREA OF DEGENERATION OVER TIME



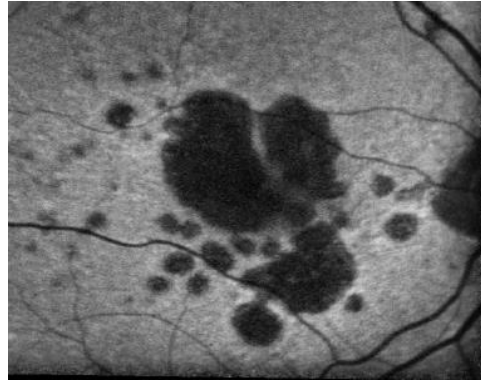
LOSS OF VISION OVER TIME



GEOGRAPHIC ATROPHY: IMPACT ON FUNCTIONAL VISION IN DAILY LIFE



**Areas of missing vision
(scotoma)**



**Areas of geographic atrophy
(Dead retinal cells)**



**Areas of missing vision
(scotoma)**

WHAT DOES COMPLEMENT HAVE TO DO WITH AMD?

GENETIC LINK: COMPLEMENT & AMD

"IN INDIVIDUALS HOMOZYGOUS FOR THE RISK ALLELE, THE LIKELIHOOD OF AMD IS INCREASED BY A FACTOR OF 7.4"

A common haplotype in the complement regulatory gene factor H (*HF1/CFH*) predisposes individuals to age-related macular degeneration

Gregory S. Hageman^{a,h,i}, Don H. Anderson^{h,d}, Lincoln V. Johnson^{h,d}, Lisa S. Hancox^a, Andrew J. Talber^a, Lisa I. Hardisty^a, Jill L. Hageman^a, Heather A. Stockman^a, James D. Borchardt^a, Karen M. Gehrs^a, Richard J. H. Smith^a, Giuliana Silvestriⁱ, Stephen R. Russell^a, Caroline C. W. Klaverⁱ, Irene Barbazetto^h, Stanley Chang^h, Lawrence A. Yannuzzi^h, Gaetano R. Barile^h, John C. Merriam^h, R. Theodore Smith^h, Adam K. Olsh^j, Julie Bergeronⁱ, Jana Zeman^h, Joanna E. Merriam^h, Bert Goldⁱ, Michael Deanⁱ, and Rando Allikmets^{h,k,l}

Source: Proc Natl Acad Sci U S A 2005, 102(20), 7227-7232

Complement Factor H Polymorphism in Age-Related Macular Degeneration

Robert J. Klein,¹ Caroline Zeiss,^{2*} Emily Y. Chew,^{3*} Jen-Yue Tsai,^{4*} Richard S. Sackler,¹ Chad Haynes,¹ Alice K. Henning,⁵ John Paul SanGiovanni,³ Shrikant M. Mane,⁶ Susan T. Mayne,⁷ Michael B. Bracken,⁷ Frederick L. Ferris,³ Jurg Ott,¹ Colin Barnstable,² Josephine Hoh^{7†}

Source: Science. 2005 Apr 15;308(5720):385-389

Complement Factor H Variant Increases the Risk of Age-Related Macular Degeneration

Jonathan L. Haines,¹ Michael A. Hauser,² Silke Schmidt,² William K. Scott,² Lana M. Olson,¹ Paul Gallins,² Kylee L. Spencer,¹ Shu Ying Kwan,² Maher Nouredine,² John R. Gilbert,² Nathalie Schnetz-Boutaud,¹ Anita Agarwal,³ Eric A. Postel,⁴ Margaret A. Pericak-Vance^{2*}

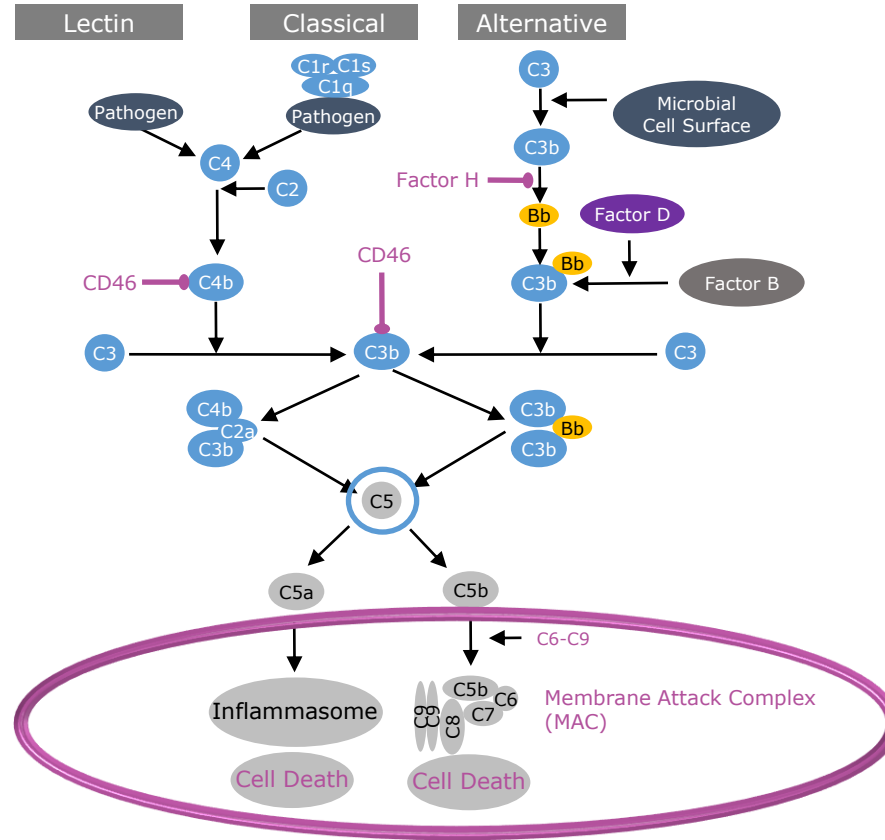
Source: Science 2005, 308(5720), 419-421

Complement Factor H Polymorphism and Age-Related Macular Degeneration

Albert O. Edwards,^{1*} Robert Ritter III,¹ Kenneth J. Abel,² Alisa Manning,³ Carolien Panhuysen,^{3,6} Lindsay A. Farrer^{3,4,5,6,7}

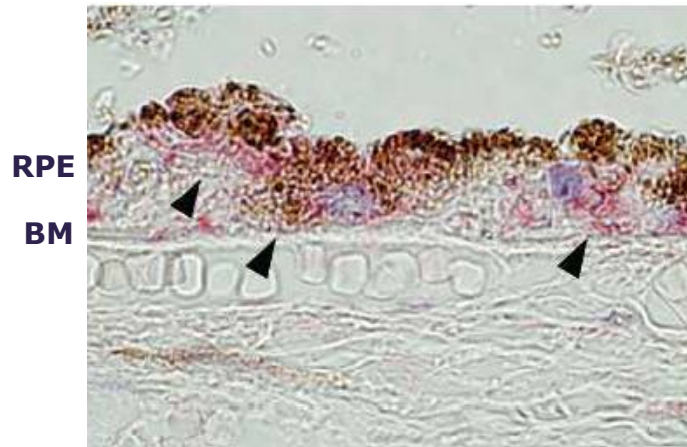
Source: Science 2005, 308(5720), 421-424

COMPLEMENT PATHWAY: INFLAMMASOME AND MAC → CELL DEATH



INFLAMMASOME ACTIVATION LEADING TO CELL DEATH IN AMD AFFECTED EYES

DRY AMD

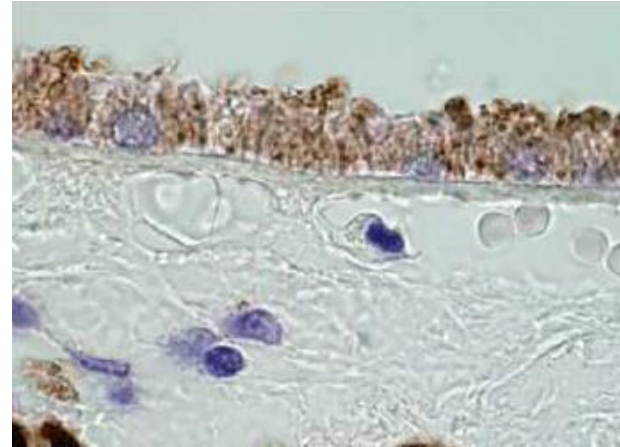


RPE

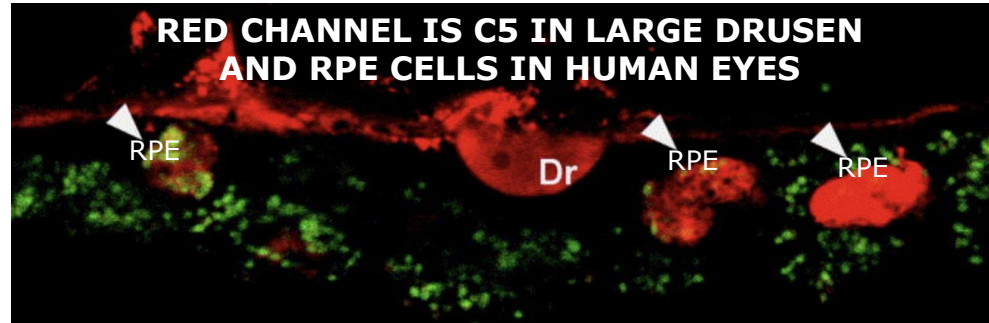
BM

RPE: Retinal pigment
Epithelium
BM: Bruch's membrane

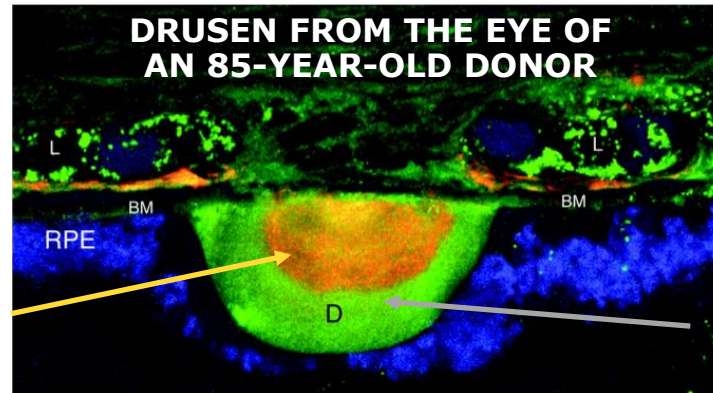
NO AMD



PRESENCE OF C5 AND MAC ACTIVATION LEADING TO CELL DEATH IN AMD



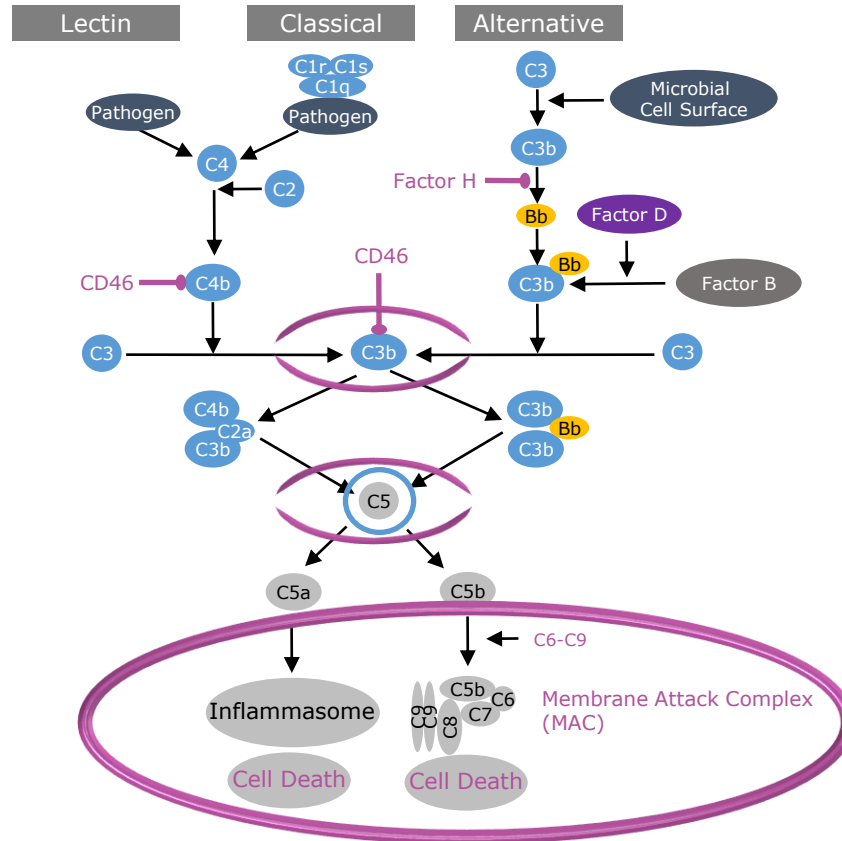
**C5-9 membrane attack
complex of complement**



Complement factor H

WHY IS ZIMURA® IMPORTANT?

COMPLEMENT PATHWAY



Inhibit the 2 triggers of cell death, preserving the remainder of pathway

**DO WE HAVE EVIDENCE OF
ZIMURA'S EFFICACY IN GA?**

ZIMURA PHASE 1/2A DRY AMD (GA) – COMPLETED*

STUDY DESIGN

Intravitreal Zimura was administered for a maximum of 5 injections at one of two dose levels (0.3 mg/eye or 1mg/eye)

47 PATIENTS ENROLLED

0.3 mg dose group (n=24)

1 mg dose group (n=23)



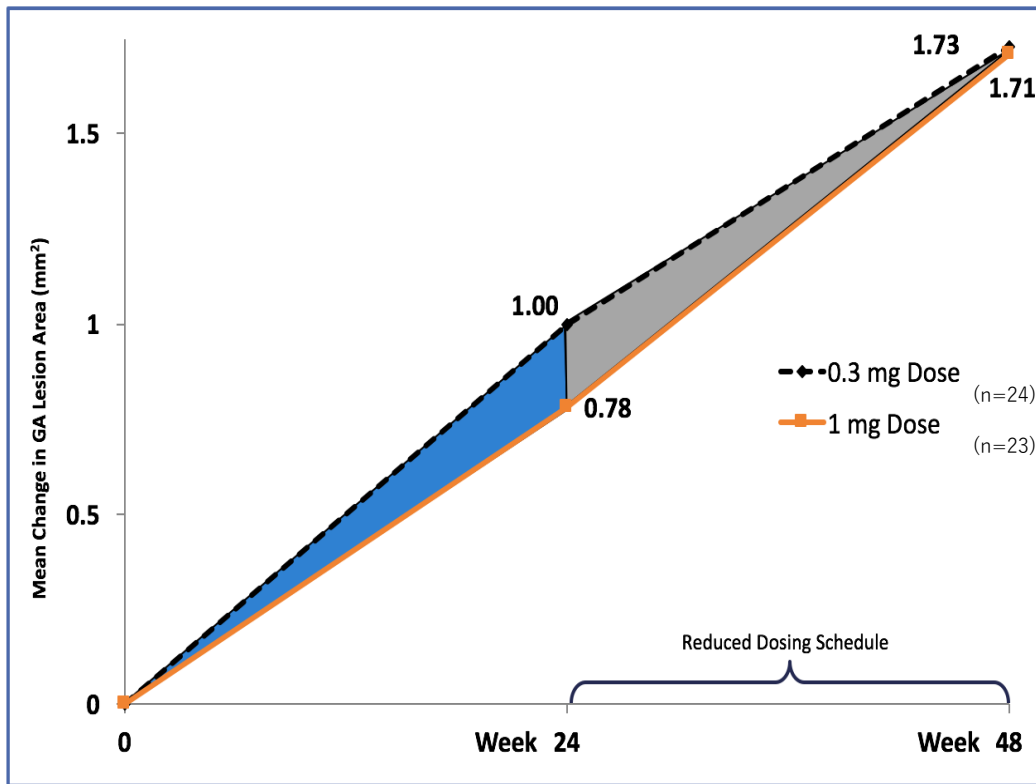
ZIMURA PHASE 1/2A DRY AMD (GA) – COMPLETED

POTENTIAL EFFICACY SIGNAL

- Presence of a dose-response trend with “on-off effect”

SAFETY

- No Zimura related adverse events
- Zero incidence of wet AMD in eyes treated with Zimura



ZIMURA PHASE 3 PROGRAM IN GEOGRAPHIC ATROPHY SECONDARY TO AMD

GATHER 1
Geographic Atrophy Therapy Trial

GATHER 2
Geographic Atrophy Therapy Trial

(Geographic Atrophy Therapy Trials)

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GATHER1 (OPH2003): TRIAL DESIGN

- **Screening trial:** designed similar to a traditional Phase 3 but with fewer patients
- **Minimized bias:** patient, evaluating physician, reading center, sponsor are all masked
- **Valid control:** sham control arm
- Independent masked reading center reviewing the images; images for each visit were evaluated independently
- **Robust statistical analysis:** prespecified statistical analysis plan (SAP) and detailed sensitivity testing
- Prespecified strength of evidence needed to meet the standard requirement of a **0.0125 one-sided false positive error rate** (incorporating an adjustment for multiplicity arising from comparing each dose with the Sham control) to achieve statistical significance

GATHER1: PRESPECIFIED SCREENING TRIAL

DESIGNED AS A REGISTRATION TRIAL WITH THREE POTENTIAL OUTCOMES:

Negative Trial:

- Low level or no benefit observed: would not move forward with a subsequent trial

Positive Phase 2 Trial:

- Moderate, clinically relevant benefit but without statistically significant
p-value: move forward with two larger Phase 3 clinical trials

Positive Phase 3 Trial:

- Statistically significant benefit (as observed in both Zimura 2 mg and 4 mg groups): trial could potentially serve as a registration trial and only one more Phase 3 trial would be required for regulatory approval

GATHER1: TRIAL DESIGN

- Randomized, masked (patient, evaluating physician, reading center, sponsor), sham controlled clinical trial
- Cohorts included in the pre-specified statistical analysis of the primary endpoint at Month 12*:
 - Zimura 4 mg dose
 - Zimura 2 mg dose
 - Sham
- 286 subjects were enrolled for monthly treatment with Zimura or Sham for 18 months
 - ~75% of the patients were enrolled in the US
- Primary efficacy endpoint: Mean rate of change in GA over 12 months measured by fundus autofluorescence (FAF) at three time points: Baseline, Month 6, and Month 12 (square root transformation of GA lesion)

DUKE READING CENTER: IMAGING ANALYSIS OVERVIEW

- Completely masked assessment
- Images for each visit evaluated independently
- Two experienced primary readers analyze the GA lesion size on FAF with RegionFinder
- > 10% discrepancy will be arbitrated by Reading Center Director: Glenn Jaffe, MD
- Supportive modalities: OCT and NIR imaging



GATHER1: DOSE GROUPS

MASKED THROUGHOUT THE ENTIRE PROCESS

RANDOMIZATION

Part 1 – 1 : 1 : 1

1 mg
N=26

2 mg
N=25

Sham
N=26

Part 2 – 1 : 2 : 2

2 mg
N=42

Sham
N=84

4 mg
N=83

EFFICACY EVALUATION BASED ON PRESPECIFIED STATISTICAL ANALYSIS PLAN (SAP):

- Zimura 2 mg vs. Sham: subjects randomized from Part 1 were combined with the subjects randomized from Part 2, where the analysis included a regression factor by part

GATHER1: DOSE GROUPS

RANDOMIZATION

Part 1 – 1 : 1 : 1

1 mg
N=26

2 mg
N=25

Sham
N=26

Part 2 – 1 : 2 : 2

2 mg
N=42

Sham
N=84

4 mg
N=83

EFFICACY EVALUATION BASED ON PRESPECIFIED STATISTICAL ANALYSIS PLAN (SAP):

- Zimura 4 mg vs. Sham: based only on subjects randomized in Part 2

GATHER1: DOSING REGIMEN

PART 1:

Primary Endpoint at Month 12



	D1	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18
Zimura 2mg																			
Zimura 1mg																			
Sham																			



Zimura 2mg



Zimura 1mg



Sham

PART 2:

Primary Endpoint at Month 12



	D1	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18
Zimura 2mg																			
Zimura 4mg																			
Sham																			



Zimura 2mg + Sham



Zimura 2mg + Zimura 2mg



Sham + Sham

GATHER1: KEY OPHTHALMIC INCLUSION CRITERIA (STUDY EYE)

- Non-foveal GA secondary to dry AMD
- Total GA area ≥ 2.5 and ≤ 17.5 mm² (1 and 7 disk areas [DA] respectively), determined by screening images of FAF
- If GA is multifocal, at least one focal lesion should measure ≥ 1.25 mm² (0.5 DA)
- GA in part within 1500 microns from the foveal center
- The atrophic lesion must be able to be photographed in its entirety
- Best corrected visual acuity in the SE between 20/25 – 20/320, inclusive

GATHER1: PRIMARY EFFICACY ENDPOINT ACHIEVED FOR BOTH ZIMURA 2MG AND 4MG

Mean Rate of Change in Geographic Atrophy (GA) Area from Baseline to Month 12 (MRM Analysis) (Square Root Transformation, ITT Population)

Cohort	Zimura 2mg (N=67)	Sham 2mg (N=110)	Difference	P-value	% Difference
Mean Change in GA ^(a)	0.292 ^(c)	0.402 ^(c)	0.110	0.0072 ^(b)	27.38%

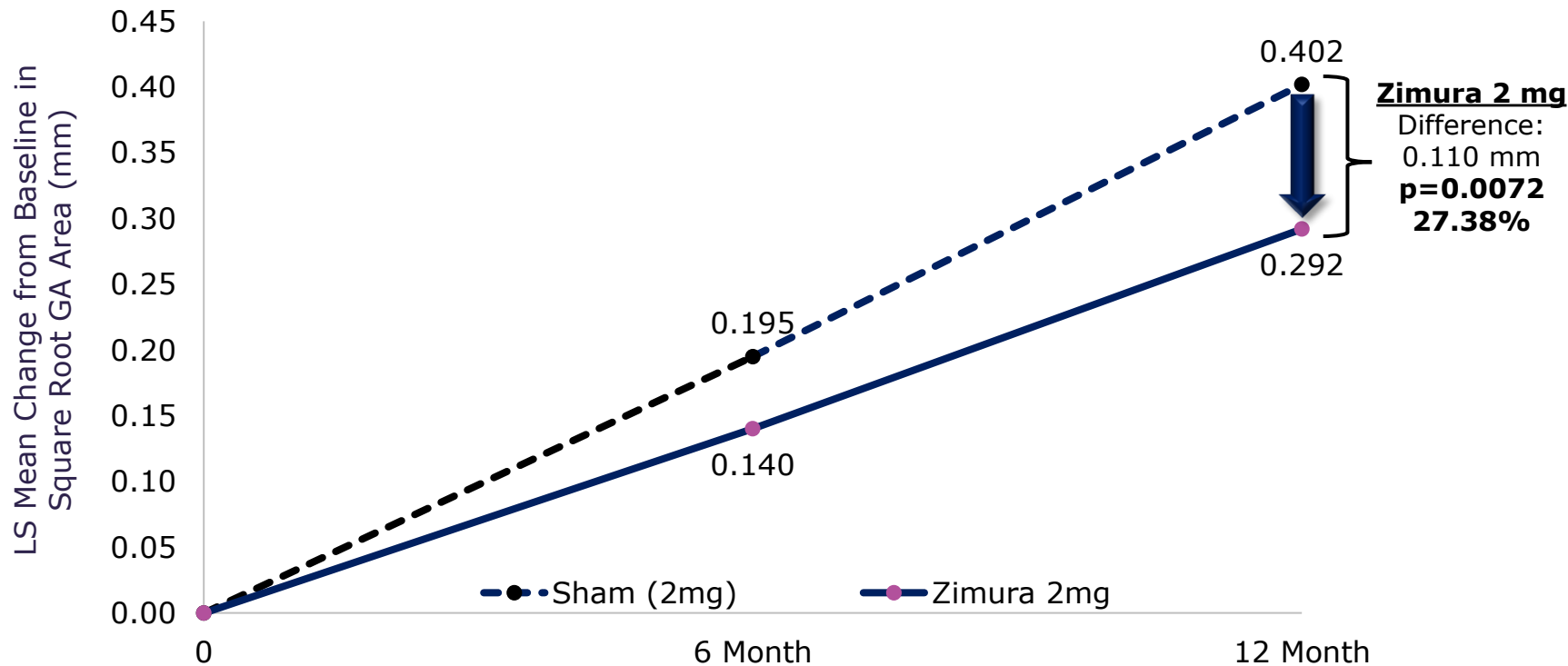
Cohort	Zimura 4mg (N=83)	Sham 4mg (N=84)	Difference	P-value	% Difference
Mean Change in GA ^(a)	0.321	0.444	0.124	0.0051 ^(b)	27.81%

(a) = mm, based on the least squares means from the MRM model

(b) = reflects statistically significant p-value; Hochberg procedure was used for significance testing

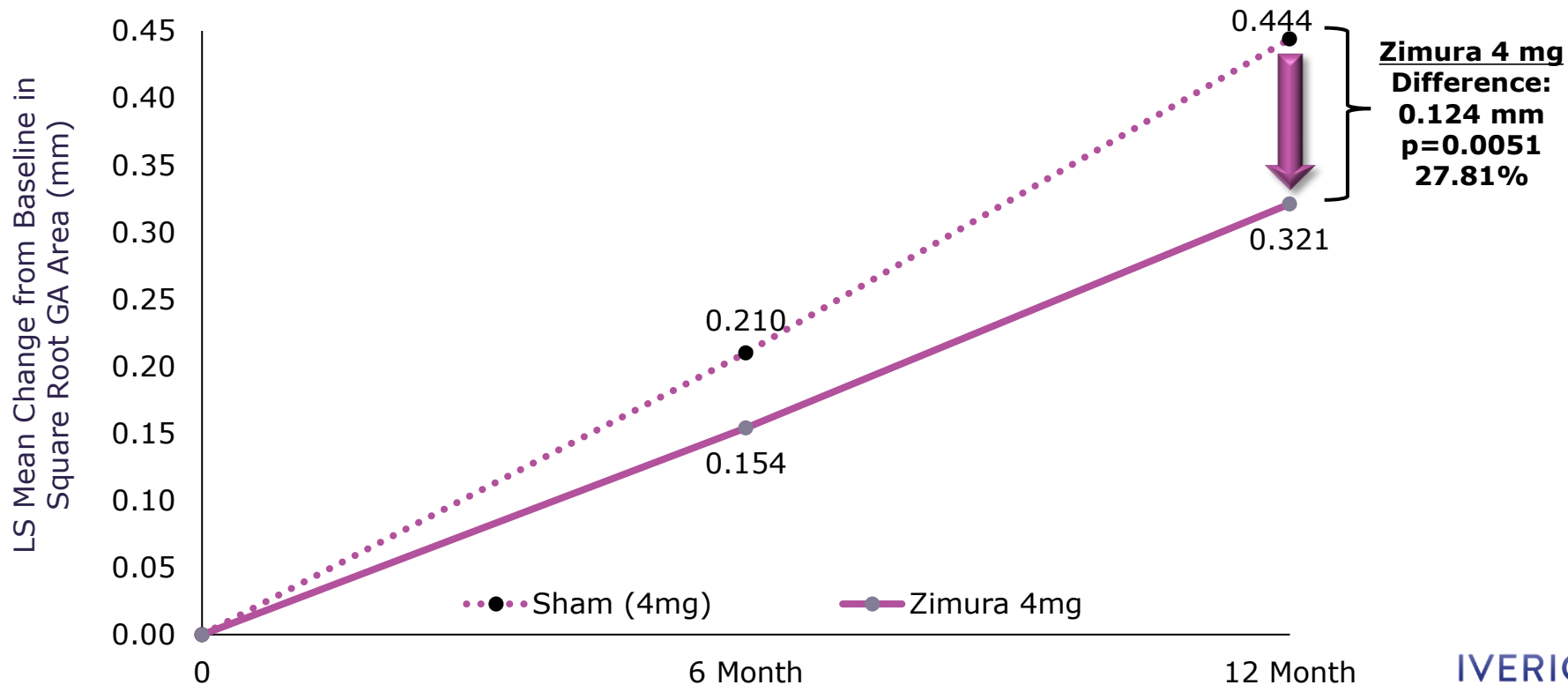
(c) = these least squares means are estimates of the MRM model, drawing on all available data, including data from groups with different randomization ratios in Part 1 and Part 2, and should not be interpreted as directly observed data

GATHER1: PRIMARY EFFICACY ENDPOINT ACHIEVED: ZIMURA 2 MG VS. SHAM

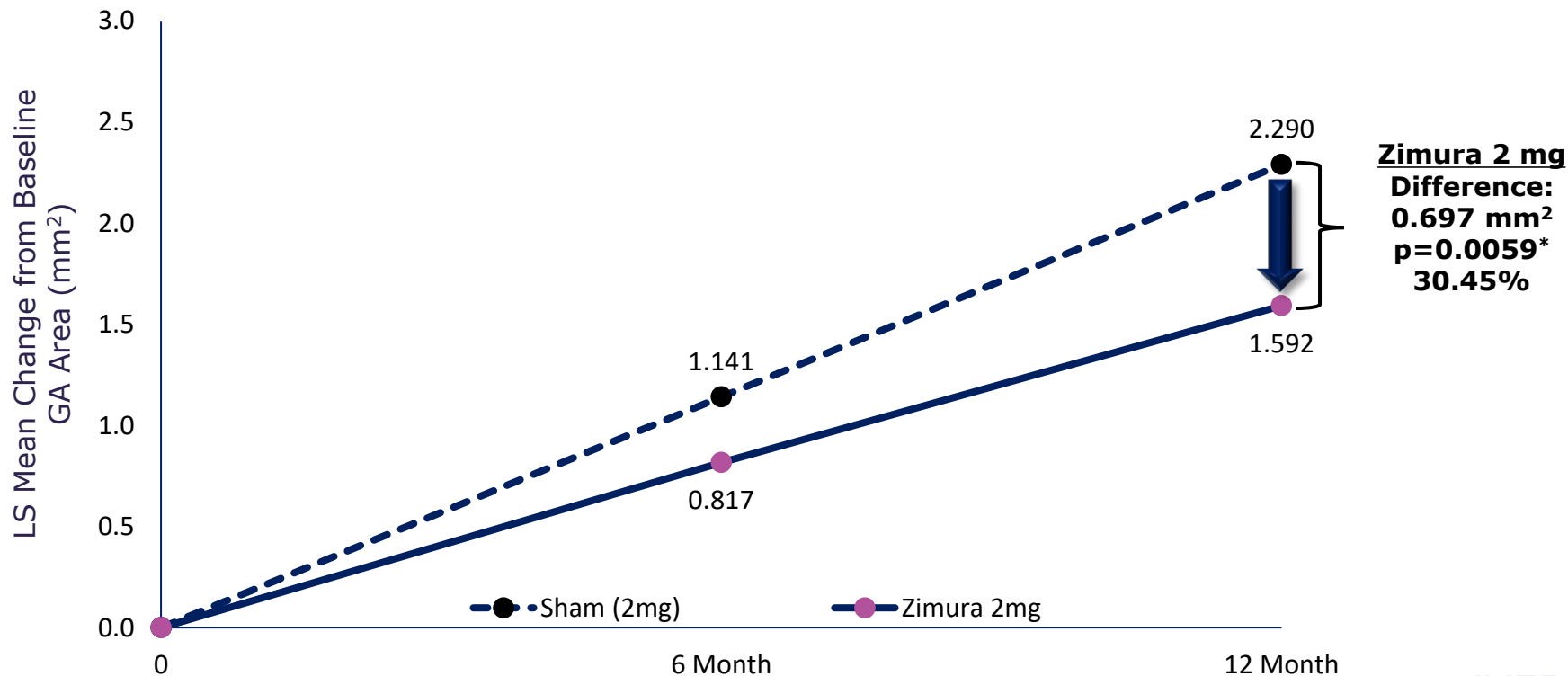


Based on LSMEANS from MRM Model; ITT Population Hochberg procedure used for significance testing. These least squares means are estimates of the MRM model, drawing on all available data, including data from groups with different randomization ratios in Part 1 and Part 2, and should not be interpreted as directly observed data.

GATHER1: PRIMARY EFFICACY ENDPOINT ACHIEVED: ZIMURA 4 MG VS. SHAM

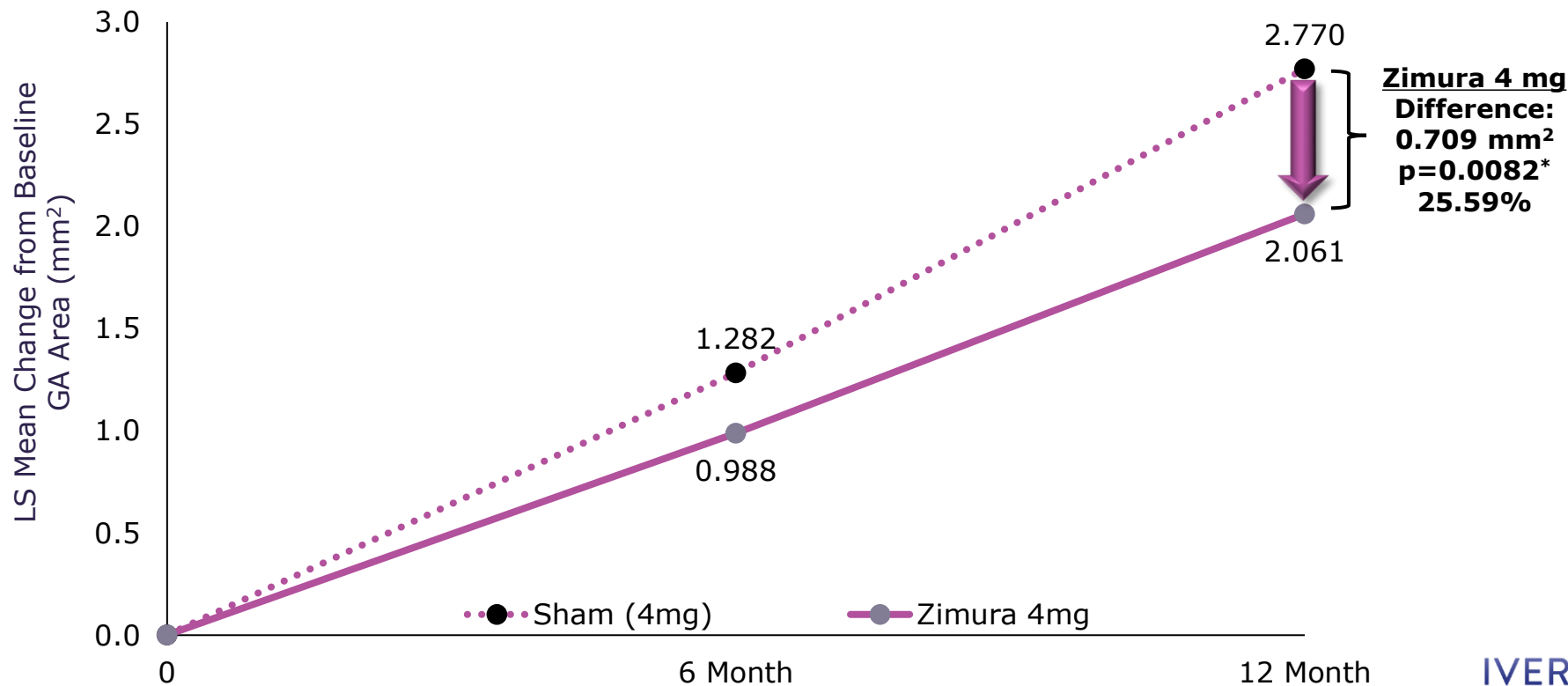


GATHER1: SUPPORTIVE EFFICACY ENDPOINT: ZIMURA 2 MG VS. SHAM (NON-SQUARE ROOT)



Based on LSMEANS from MRM Model; ITT Population Hochberg procedure used for significance testing. These least squares means are estimates of the MRM model, drawing on all available data, including data from groups with different randomization ratios in Part 1 and Part 2 and should not be interpreted as directly observed data. *Prespecified and descriptive analysis.

GATHER1: SUPPORTIVE EFFICACY ENDPOINT: ZIMURA 4 MG VS. SHAM (NON-SQUARE ROOT)



GATHER1: PRELIMINARY SAFETY ANALYSIS THROUGH MONTH 12*

FAVORABLE SAFETY PROFILE TO DATE

- Zimura was generally well tolerated after 12 months of administration
- No Zimura-related adverse events
- No Zimura-related inflammation
- No drug-related discontinuations from the trial attributed to Zimura
- No serious ocular adverse events in the study eye related to Zimura
- No cases of endophthalmitis reported in the clinical trial
- The most frequently reported ocular adverse events were related to the injection procedure
- Incidence of CNV in the untreated fellow eye was 10 patients (3.5%), and in the study eye was 3 patients (2.7%) in the sham control group, 1 patients (4.0%) in the Zimura 1 mg group, 6 patients (9.0%) in the Zimura 2 mg group, and 8 patients (9.6%) in the Zimura 4 mg group.

GATHER1: DOSING REGIMEN

PART 1:

Primary Endpoint at Month 12



	D1	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18
Zimura 2mg																			
Zimura 1mg																			
Sham																			

■ Zimura 2mg

■ Zimura 1mg

■ Sham

PART 2:

Primary Endpoint at Month 12



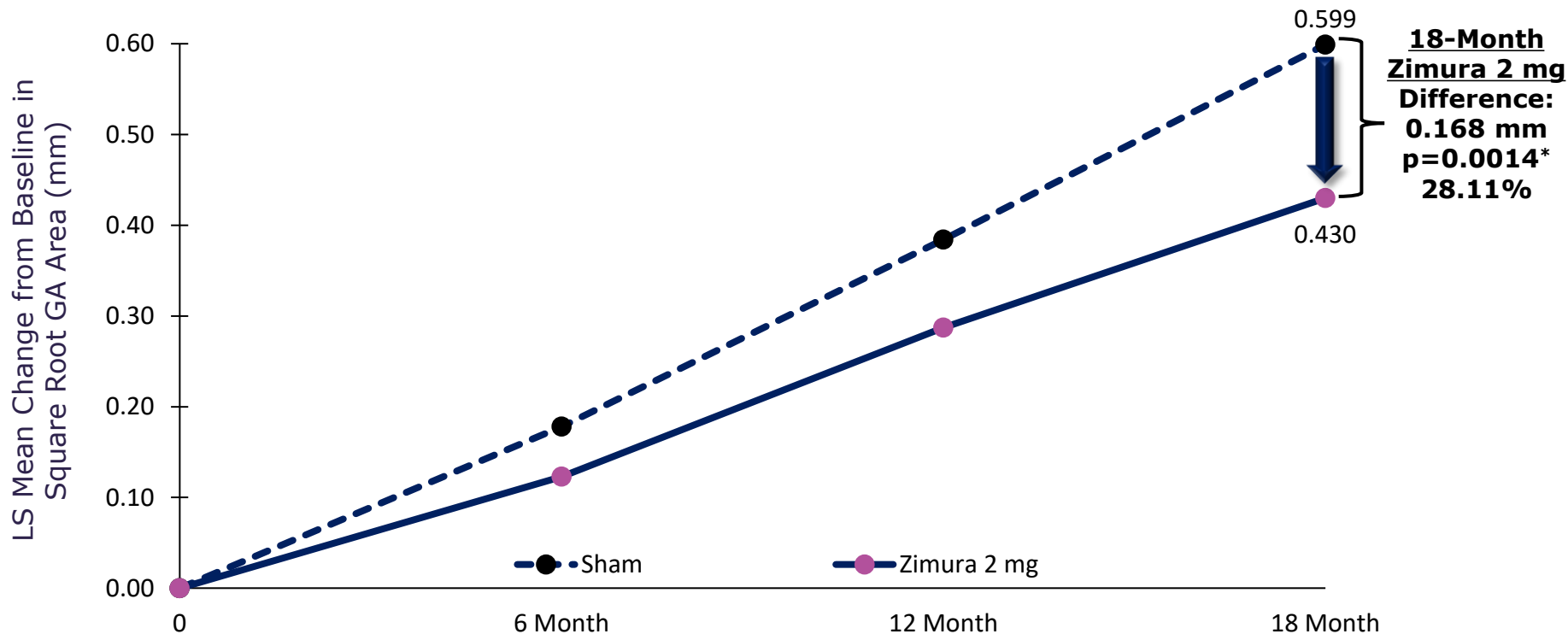
	D1	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18
Zimura 2mg																			
Zimura 4mg																			
Sham																			

■ Zimura 2mg + Sham

■ Zimura 2mg + Zimura 2mg

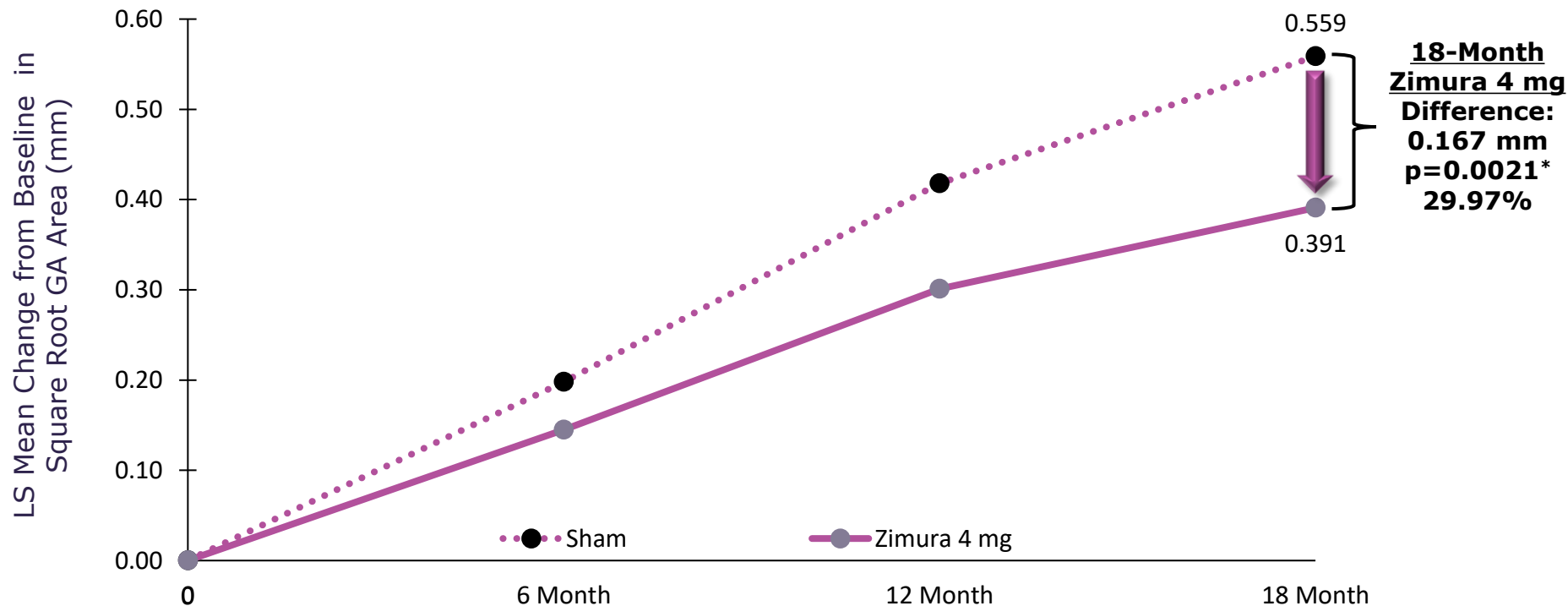
■ Sham + Sham

GATHER1: DECREASE IN GA GROWTH OVER 18 MONTHS ZIMURA 2 MG VS. SHAM (SQUARE ROOT TRANSFORMATION)



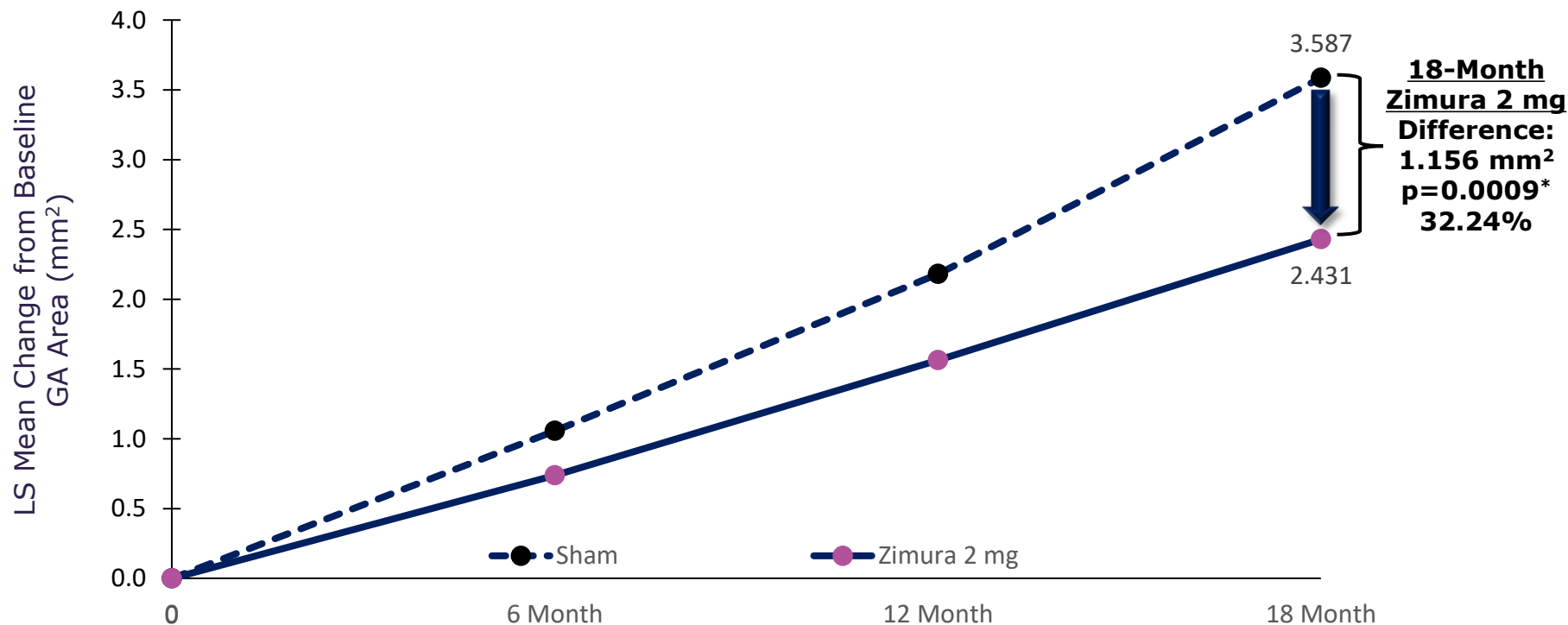
ITT Population; Based on LSMEANS from MRM Model, drawing on all available data, including data from groups with different randomization ratios in Part 1 and Part 2, and should not be interpreted as directly observed data; Prespecified and descriptive analysis. *18 month p values are descriptive in nature.

GATHER1: DECREASE IN GA GROWTH OVER 18 MONTHS ZIMURA 4 MG VS. SHAM (SQUARE ROOT TRANSFORMATION)



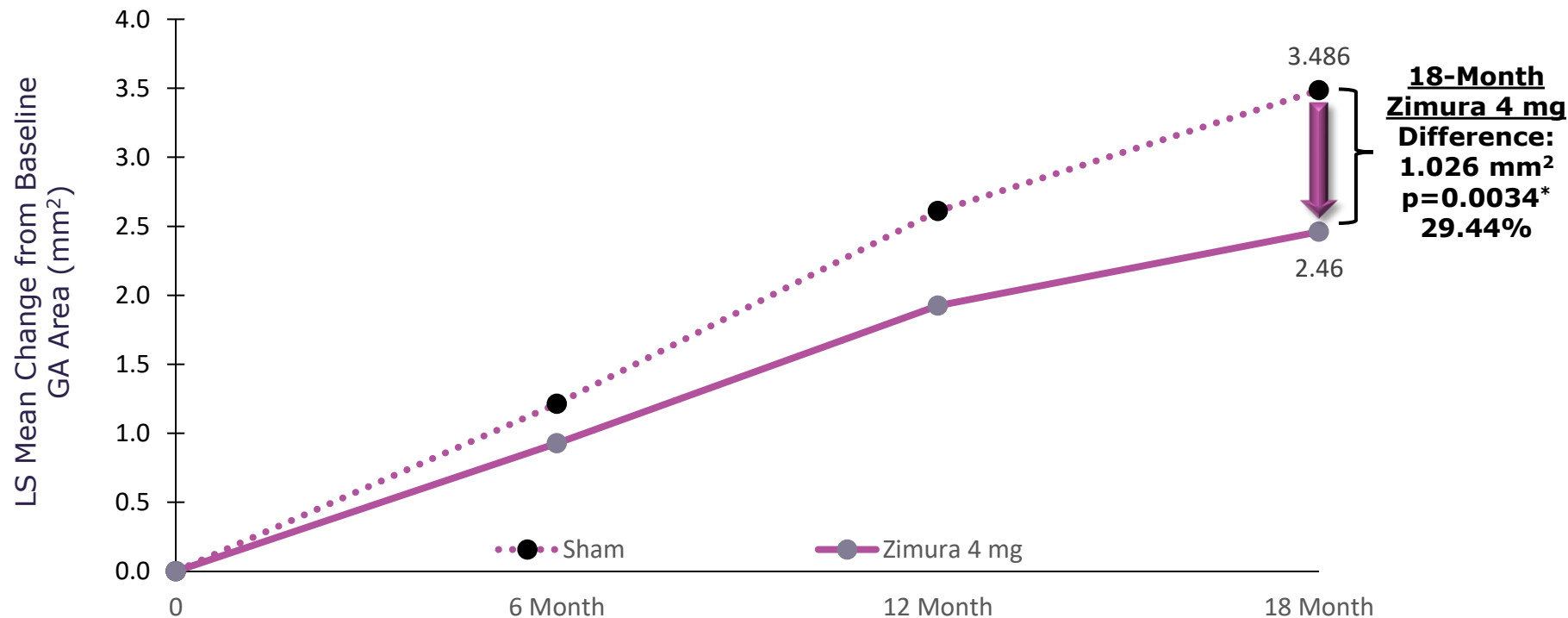
ITT Population; Based on the least squares means from the MRM Model drawing on all available data; Prespecified and descriptive analysis. *18 month p values are descriptive in nature.

GATHER1: DECREASE IN GA GROWTH OVER 18 MONTHS ZIMURA 2 MG VS. SHAM (NON-SQUARE ROOT)



ITT Population; Based on LSMEANS from MRM Model, drawing on all available data, including data from groups with different randomization ratios in Part 1 and Part 2, and should not be interpreted as directly observed data; Prespecified and descriptive analysis. *18 month p values are descriptive in nature.

GATHER1: DECREASE IN GA GROWTH OVER 18 MONTHS ZIMURA 4 MG VS. SHAM (NON-SQUARE ROOT)



ITT Population; Based on the least squares means from the MRM Model drawing on all available data; Prespecified and descriptive analysis. *18 month p values are descriptive in nature.

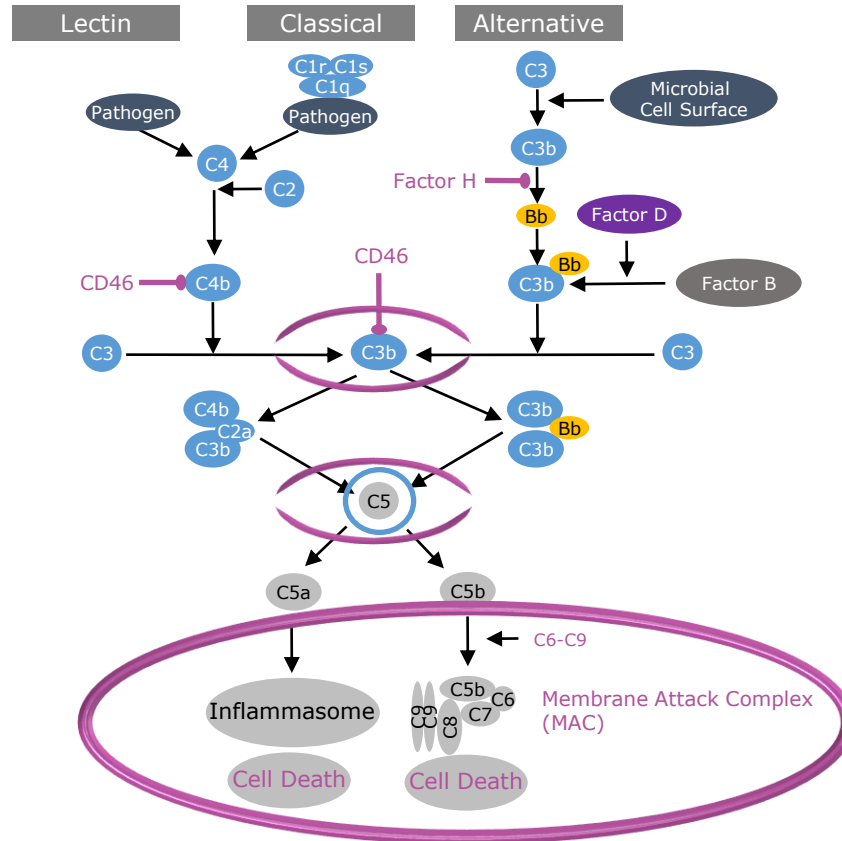
GATHER1: PRELIMINARY SAFETY ANALYSIS THROUGH MONTH 18*

FAVORABLE SAFETY PROFILE TO DATE

- Zimura was generally well tolerated after 18 months of administration
- No Zimura related adverse events
- No Zimura related inflammation
- No drug related discontinuations from the trial attributed to Zimura
- No serious ocular adverse events in the study eye related to Zimura
- No cases of endophthalmitis reported in the clinical trial
- The most frequently reported ocular adverse events were related to the injection procedure
- Incidence of CNV in the untreated fellow eye was 11 patients (3.8%), and in the study eye was 3 patients (2.7%) in the sham control group, 2 patients (7.7%) in the Zimura 1 mg group, 8 patients (11.9%) in the Zimura 2 mg group, and 13 patients (15.7%) in the Zimura 4 mg group.

WHAT ARE THE POTENTIAL ADVANTAGES OF INHIBITING AT THE C5 LEVEL?

COMPLEMENT PATHWAY



Inhibit the 2 triggers of cell death, preserving the remainder of pathway

C5 INHIBITION: POTENTIAL SAFETY ADVANTAGES

- Complement C3a receptors play roles in endotoxemia, ischemia-reperfusion, neurotrauma, and ALS models
- **C3aR is protective** in these models (knockout worsens disease)
- **C3-CR3 is also protective** in a retinal degeneration model
- Global blockade of C3 (as opposed to C5) may prevent the beneficial activities of C3a, while also increasing infection risk

C5 INHIBITION: POTENTIAL SAFETY ADVANTAGES

C3 INHIBITION: POTENTIAL FOR NEUROTOXICITY

“Deficiency of C3 or CR3 decreased microglial phagocytosis of apoptotic photoreceptors and increased microglial neurotoxicity to photoreceptors,...”

C3- and CR3-dependent microglial clearance protects photoreceptors in retinitis pigmentosa



Sean M. Silverman, Wenxin Ma¹, Xu Wang, Lian Zhao², and Wai T. Wong³

Complement activation has been implicated as contributing to neurodegeneration in retinal and brain pathologies, but its role in retinitis pigmentosa (RP), an inherited and largely incurable photoreceptor degenerative disease, is unclear. We found that multiple complement components were markedly up-regulated in retinas with human RP and the rd10 mouse model, coinciding spatiotemporally with photoreceptor degeneration, with increased C3 expression and activation localizing to activated retinal microglia. Genetic ablation of C3 accelerated structural and functional photoreceptor degeneration and altered retinal inflammatory gene expression. These phenotypes were recapitulated by genetic deletion of CR3, a microglia-expressed receptor for the C3 activation product iC3b, implicating C3-CR3 signaling as a regulator of microglia-photoreceptor interactions. Deficiency of C3 or CR3 decreased microglial phagocytosis of apoptotic photoreceptors and increased microglial neurotoxicity to photoreceptors, demonstrating a novel adaptive role for complement-mediated microglial clearance of apoptotic photoreceptors in RP. These homeostatic neuroinflammatory mechanisms are relevant to the design and interpretation of immunomodulatory therapeutic approaches to retinal degenerative disease.

**WHAT IS THE LEVEL OF
STATISTICAL CONFIDENCE
FOR THIS PIVOTAL TRIAL?**

GATHER1: ANALYZED GEOGRAPHIC ATROPHY DATA

DATA FROM 85% OF THE PATIENTS WERE INCLUDED IN THE MONTH 12 ANALYSIS

	N (%) ¹
Missing at baseline ²	1 (<1%)
Missing at 6 months and at 12 months ²	36 (14%)
Missing at 6 months only	11 (4%)
Missing at 12 months only	30 (12%)
No missing	182 (70%)
	260 (100%)

¹ Sham, 2mg and 4mg groups

² Excluded from model for 2mg and 4mg

GATHER1: PRESPECIFIED MONTH 12 SENSITIVITY ANALYSES

REPLACE MISSING DATA USING MULTIPLE IMPUTATIONS, WITH
AN ADDED "SHIFT" INCREASE UNTIL SIGNIFICANCE IS LOST

	Zimura 2mg vs. Sham		Zimura 4mg vs. Sham	
Data Imputation Method	Difference**	P	Difference**	P
No imputation (primary analysis)	0.110	0.0072*	0.124	0.0051*
Impute mean value of same arm	0.119	0.0005*	0.152	<0.0001*
Impute mean value of opposite arm	0.075	0.0309*	0.107	0.0033*
Impute mean value of both arms	0.097	0.0047*	0.129	0.0003*
Impute mean value of sham arm	0.093	0.0056*	0.120	0.0008*

*Statistically significant (without adjustment for multiplicity)

** Difference in means of GA area (square root transformation)

GATHER1: SENSITIVITY ANALYSIS AT MONTH 12

STATISTICAL INTERPRETATION

- All analyses showed small impact of missing data on our overall conclusion on the primary endpoint
- The shift imputation analyses showed that statistical significance would only be lost for large shifts (~40% of observed treatment effect)
- Analysis results were robust to missing data

WHAT DISTINGUISHES THE GATHER1 DATA IN A POST-COVID WORLD?

GA TRIALS POST-COVID

- We believe GATHER1 is the only pre-COVID positive Phase 3 trial for GA
- New environment for clinical trial execution: Recruitment/retention

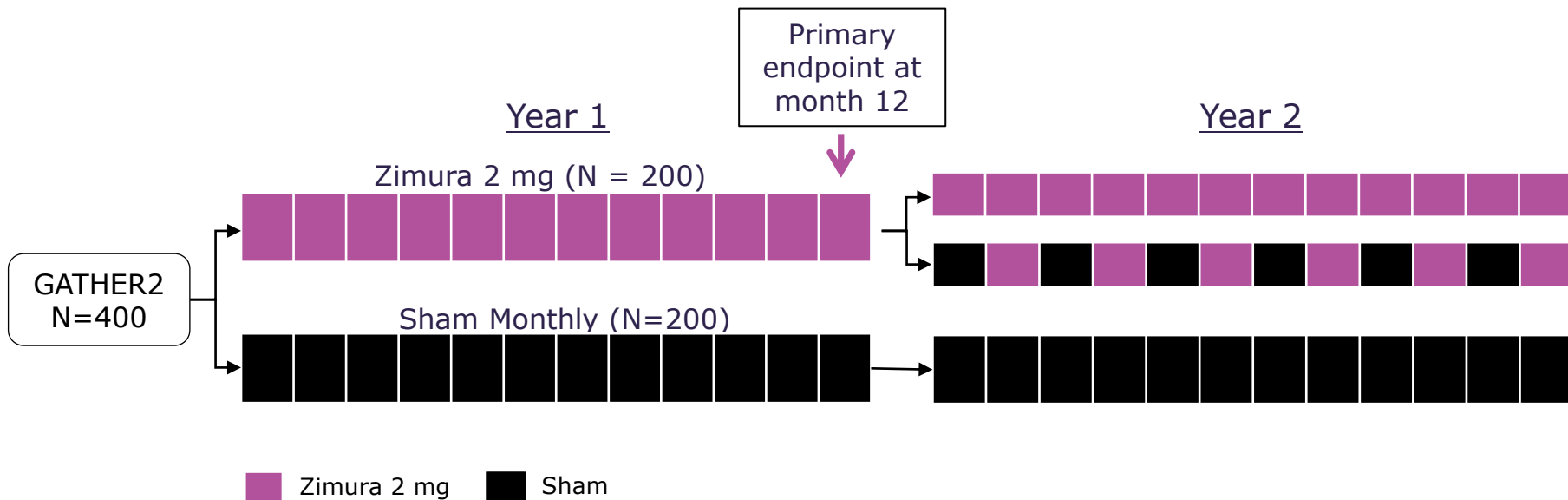
GATHER2 CLINICAL TRIAL



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GATHER2 (ISEE2008): TRIAL DESIGN

PRIMARY EFFICACY ENDPOINT: MEAN RATE OF CHANGE IN GA OVER 12 MONTHS
MEASURED BY FUNDUS AUTOFLUORESCENCE (FAF) AT THREE TIME POINTS:
BASELINE, MONTH 6, AND MONTH 12 (SQUARE ROOT TRANSFORMATION)



GATHER2: KEY OPHTHALMIC INCLUSION CRITERIA (STUDY EYE)

- Non-foveal GA secondary to dry AMD
- Total GA area ≥ 2.5 and ≤ 17.5 mm² (1 and 7 disk areas [DA] respectively), determined by screening images of FAF
- If GA is multifocal, at least one focal lesion should measure ≥ 1.25 mm² (0.5 DA)
- GA in part within 1500 microns from the foveal center
- The atrophic lesion must be able to be photographed in its entirety
- Best corrected visual acuity in the SE between 20/25 – 20/320, inclusive

GATHER2: KEY OPHTHALMIC EXCLUSION CRITERIA

- GA secondary to any condition other than AMD in either eye (e.g., drug-induced)
- Any prior treatment for AMD or any prior intravitreal treatment for any indication in either eye, except oral supplements of vitamins and minerals
- Evidence of CNV in either eye
- If subject develops CNV in the SE during the course of the trial, the subject remains in the study and continues to receive Zimura/Sham treatment (in addition to the standard of care anti-VEGF)
- Any ocular condition in the SE that would progress during the course of the study that could affect central vision or otherwise be a confounding factor









GATHER1: STRENGTHS

- Patient criteria
 - Non-foveal GA: faster growing lesions as compared to foveal lesions
- Appropriate masking for Phase 3 trial
 - Patients; investigators; reading center; sponsor
- Pre-specified statistical threshold for “positive” Phase 3 clinical trial
 - One-sided significance level of $p < 0.0125$ in either arm (adjusted for multiplicity based on trial design)
- Early and continuous positive treatment effect over 18 months
- Favorable safety profile with 18 months of continuous treatment

IVERIC BIO PIPELINE

Therapeutics

AAV Gene Therapies

Indication	Res	Pre-clin	P1	P2	P3	Milestones
Zimura: GA secondary to AMD						<ul style="list-style-type: none"> GATHER1 (1st Phase 3): Positive 12 & 18-month data reported GATHER2 (2nd Phase 3): Target completion of enrollment <u>3Q 2021</u>
Zimura: Stargardt Disease						<ul style="list-style-type: none"> Expanded enrollment (up to ~25 additional patients) ongoing
IC-500 (anti-HtrA1): GA secondary to AMD						<ul style="list-style-type: none"> Plan to file IND in <u>2H 2022</u>
IC-100: RHO-adRP						<ul style="list-style-type: none"> Plan to initiate Phase 1/2 in <u>2H 2021</u>
IC-200: <i>BEST1</i> -related IRDs						<ul style="list-style-type: none"> Plan to initiate Phase 1/2 in <u>2H 2021</u>
miniCEP290: LCA10						<ul style="list-style-type: none"> Identify lead construct in <u>2Q 2021</u>
miniABCA4: Stargardt Disease*						<ul style="list-style-type: none"> Additional results expected in <u>1H 2021</u>
miniUSH2A: <i>USH2A</i> -related IRDs*						<ul style="list-style-type: none"> Preliminary results expected in <u>1H 2021</u>

STARGARDT DISEASE

OPH2005: ZIMURA IN AUTOSOMAL RECESSIVE STARGARDT DISEASE – ONGOING

THE MOST COMMON INHERITED MACULAR DYSTROPHY IN BOTH CHILDREN AND ADULTS

- Phase 2b, randomized, double masked, sham controlled screening clinical trial
- Two arms:
 - Zimura 4mg
 - Sham
- ~ 95 subjects were previously enrolled for treatment with Zimura or sham for 18 months
- Primary Efficacy Endpoint
 - Mean rate of change over 18 months in the area of ellipsoid zone defect measured by en face SD-OCT
- Expanded enrollment (up to ~25 additional patients) ongoing

IC-500

HtrA1 Inhibitor

HTRA1 IN AMD

High Temperature Requirement A Serine Peptidase 1/ HtrA1

Compelling target for Geographic Atrophy and other forms of AMD

- AMD is highly heritable
 - Genetic component may account for 46-71% of risk
- Genome-Wide Association Studies (GWAS) highlight HtrA1 and complement pathway as the major genetic contributors to disease
- HtrA1 risk alleles
 - Most compelling known genetic risk for early and late AMD

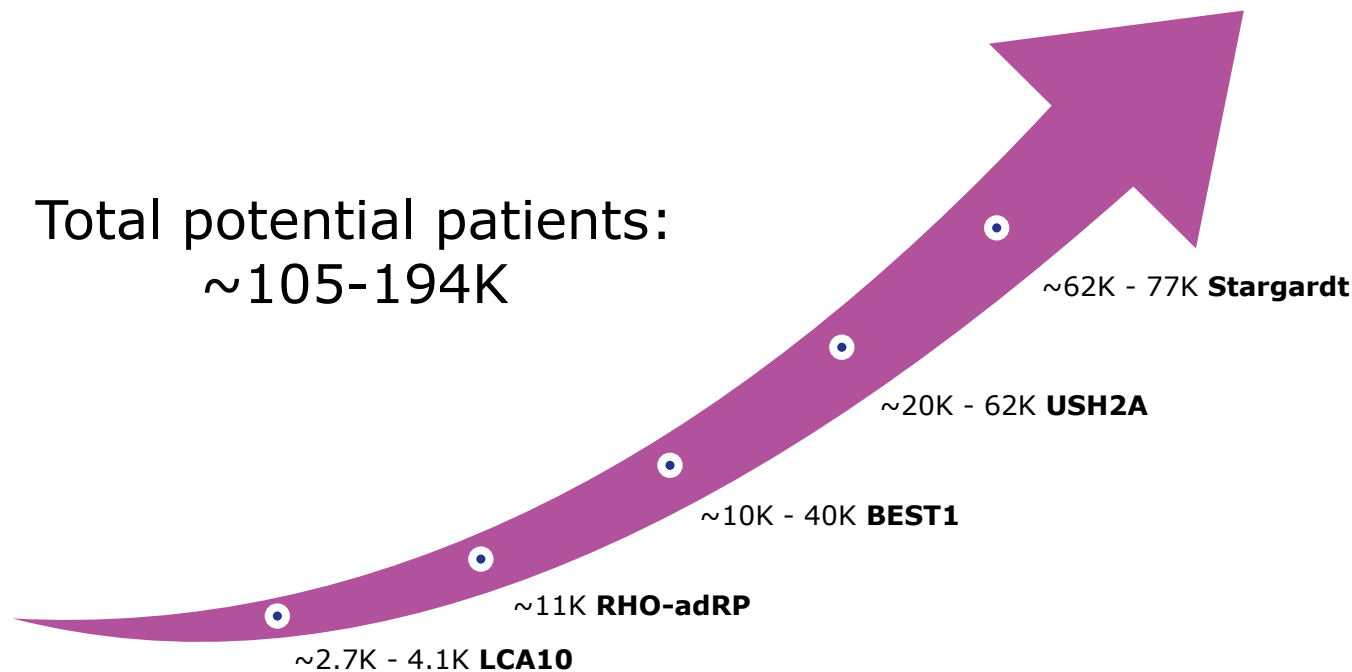
IC-500 OVERVIEW

- Rationale
 - Strong genetic link to age-related macular degeneration
 - HtrA1 expression and function
- HtrA1 target
 - RPE expression and protease function
- IC-500
 - Highly potent/specific inhibitor with favorable properties (e.g., inhibition of both intracellular and extracellular HtrA1)
 - Lead candidate currently in pre-clinical development

GENE THERAPY

LARGE POTENTIAL FOR PATIENTS WITH INHERITED RETINAL DISEASES (IRD)^{1,2}

Total potential patients:
~105-194K



¹ Estimated combined patient populations in US and EU5 for each indication based on published literature:

RHO-adRP estimate based on data from *Arch Ophthalmology* 2007 Feb; 125(2): 151-158. / *BEST1*-related estimate based on data from *Ophthalmic Genet.* 2017 ; 38(2): 143-147. doi:10.1080/13816810.2016.1175645 / LCA10 estimate based on data from various sources including Genetics Home Reference; *Am J Hum Genet* 2006 Sep; 79(3) 556-561; *Gene Reviews*, Leber Congenital Amaurosis, Last update May 2, 2013; *Human Mutation*, Mutation in Brief #956(2007) / Stargardt data from National Eye Institute, Genetics Home Reference and Progstar Natural History Study / *USH2A* estimates based on data from *Experimental Eye Research* Vol 79, Issue 2, Aug 2004: 167-173. ² Non risk-adjusted

IC-100: RHO-adRP PROGRAM SUMMARY

- Mutation agnostic approach
 - >150 identified rhodopsin (RHO) gene mutations
- Knockdown and replacement with a single AAV vector
 - Suppression of endogenous mutant, toxic rhodopsin protein
 - Replacement with healthy rhodopsin protein
- Proof-of-concept in two animal models (canine and mouse)
 - Naturally occurring canine disease model
 - Long-term preservation of retinal anatomy and function
- Phase 1/2 planned to initiate in 2H 2021

IC-200: *BEST1* PROGRAM SUMMARY

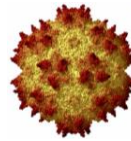
- Only known gene therapy currently in development for *BEST1*-related IRDs
- Therapy provides replacement for dysfunctional *BEST1* gene allowing production of normal bestrophin protein
- Proof-of-concept established in naturally occurring autosomal recessive *BEST1* canine model
- Phase 1/2 planned to initiate in 2H 2021

MINIGENE PROGRAMS

MINIGENE STRATEGY

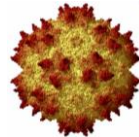
- AAV Vectors

- Extensive experience with intraocular application in both humans and animal models
- Well-documented safety profile
- Limited packaging capacity of <5kb



- Minigene Solution

- Allows for the potential treatment of genetic diseases previously not amenable to AAV approach by delivering a smaller but still functional gene



MINICEP290: LCA10 POTENTIAL PRODUCT CANDIDATE

- Significant Unmet Medical Need
 - Estimated Prevalence: ~2.7K - 4.1K in US & EU5 combined¹
 - Most common cause of LCA with early onset of vision loss in both eyes
- Construct provides replacement for mutated *CEP290* gene with a novel minigene
- Preliminary proof-of-concept in mouse model
 - Preservation of retinal structure and function
 - ~ 4.6x improvement in prolonging the functional rescue measured by ERG, extending the benefit from 3 to 14 weeks of age

¹ LCA10 estimate based on data from various sources including Genetics Home Reference; Am J Hum Genet 2006 Sep; 79(3) 556-561; Gene Reviews, Leber Congenital Amaurosis, Last update May 2, 2013; Human Mutation, Mutation in Brief #956(2007)

2021 GOALS

- Complete enrollment for GATHER2 in 3Q 2021
- Investigate multiple dosing schedules for IC-500 (HtrA1) as part of expanding development-stage AMD franchise
- Advance IC-100 (RHO-adRP) and IC-200 (*BEST1*-related IRDs) into the clinic
- Continue to strengthen leadership team through strategic hiring

DEVELOPING TRANSFORMATIVE THERAPIES FOR RETINAL DISEASES

March 2021
NASDAQ: ISEE

IVERIC
BIO

APPENDIX

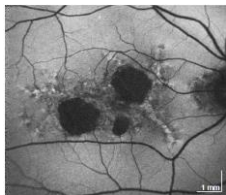
AGE-RELATED MACULAR DEGENERATION: A LEADING CAUSE OF VISUAL DISABILITY

ALL AMD: ESTIMATED PREVALENCE

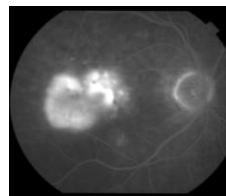
Worldwide: ~170 Million **YEAR 2040** → ~288 Million

United States: ~11 Million **YEAR 2050** → ~22 Million

GA Secondary to Dry AMD: Estimated Prevalence in 2020 ~1.5 Million in the US



Incidence of GA
~159,000/ Year (US)



Incidence of Wet AMD
~150,000/ Year (US)

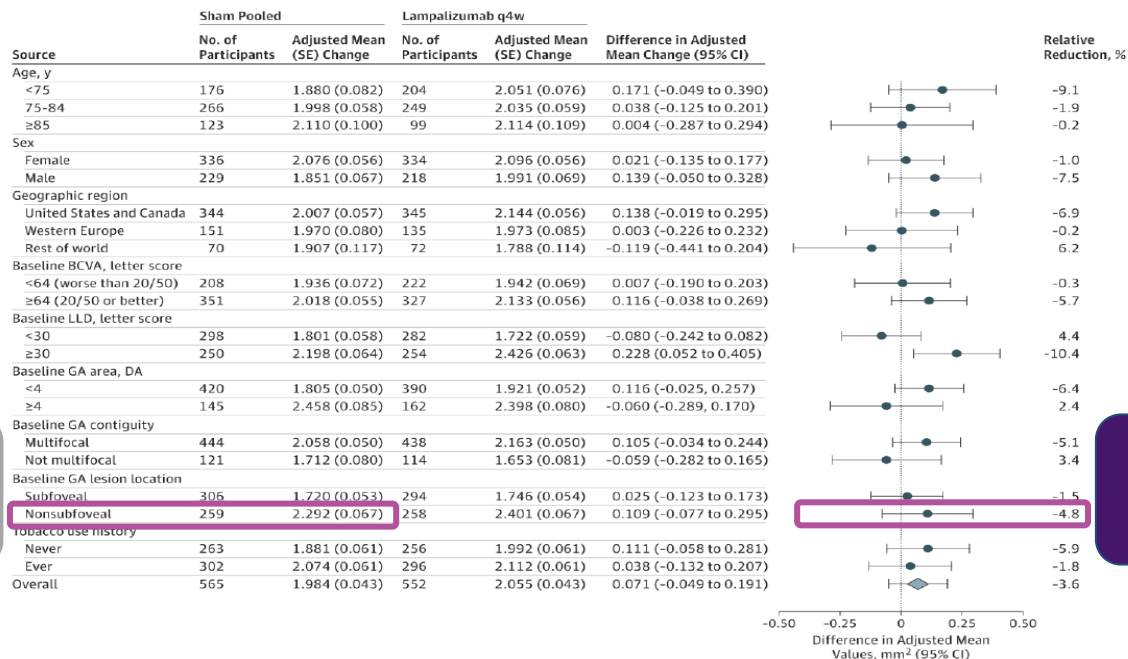
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GATHER1 BASELINE CHARACTERISTICS: GENERALLY BALANCED ACROSS COHORTS*

	Zimura 2mg N = 67	Sham for 2mg arm N = 110	Zimura 4mg N = 83	Sham for 4mg arm N = 84
Mean Age, Years	78.8	78.2	79.2	78.2
Female Gender, Number (%)	45 (67.2%)	79 (71.8%)	58 (69.9%)	61 (72.6%)
Active smoker, Number (%)	25 (37.3%)	36 (32.7%)	26 (31.3%)	29 (34.5%)
Non-Subfoveal GA, Number (%)	62 (92.5%)	104 (94.5%)	81 (97.6%)	82 (97.6%)
Mean GA Area, mm ²	7.33	7.42	7.90	7.45
Mean SQ Root GA Area, mm	2.62	2.63	2.72	2.64
Bilateral GA, Number (%)	67 (100%)	108 (98.2%)	83 (100%)	83 (98.8%)
Hyper Autofluorescence (%)	66 (98.5%)	109 (99.1%)	82 (98.8%)	83 (98.8%)
Mean BCVA (ETDRS Letters)	70.2	69.0	69.5	68.3
Mean LL BCVA (ETDRS Letters)	36.7	34.5	36.8	33.9
Low Luminance Deficit (BCVA-LL BCVA)	33.5	34.5	32.7	34.4

EXTRAFOVEAL SHAM GROWTH: CHROMA/SPECTRI & GATHER1

NON-SQUARE ROOT TRANSFORMATION



eFigure 2. Adjusted Mean Change in Geographic Atrophy (GA) Area From Baseline to Week 48 in the Study Eye by Clinical Subgroup, Chroma and Spectri Pooled

Chroma/Spectri

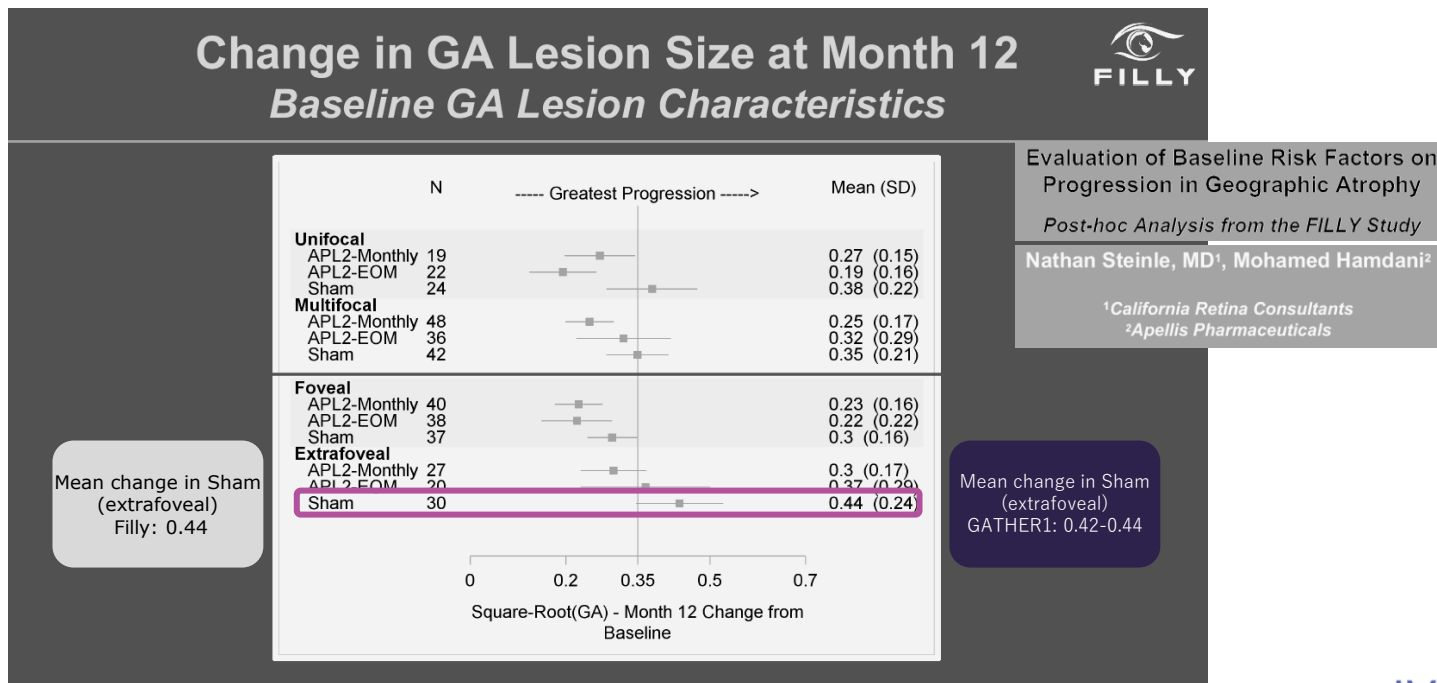
Mean change in
extrafoveal GA
2.292-2.401

GATHER1

Mean change in
extrafoveal GA
2.29-2.77

NONSUBFOVEAL/EXTRAFOVEAL SHAM GROWTH: CHROMA/SPECTRI/FILLY

SQUARE ROOT TRANSFORMATION



MIXED-EFFECT REPEATED MEASURES MODEL

- Used to assess the differences between Zimura 2mg or 4mg dose and their corresponding sham in rate of change of GA area (square root transformation) over 12 months
- The model included the following fixed and random effects:
 - Treatment: Sham vs dose
 - Study part (1 vs 2): only for 2 mg
 - Baseline VA: < 50 letters vs ≥ 50 letters
 - Size of baseline GA: < 4 disc area vs ≥ 4 disc area
 - Pattern of FAF at the junctional zone of GA: none/focal vs banded/diffuse
 - Visit (0, 6 mos or 12 mos) with unstructured correlation
 - Interaction terms between visit and all other factors

GATHER1: MEAN RATE OF CHANGE IN GA FOR ZIMURA 2 MG BY PART

**Mean Rate of Change in Geographic Atrophy (GA) Area from Baseline to Month 12
(MRM Analysis) (Square Root Transformation)**

Cohort		Zimura 2mg (N = 25)	Sham 2mg (N = 26)	Difference
Part 1	Mean Change in GA ^(a) (mm)	0.329	0.422	0.093
(a) = based on the least squared means from the MRM model				
Cohort		Zimura 2mg (N = 42)	Sham 2mg (N = 84)	Difference
Part 2	Mean Change in GA ^(a) (mm)	0.308	0.422	0.114
(a) = based on the least squared means from the MRM model				

Least square means are estimates from the MRM model, drawing on all available data, including data from groups with different randomization ratios in Part 1 and Part 2, and should not be interpreted as directly observed data.

GATHER1: SENSITIVITY ANALYSIS

Several pre-specified sensitivity analyses conducted for primary endpoint:

- Replaced missing data using multiple imputations, with an added “shift” increased until significance is lost
- Replaced missing data by
 - Mean value of same treatment arm
 - Mean value of opposite treatment arm
 - Mean value of both treatment arms
 - Mean value of sham arm
- Replaced missing data using “pattern mixture model” (useful to investigate “missing not at random” assumptions)

STARGARDT: PATHOPHYSIOLOGY AND PREVALENCE

- Stargardt disease is most commonly inherited in an autosomal recessive manner caused by mutations in the ABCA4 gene (STGD1)
- Estimated US & EU5 Prevalence: ~62K - 77K
- The ATP binding cassette (ABC) transporters are the largest and most diverse membrane transport system and associated with many important biological processes as well as various severe pathological conditions
- ABCA4, also known as ABCR, is a 250-kDa glycoprotein and a member of the ABCA subfamily of ABC. During the visual cycle, in absence of ATP, ABCA4 binds with high affinity and clears N-retinylidene-phosphatidylethanolamine

DECREASED COMPLEMENT ACTIVITY: RESCUED PHOTORECEPTORS

- “In this study, we attempted to protect cells against complement attack by increasing expression of CRRY in the RPE of *Abca4*^{-/-} mice”
- “CRRY is an important Complement Negative Regulatory Protein (CRP) in the mouse eye”

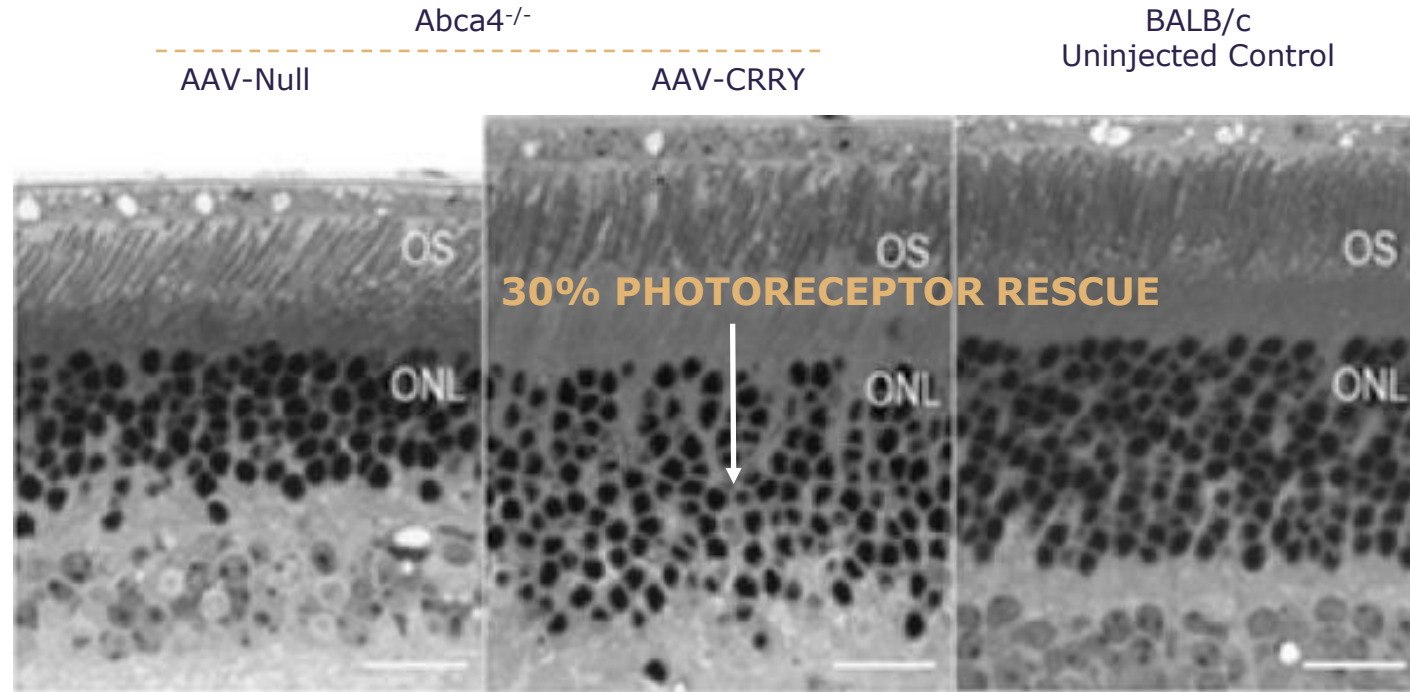


Complement modulation in the retinal pigment epithelium rescues photoreceptor degeneration in a mouse model of Stargardt disease

Tamara L. Lenis^{a,b,1}, Shanta Sarfare^{a,b,1,2}, Zhichun Jiang^{a,b}, Marcia B. Lloyd^{a,b}, Dean Bok^{a,b}, and Roxana A. Radu^{a,b,3}

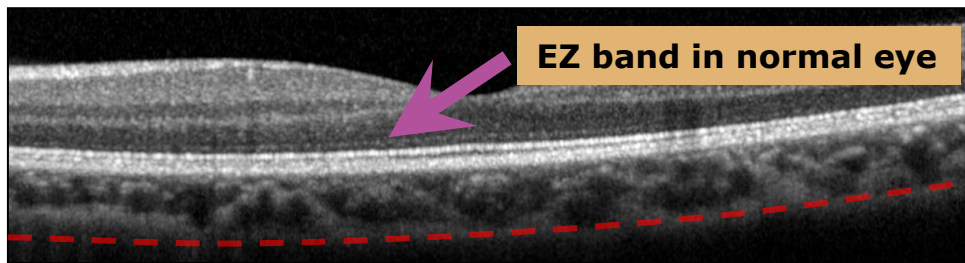
COMPLEMENT INHIBITION RESCUES PHOTORECEPTORS

REPRESENTATIVE RETINAL IMAGES FROM 1 YEAR OLD ALBINO ABCA4^{-/-} OR BALB/C MICE



OCT – INCLUSION/EXCLUSION CRITERIA

- There is at least one location of $\geq 250 \mu\text{m}$ EZ defect within the ETDRS subfields
- There are no areas of EZ loss outside the ETDRS subfields



Likely the A-scan threshold between
absent/preserved EZ

