Intraocular Pressure Outcomes With Aflibercept 8 mg and 2 mg in Patients With Diabetic Macular Edema Through Week 48 of the Phase 2/3 PHOTON Trial

Dilraj S Grewal MD, on behalf of the *PHOTON* study investigators

Duke University School of Medicine, Durham, North Carolina, USA

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Disclosures

- Dr Grewal is a consultant for EyePoint, Priovant, IvericBio, Regeneron Pharmaceuticals, Inc., and Unity
- This study was sponsored by Regeneron Pharmaceuticals, Inc. (Tarrytown, New York) and co-funded by Bayer AG (Leverkusen, Germany). The sponsors participated in the design and conduct of the study, analysis of the data, and preparation of this presentation
- This study includes research conducted on human patients. Institutional review board approval was obtained prior to study initiation
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Methods

Objective: As aflibercept 8 mg is administered in a 70-µL injection volume versus a 50-µL injection volume for aflibercept 2 mg, this post hoc analysis of the PHOTON trial[1] evaluated the potential effect of a higher injection volume on IOP outcomes through Week 96

IOP Assessment in the PHOTON Trial

- Bilateral IOP was measured at all study visits; the same method of measurement was used in each patient throughout the study[a]
  - On days when the study drug was administered, sites were permitted to follow their usual post-injection monitoring routine. The study protocol recommended that IOP was measured approximately 30 minutes post-dose

Fellow Eye Treatment in the PHOTON Trial

- In the trial, fellow eyes could receive aflibercept 2 mg for DME or any other approved indication, at the discretion of the study investigator. Patients were not allowed to receive any other anti-VEGF agent in the fellow eye
  - Through Week 96, fellow-eye injections with aflibercept 2 mg were reported in 70.1%, 67.1%, and 67.5% of patients in the aflibercept 2q8, 8q12, and 8q16 groups, respectively

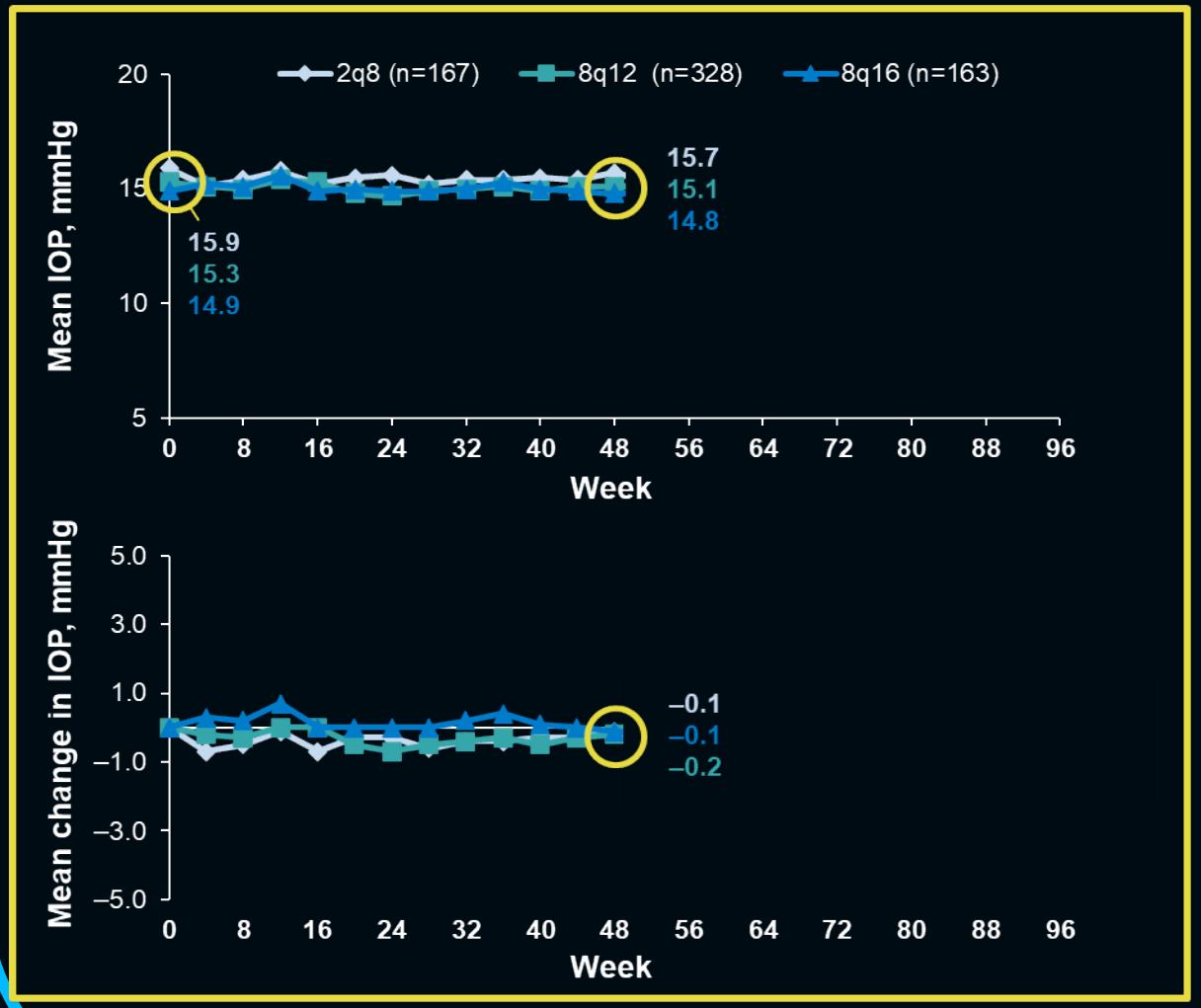
Outcomes Assessed Post Hoc

- Mean change in pre-dose IOP from baseline in study eyes receiving aflibercept 8 mg or 2 mg and untreated fellow eyes[b] through Week 96
- The proportion of eyes requiring new or additional IOP-lowering agent(s) and IOP-lowering procedures was evaluated for those with and without glaucoma-related history

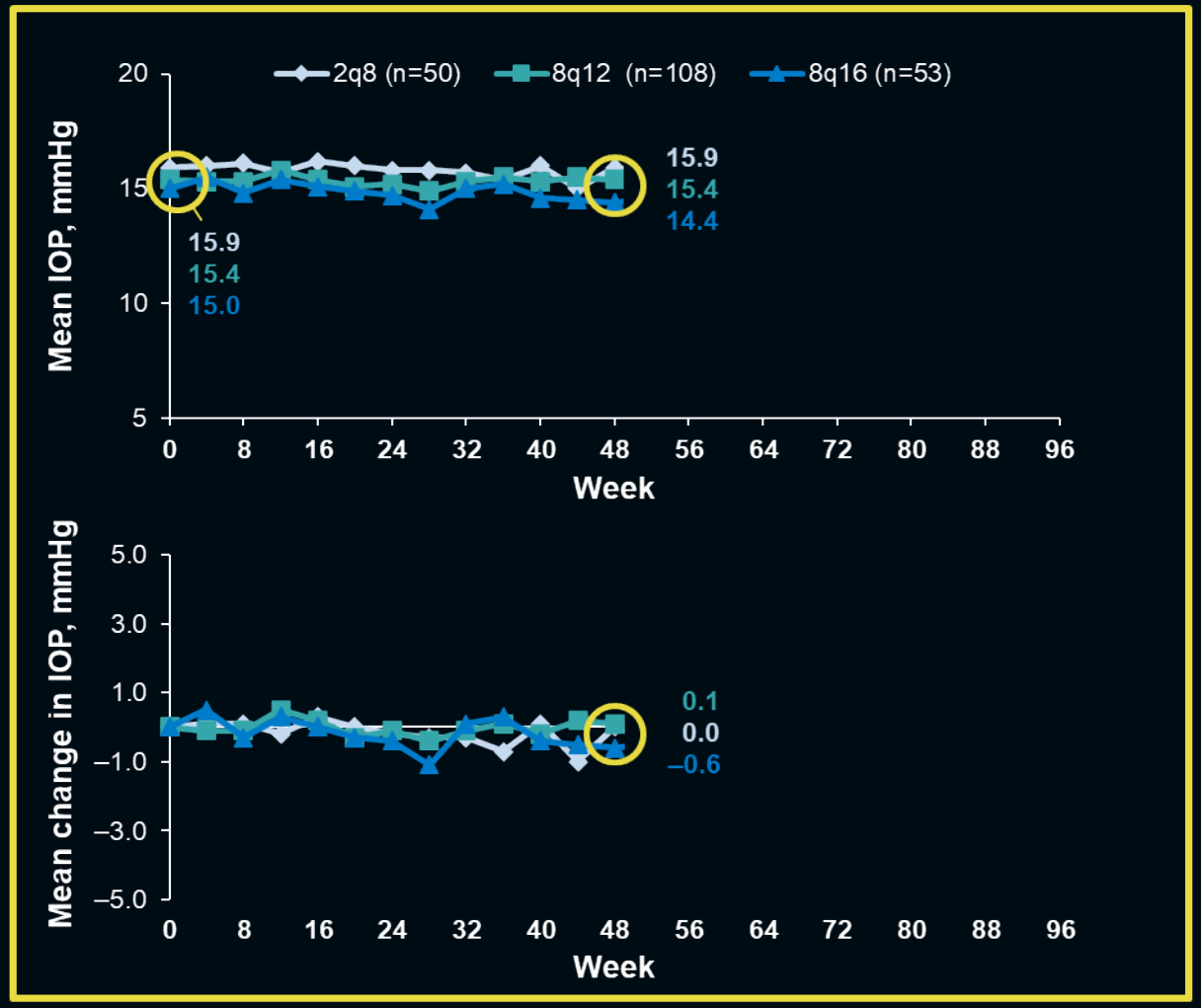
[a]IOP was measured using either Goldmann applanation tonometry or Tono-pen™.
[b]In this analysis, fellow eyes were grouped based on study eye randomization. Untreated fellow eyes which did not receive aflibercept 2 mg were included.
2q8, 2 mg every 8 weeks; 8q12, 8 mg every 12 weeks; 8q16, 8 mg every 16 weeks; anti-VEGF, anti-vascular endothelial growth factor; DME, diabetic macular edema; IOP, intraocular pressure.
1. Brown DM et al. *Lancet*. 2024;403:1153–1163.

Mean and Mean Change in Pre-Dose IOP Values in Study and Untreated Fellow Eyes Were Similar Through Week 96

Study Eye



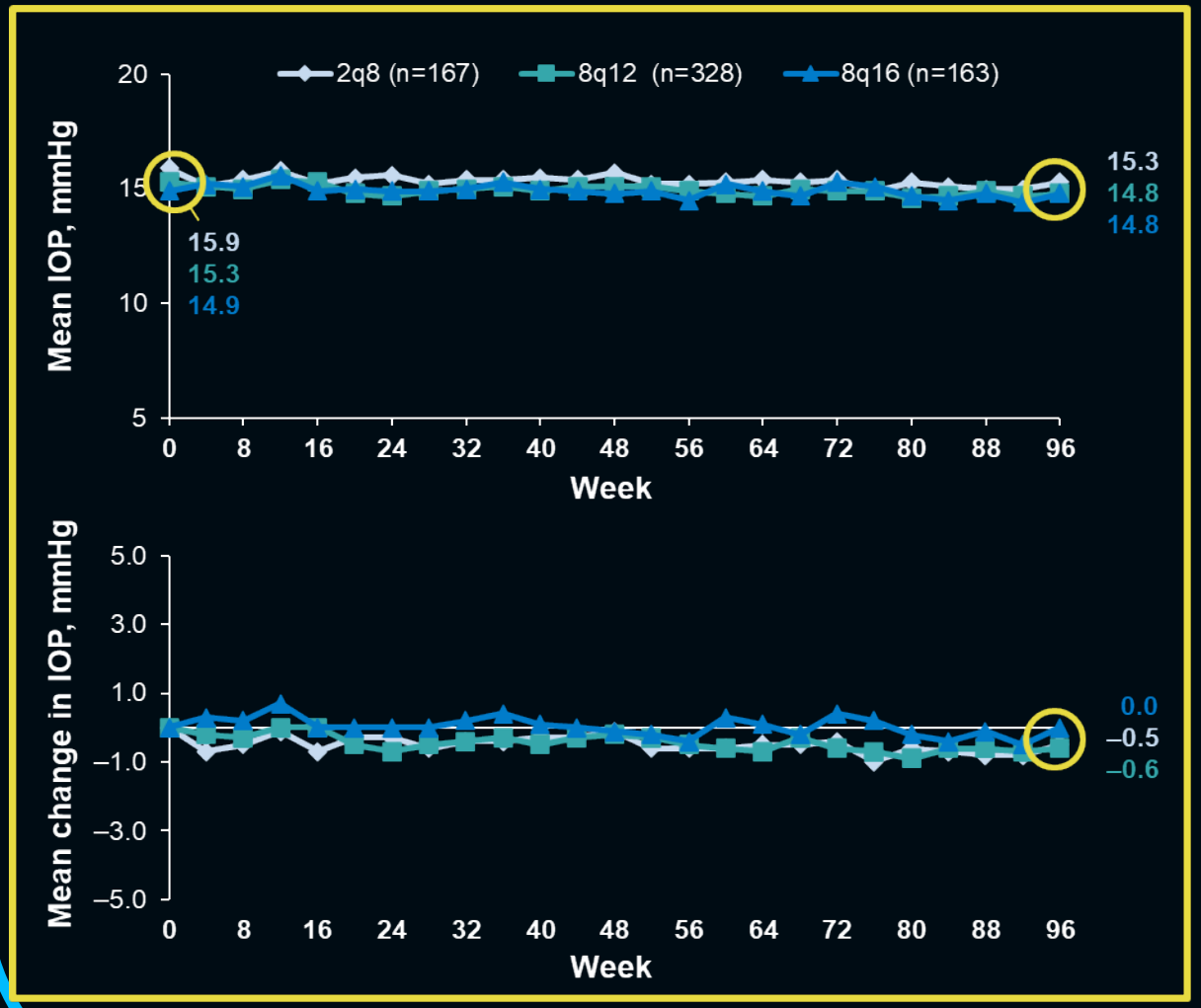
Fellow Eye (Untreated)



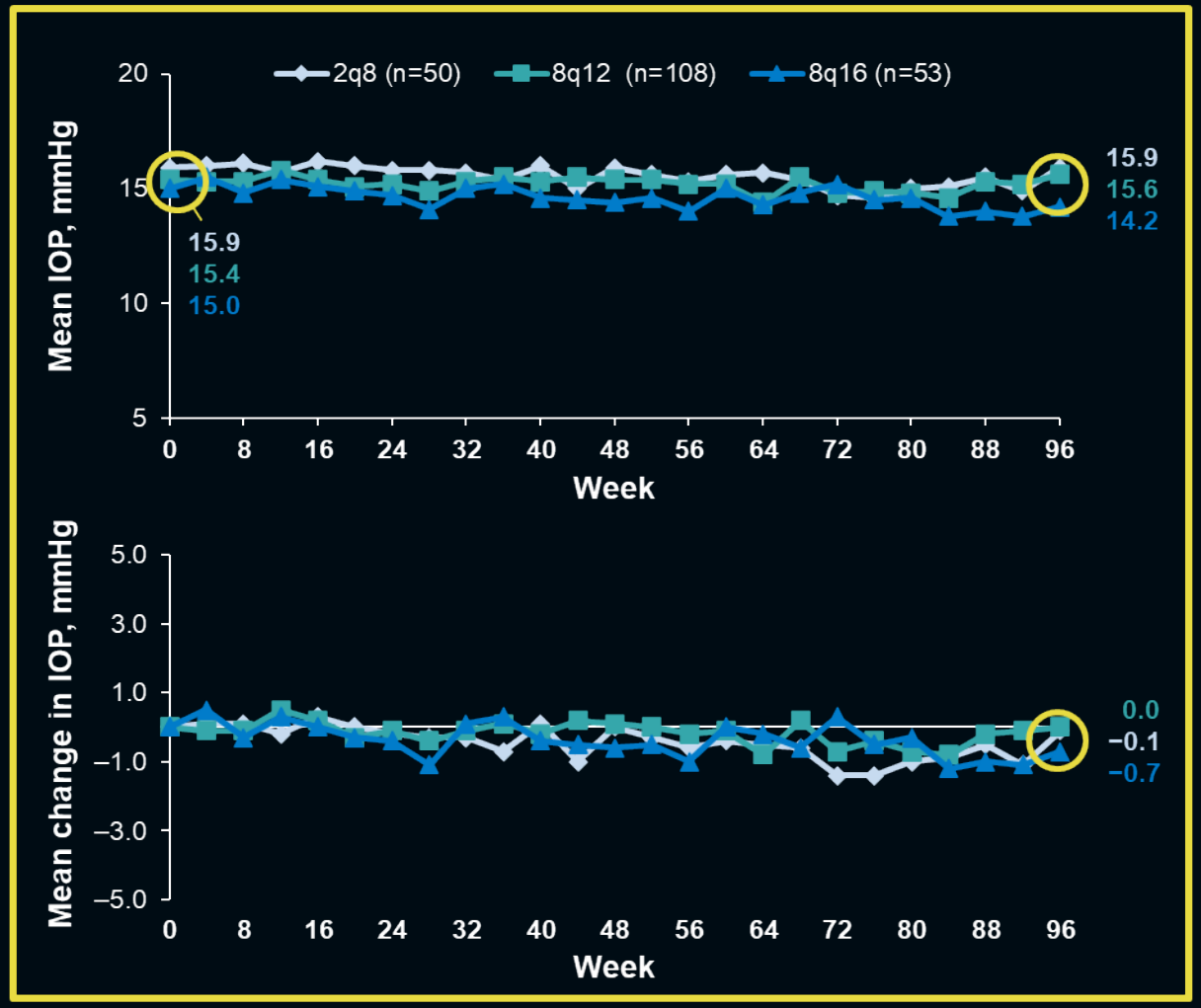
Safety analysis set.
Study eyes in 2q8, 8q12, and 8q16 received a mean of 14.0, 9.0, and 8.0 injections, respectively, through Week 96.

Mean and Mean Change in Pre-Dose IOP Values in Study and Untreated Fellow Eyes Were Similar Through Week 96

Study Eye



Fellow Eye (Untreated)



Safety analysis set.
Study eyes in 2q8, 8q12, and 8q16 received a mean of 14.0, 9.0, and 8.0 injections, respectively, through Week 96.

Cumulative Incidence of Eyes Meeting Pre-dose IOP Criteria Through Week 96

		Study Eye			Fellow Eye[a]		
		2q8 (n=167)	8q12 (n=328)	8q16 (n=163)	2q8 (n=167)	8q12 (n=328)	8q16 (n=163)
Through Week 48	Pre-dose IOP ≥25 mmHg at 2 consecutive visits, %	0	0	0	1.2	0.6	0
	Pre-dose IOP ≥30 mmHg at any visit, %	0	0.3	0	0.6	0	0
Through Week 96	Pre-dose IOP ≥25 mmHg at 2 consecutive visits, %	0	0	0.7	1.2	1.0	0
	Pre-dose IOP ≥30 mmHg at any visit, %	0	0.7	0	0.6	0.4	0

Safety analysis set. Kaplan-Meier methodology was used to generate the data. If an assessment was missing at a specific visit, the visits preceding and following this visit were treated as consecutive visits. Eyes were counted only once in this analysis.

[a]Treated and untreated fellow eyes.

IOP-Lowering Medications in Eyes With Glaucoma-Related History Through Week 96

	Study Eye			Fellow Eye[a]		
	2q8 (n=167)	8q12 (n=328)	8q16 (n=163)	2q8 (n=167)	8q12 (n=328)	8q16 (n=163)
Eyes with glaucoma-related history, n (%)[b]	13 (7.8)	26 (7.9)	13 (8.0)	13 (7.8)	33 (10.1)	16 (9.8)
Eyes with glaucoma-related history who were started on a new IOP-lowering agent(s) through Week 96, n/N	3/13	3/26	2/13	1/13	4/33	2/16

The proportions of study and fellow eyes **with glaucoma-related history requiring an IOP-lowering agent** were low and comparable across treatment groups

Safety analysis set.

[a]2-mg treated and untreated fellow eyes, all study eye randomization arms combined.

[b]Medical history of glaucoma/glaucoma suspect and/or receiving an IOP-lowering agent(s) at baseline: glaucoma/glaucoma suspect terms – glaucoma, open-angle glaucoma, borderline glaucoma, ocular hypertension, angle-closure glaucoma, glaucomatous optic disc atrophy, optic nerve cupping, trabeculoplasty, intraocular pressure increased; IOP-lowering agents: beta blocking agents, prostaglandin analogues, carbonic anhydrase inhibitors, or other antiglaucoma preparations.

IOP-Lowering Medications in Eyes Without Glaucoma-Related History Through Week 96

	Study Eye			Fellow Eye[a]		
	2q8 (n=167)	8q12 (n=328)	8q16 (n=163)	2q8 (n=167)	8q12 (n=328)	8q16 (n=163)
Eyes with no glaucoma-related history, n (%)[b]	154 (92.2)	302 (92.1)	150 (92.0)	154 (92.2)	295 (90.0)	147 (90.2)
Eyes with no glaucoma-related history who were started on a new IOP-lowering agent(s) through Week 96, n/N	5/154	8/302	5/150	3/154	6/295	2/147

The proportions of study and fellow eyes **without glaucoma-related history requiring an IOP-lowering agent** were low and comparable across treatment groups

Safety analysis set.

[a]2-mg treated and untreated fellow eyes, all study eye randomization arms combined.

[b]No medical history of glaucoma/glaucoma suspect and not receiving an IOP-lowering agent(s) at baseline: glaucoma/glaucoma suspect terms – glaucoma, open-angle glaucoma, borderline glaucoma, ocular hypertension, angle-closure glaucoma, glaucomatous optic disc atrophy, optic nerve cupping, trabeculoplasty, intraocular pressure increased; IOP-lowering agents: beta blocking agents, prostaglandin analogues, carbonic anhydrase inhibitors, or other antiglaucoma preparations.

Anterior Chamber Paracentesis Procedures[a] in All Patients Through Week 96

	Study Eye			Fellow Eye[b]		
	2q8 (n=167)	8q12 (n=328)	8q16 (n=163)	2q8 (n=167)	8q12 (n=328)	8q16 (n=163)
Eyes receiving anterior chamber paracentesis through Week 96, n (%)	0 (0.0)	3 (0.9)	1 (0.6)	1 (0.6)	1 (0.3)	0 (0.0)

- Two patients in the 8q12 group received 1 paracentesis in the study eye only
- One patient in the 8q12 group received multiple paracentesis in both the study and fellow eyes
- One patient in the 8q16 group received 1 paracentesis in the study eye only
- One patient in the 2q8 group received 1 paracentesis in the fellow eye only

Safety analysis set.
[a]Ocular treatment-emergent surgeries in study/fellow eye related to IOP lowering.
[b]2-mg treated and untreated fellow eyes, all study eye randomization arms combined.

Conclusions

- In patients with DME, pre-dose IOP values in the study eye were similar through Week 96 across treatment groups
- Pre-dose IOP values were similar through Week 96 between study eyes and fellow eyes (treated with aflibercept 2 mg and untreated)
- The proportions of study and fellow eyes with and without glaucoma-related history requiring a new IOP-lowering medication were low across all treatment groups through Week 96
- Only 4 study eyes receiving aflibercept 8 mg and 2 fellow eyes required anterior chamber paracentesis through Week 96

Despite a 70-µL injection volume, no long-term IOP adverse effects were seen through Week 96 with aflibercept 8 mg versus 2 mg (50 µL)