

Intraocular Pressure Outcomes With Aflibercept 8 mg and 2 mg in Patients With Diabetic Macular Edema: 156-Week Results From the PHOTON Extension Study

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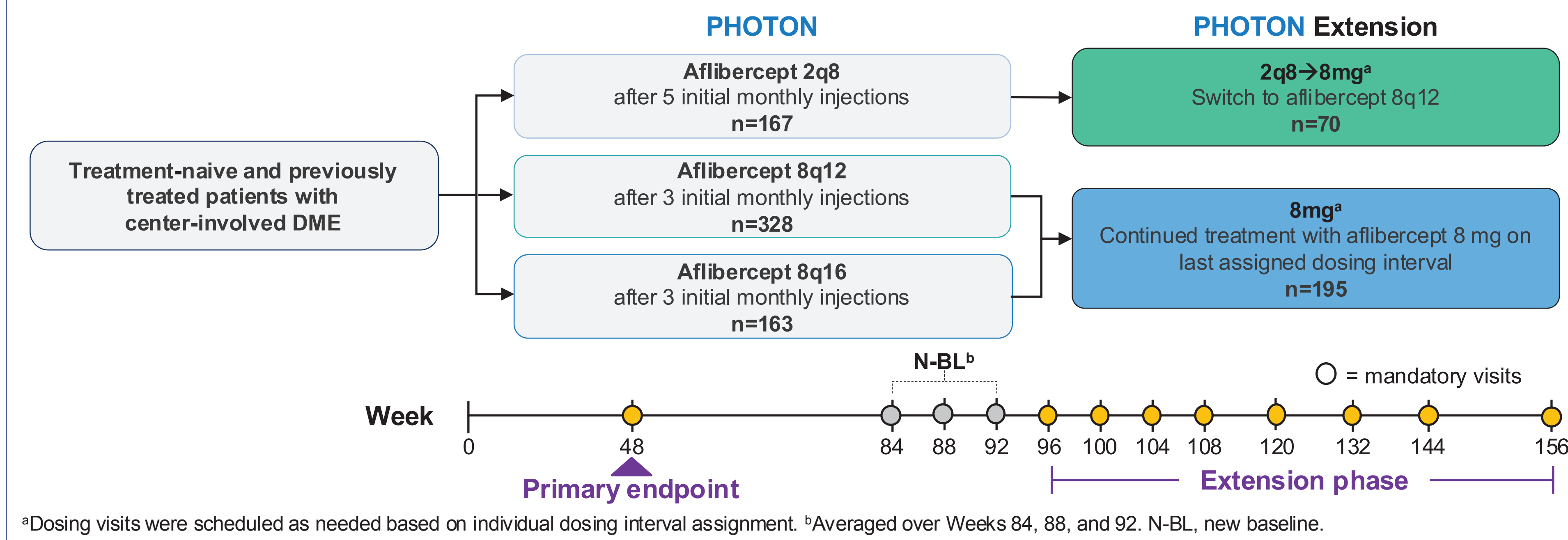
BACKGROUND & PURPOSE

- Aflibercept 8 mg demonstrated non-inferior best-corrected visual acuity (BCVA) gains with fewer injections compared to aflibercept 2 mg in patients with diabetic macular edema (DME) at Week 48 in the PHOTON trial (NCT04429503)¹
 - Similar BCVA gains were maintained through 96 weeks²
- As the injection volume for aflibercept 8 mg is 70 μ L compared with 50 μ L for aflibercept 2 mg, the potential effect of a higher injection volume on intraocular pressure (IOP) and glaucoma-related outcomes was explored in an optional extension of the PHOTON trial through Week 156

METHODS

- In the PHOTON trial, treatment-naïve and previously treated patients with center-involved DME were randomized 1:2:1 to receive aflibercept 2 mg every 8 weeks (2q8) after 5 initial monthly doses or aflibercept 8 mg every 12 weeks (8q12) or 16 weeks (8q16) after 3 initial monthly doses through 96 weeks
- Following completion of the PHOTON trial, patients had the option to participate in the PHOTON extension study in which those who previously received aflibercept 2q8 were switched to aflibercept 8 mg every 12 weeks (2q8→8mg group; n=70), and those who previously received aflibercept 8q12 or 8q16 continued to receive aflibercept 8 mg on their last assigned dosing interval (8mg group; n=195) (Figure 1)
- Fellow eyes could receive aflibercept 2-mg injections at the discretion of the study investigator through Week 96, or aflibercept 2 mg or 8 mg in the PHOTON extension

Figure 1. PHOTON Extension Trial Design



IOP Assessment

- Bilateral IOP was measured at all study visits using either Goldmann applanation tonometry or Tono-pen. The same method of measurement was used in each patient throughout the study
- On days when the study drug was administered, sites were permitted to follow their usual post-injection monitoring routine. The study protocol recommended IOP be measured at approximately 30 minutes post-dose

Post Hoc Analysis

- IOP outcomes for study and fellow eyes in the extension safety analysis set were evaluated through Week 156
- In this analysis, fellow eyes were grouped based on study eye randomization in PHOTON. Both untreated and treated (only aflibercept was permitted) fellow eyes were included

REFERENCES

- Brown DM et al. *Lancet*. 2024;403:1153–1163.
- Do DV. Presented at: American Academy of Ophthalmology; November 3-6, 2023; San Francisco, CA.

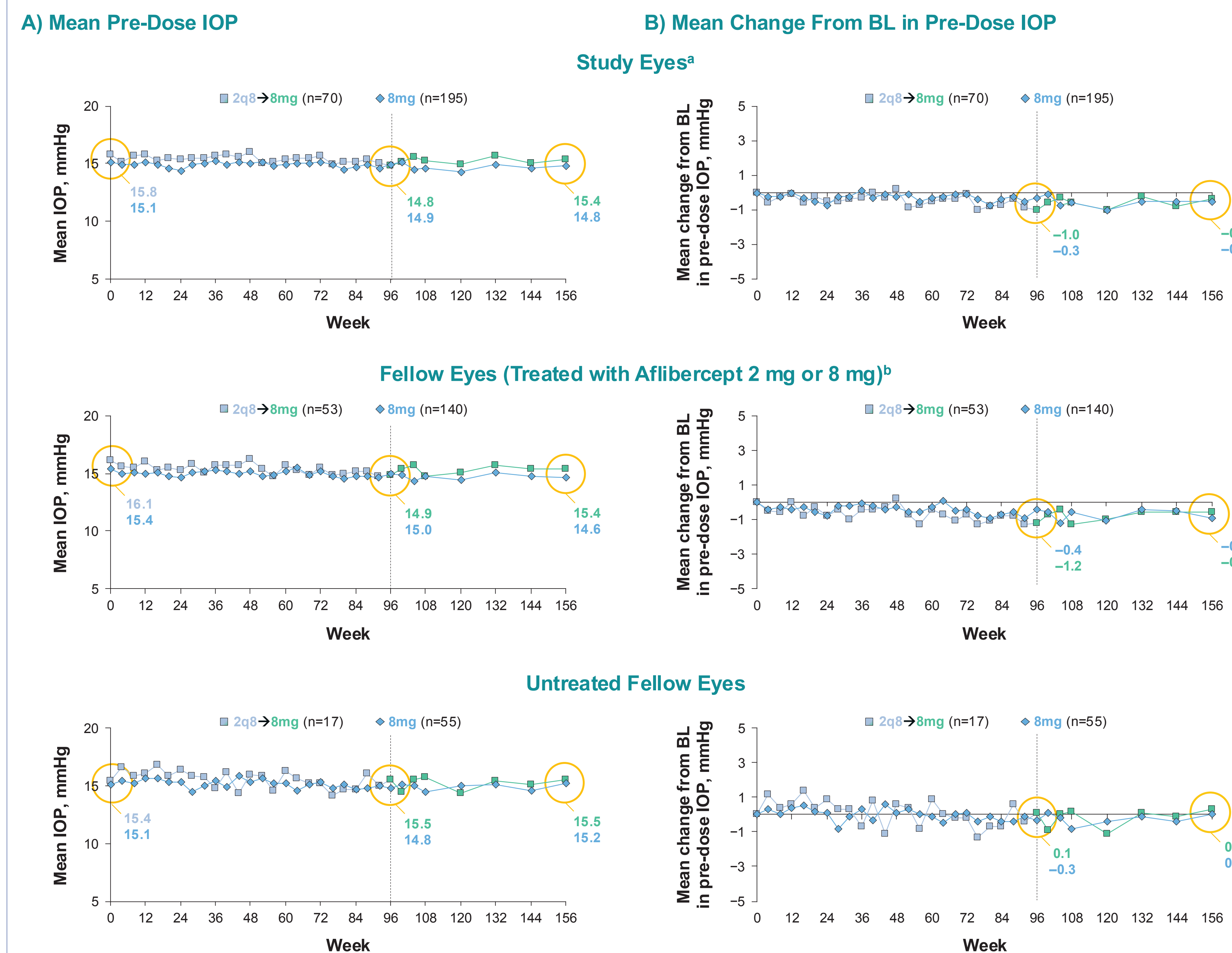
ACKNOWLEDGMENTS & DISCLOSURES

- Anita Barikian has no proprietary or commercial interest in any materials discussed in this poster
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RESULTS

- Mean and mean change in pre-dose IOP values in study eyes in the 8mg group and the 2q8→8mg group were comparable through Week 156, and similar to baseline (BL)
 - In both treatment groups, mean changes in pre-dose IOP from BL by visit through Week 156 did not exceed \pm 1 mmHg in the study eye
 - These values were comparable in fellow eyes, irrespective of treatment with aflibercept (Figure 2)

Figure 2. (A) Mean Pre-Dose IOP and (B) Mean Change From BL in Pre-Dose IOP in Study and Fellow Eyes



Extension safety analysis set. Dashed lines at Week 96 indicate the end of the PHOTON trial, and the beginning of the PHOTON extension. ^aStudy eyes in the 2q8→8mg and 8mg groups received a mean of 18.6 and 12.6 injections, respectively. ^bAt the discretion of the investigator, 75.7% of fellow eyes in the 2q8→8mg group and 71.8% of fellow eyes in the 8mg group received a mean of 14.6 and 14.0 injections, respectively, of aflibercept 2 mg or 8 mg. Fellow eye treatment was most commonly aflibercept 2 mg (only 10 patients received a total of 12 injections of aflibercept 8 mg in the fellow eye in the PHOTON extension).

- No study eyes had pre-dose IOP \geq 25 mmHg at 2 consecutive visits or a pre-dose IOP value of \geq 30 mmHg (Table 1)

Table 1. Cumulative Incidence of Patients Meeting Pre-Dose IOP Criteria Through Week 156

	Study eye				Fellow eye ^a			
	2q8→8mg (n=70)	8q12 (n=130)	8q16 (n=65)	8mg (n=195)	2q8→8mg (n=70)	8q12 (n=130)	8q16 (n=65)	8mg (n=195)
Pre-dose IOP \geq 25 mmHg at 2 consecutive visits, %	0	0	0	0	1 (1.4)	2 (1.5)	0	2 (1.0)
Pre-dose IOP \geq 30 mmHg at any visit, %	0	0	0	0	1 (1.4)	1 (0.8)	1 (1.5)	2 (1.0)

Extension 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. ^aUntreated or treated with aflibercept 8 mg or 2 mg.

- One study eye in the 2q8→8mg group had pre- or post-dose IOP \geq 35 mmHg, which occurred before the extension phase. No study eyes in the 8mg group or fellow eyes met this criterion through Week 156

- The proportions of study and fellow eyes with a glaucoma-related history at BL were slightly higher with aflibercept 8 mg versus 2 mg (Table 2)
- The proportions of study and fellow eyes with or without glaucoma-related history at BL receiving a new or additional IOP-lowering agent(s) at any timepoint (including one-time administration) were low and comparable across treatment groups (Table 2)
 - Among eyes without glaucoma-related history, one study eye in the 2q8→8mg group received a new or additional IOP-lowering agent in the extension phase. One study eye in the 8q12 group and 4 fellow eyes received a new or additional IOP-lowering agent in the extension phase
 - Among eyes with glaucoma-related history, no study eyes in the 2q8→8mg group received a new or additional IOP-lowering agent in the extension phase. One study eye in the 8q12 group and 2 fellow eyes received a new or additional IOP-lowering agent in the extension phase

Table 2. Glaucoma-Related History at BL and IOP-Lowering Agents Through 156 Weeks

	Study eye				Fellow eye ^a			
	2q8→8mg (n=70)	8q12 (n=130)	8q16 (n=65)	8mg (n=195)	2q8→8mg (n=70)	8q12 (n=130)	8q16 (n=65)	8mg (n=195)
No glaucoma-related history at BL, n (%) ^b	66 (94.3)	118 (90.8)	56 (86.2)	174 (89.2)	66 (94.3)	117 (90.0)	55 (84.6)	172 (88.2)
Medical history of glaucoma/glaucoma suspect ^c AND/OR treatment with \geq 1 IOP-lowering agent ^d at BL, n (%)	4 (5.7)	12 (9.2)	9 (13.8)	21 (10.8)	4 (5.7)	13 (10.0)	10 (15.4)	23 (11.8)
Eyes without glaucoma-related history that received a new or additional IOP-lowering agent(s) through Week 156, n/N	3/66	4/118	1/56	5/174	2/66	6/117	0	6/172
Eyes with glaucoma-related history that received a new or additional IOP-lowering agent(s) through Week 156, n/N	2/4	2/12	2/9	4/21	0	3/13	2/10	5/23

Extension safety analysis set. ^aUntreated or treated with aflibercept 8 mg or 2 mg. ^bNo medical history of glaucoma/glaucoma suspect or not receiving an IOP-lowering agent at BL. ^cDefined as a medical history of glaucoma/glaucoma suspect (glaucoma, open-angle glaucoma, borderline glaucoma, ocular hypertension, angle closure glaucoma, glaucomatous optic disc atrophy, optic nerve cupping, trabeculoplasty, or IOP increased) or receiving an IOP-lowering agent at BL. ^dBeta blockers, prostaglandin analogues, carbonic anhydrase inhibitors, or other anti-glaucoma preparations.

- Only 2 study eyes in the 8mg group received an anterior chamber paracentesis through Week 156; both were performed in Year 2 of the PHOTON trial. No study eyes in the 2q8→8mg group, and no fellow eyes received an anterior chamber paracentesis through Week 156 (Table 3)
- The only other IOP-lowering procedure performed in study eyes was an iridotomy (1 in the 8q12 group and 1 in the 8q16 group)
 - One fellow eye received an iridotomy and 1 fellow eye received a trabeculectomy

Table 3. Anterior Chamber Paracentesis Procedures^a Through Week 156

	Study eye				Fellow eye ^b			
	2q8→8mg (n=70)	8q12 (n=130)	8q16 (n=65)	8mg (n=195)	2q8→8mg (n=70)	8q12 (n=130)	8q16 (n=65)	8mg (n=195)
Eyes receiving anterior chamber paracentesis, n (%)	0	1 (0.8)	1 (0.5)	2 (1.0)	0	0	0	0

Extension safety analysis set. ^aOcular treatment-emergent surgeries in the study or fellow eye. ^bUntreated or treated with aflibercept 8 mg or 2 mg.

CONCLUSIONS

- In patients with DME, pre-dose IOP values in the study eye were similar through Week 156 across the aflibercept 8-mg and 2-mg treatment groups and between study eyes and fellow eyes, regardless of treatment with aflibercept 8 mg or 2 mg
- The proportions of study and fellow eyes with and without glaucoma-related history requiring IOP-lowering medications were low across all treatment groups through Week 156
- Only 2 study eyes receiving aflibercept 8 mg (1 in the 8q12 group and 1 in the 8q16 group) required anterior chamber paracentesis through Week 156
- Despite a 70- μ L injection volume, no long-term IOP adverse effects were seen through Week 156 with aflibercept 8 mg versus 2 mg (50 μ L)