

**Supplementary Table S1.** Comparison of effect sizes and significance for intraocular pressure (mmHg) during follow-up compared to baseline using paired samples t-tests vs. a linear mixed model with repeated measurements.

<b>Time</b>	<b>paired t-tests</b>		<b>linear mixed model</b>	
	mean difference (95% CI)	p-value	mean difference (95% CI)	p-value
1 day	7.18 (5.07, 9.29)	<0.001	7.31 (4.01, 10.60)	<0.001
1 week	11.37 (8.84, 13.91)	<0.001	10.49 (7.18, 13.79)	<0.001
1 month	7.93 (6.07, 9.79)	<0.001	7.84 (4.99, 10.68)	<0.001
3 months	7.51 (5.23, 9.79)	<0.001	7.37 (3.98, 10.77)	<0.001
6 months	8.15 (6.30, 10.00)	<0.001	7.88 (5.22, 10.53)	<0.001
12 months	6.86 (4.37, 9.34)	<0.001	6.29 (3.26, 9.32)	<0.001
18 months	9.42 (6.36, 12.47)	<0.001	6.40 (2.82, 9.98)	<0.001
24 months	7.12 (3.71, 10.52)	<0.001	6.88 (3.62, 10.15)	<0.001
Last follow-up	6.20 (4.51, 7.90)	<0.001	6.23 (3.36, 9.09)	<0.001

**Supplementary Table S2.** Multivariate logistic regression for baseline characteristics and treatment outcome

Trait	OR (95% CI)	p - value
Diagnosis (primary)	1.457 (0.543 - 3.910)	0.455
Surgeon	1.402 (0.548 – 3.586)	0.480
IOP (mmHg)	0.929 (0.877 – 0.983)	0.010

**Supplementary Table S3.** Viability of baseline characteristics for logistic regression for treatment outcome

Factor	Treatment success (n = 83)	Treatment failure (n = 30)	p-value
Age (years)	65.7 ± 14.9	64.1 ± 13.5	0.626
Visual field mean deviation (MD; dB)	-18.5 ± 12.0	-21.3 ± 9.5	0.358
Spherical equivalent (D)**	-1.8 ± 2.9	-0.9 ± 1.3	0.115*
IOP (mmHg)	28.6 ± 10.4	21.2 ± 9.4	0.001
Diagnosis (n, %)			
- Primary glaucoma	41 (66)	21 (44)	
- Secondary glaucoma	42 (82)	9 (18)	0.052
Sex (n, %)			
- Male	45 (71)	18 (29)	
- Female	38 (76)	12 (24)	0.585
Previous surgery (n, %)			
- No surgery	27 (79)	7 (21)	
- Any surgery***	56 (71)	23 (29)	0.347
Ethnicity (n, %)			
- Caucasian	63 (71)	26 (29)	
- African	18 (90)	2 (10)	
- Asian	2 (50)	2 (50)	0.119
Surgeon (n, %)+	77	30	
- WDR	35 (65)	19 (35)	
- RCWW	42 (79)	11 (21)	0.097
Family history of glaucoma (n,%)++			
- Negative	35 (78)	10 (22)	
- Positive	20 (65)	11 (36)	0.204

\* = Levene's Test significance <0.05; \*\* = before cataract surgery if applicable; \*\*\* = excluding cataract surgery; † = after excluding 6 patients who were treated by different physicians; †† = after excluding 37 patients for which family history was unknown.

**Supplementary Table S4.** Viability of baseline characteristics for logistic regression for requirement of secondary treatment

<b>Factor</b>	<b>No secondary treatment required (n = 78)</b>	<b>Secondary treatment required (n = 36)</b>	<b>p-value</b>
Age (years)	66.0 ± 14.3	63.5 ± 14.9	0.395
Visual field mean deviation (MD; dB)	-20.1 ± 11.3	-17.7 ± 11.2	0.426
Spherical equivalent (D)**	-1.6 ± 2.2	-1.4 ± 3.3	0.718
IOP (mmHg)	25.6 ± 9.6	29.1 ± 12.3	0.136*
Diagnosis (n, %)			
- Primary glaucoma	40 (65)	22 (35)	
- Secondary glaucoma	37 (71)	15 (29)	0.451
Sex (n, %)			
- Male	45 (71)	18 (29)	
- Female	32 (63)	19 (37)	0.325
Previous surgery (n, %)			
- No surgery	26 (77)	8 (23)	
- Any surgery***	51 (64)	29 (36)	0.184
Ethnicity (n, %)			
- Caucasian	59 (66)	31 (34)	
- African	15 (75)	5 (25)	
- Asian	3 (75)	1 (25)	0.680
Surgeon (n, %)+	73	35	
- RCWW	38 (69)	17 (31)	
- WDR	35 (66)	18 (34)	0.943
Family history of glaucoma (n, %)++	52	24	
- Negative	31 (69)	14 (31)	
- Positive	20 (65)	11 (35)	0.914

\* = Levine's Test < 0.05; \*\* = before cataract surgery if applicable; \*\*\* = excluding cataract surgery; † = after excluding 6 patients who were treated by different physicians; †† = after excluding 37 patients for which family history was unknown.

**Supplementary Table S5.** Summary of related studies

Study	N (eyes, patients)	Total follow-up	Device settings	Baseline IOP (mmHg)*	Mean IOP reduction (mmHg, %)	Failure rate (<20% reduction)	Rate of retreatment	Rate of oral acetazolamide discontinuation	Complications
De Vries et al. (2022)	96 (84)	2 years	2000mW for 80 seconds / hemisphere if IOP <30 mmHg, 90 seconds if IOP > 30 mmHg, 31.3% duty cycle	26.6 ± 10.8	6.9 (28.1), and 7.1 after 2 years (30.2)	27%, and 32% after 2 years	38%	67.85%	None related to treatment.
De Crom et al. (2020)	141 (136)	2 years	2000mW, 2100mW for secondary treatments and 2200mW for tertiary treatments, 80 seconds / hemisphere if IOP <30 mmHg, 90 seconds if IOP > 30 mmHg, 31.3% duty cycle	23.5 ± 9.4	6.5 (27.8), and 6.7 (28.6) after 2 years	34%, and 40% after 2 years	33.30 %	70%	4.3% total: 1 (0.7%) fibrinous anterior chamber reaction, 1 (0.7%) rejection of corneal graft, 2 (1.4%) cystic macular edema, 1 (0.7%) hypotony.
Nguyen et al. (2019)	95 (95)	1 year	2000-2500mW, up to 3000mW for retreatments, 90 seconds / hemisphere, 31.3% duty cycle	25.1 ± 5.3	7.6 (30.3)	23.2%	23.20 %	Not reported	1 (1.1%) posterior synechiae, 6 (6.3%) hyphema, 3 (3.2%) persistent mydriasis, 3 (3.2%) choroidal effusion, 10 (10.5%) keratopathy, 1 (1.1%) transient hypotony.
Sarrafour et al. (2019)	73 (62)	1 year	2500mW of only light perception or worse, 2400mW of only hand motions / counting fingers, 2250mW if VA of 20/80-20/400, 2000mW if VA of 20/20-20/70, all 50 seconds / hemisphere, 31.3% duty cycle	25.5 ± 9.4	11.7 (45.9)	24%	2.70%	73.30%	None reported.
Zaarour et al. (2019)	75 (69)	15 months	2000mW for 180 seconds total, 31.3% duty cycle	26.0 ± 7.91	8.3 (31.8)	43.3%	21%	58.13%	No serious complications were reported during follow-up.

All outcomes after 1 year of follow-up unless stated otherwise. \* = mean ± standard deviation; IOP = intraocular pressure, VA = visual acuity