## Table 31: Detailed Outcome Data — Clinical Review

| Study Citation | Quantitative Findings or Narrative Summary | Interpretation | Authors' Conclusions |
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| **Research Questions 1 and 2** | | | |
| **MIGS Vs. Pharmacotherapy** | | | |
| Vold et al. 2016[58] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean, 2x iStent and Travoprost respectively:<br>• baseline: 25.5; 25.1<br>• 1 mo: 15.2; 15.0<br>• 3 mo: 15.0; 14.4<br>• 6 mo: 14.2; 13.8<br>• 12 mo: 13.7; 13.9<br>• 18 mo: 13.5; 14.6<br>• 24 mo: 13.8; 15.0<br>• 30 mo: 13.7; 15.4<br>• 36 mo: 14.6; 15.3<br><br>**IOP** (mm Hg) in **eyes without additional medical therapy** (subset), mean (n), 2x iStent and Travoprost respectively:<br>• baseline: 25.5 (54); 25.1 (47)<br>• 1 mo: 15.2 (54); 15.0 (47)<br>• 3 mo: 15.0 (52); 14.1 (44)<br>• 6 mo: 14.2 (50); 13.7 (42)<br>• 12 mo: 13.7 (50); 13.9 (42)<br>• 18 mo: 13.5 (49); 14.5 (42)<br>• 24 mo: 13.8 (47); 15.1 (41)<br>• 30 mo: 13.7 (45); 15.5 (39)<br>• 36 mo: 14.5 (32); 15.7 (28)<br><br>**Proportion of eyes** (%) **with IOP ≤ 18 mm Hg without additional medical therapy,** 2x iStent and Travoprost respectively:<br>• 12 mo: 94; 89<br>• 24 mo: 90; 87<br>• 36 mo: 91; 79 | • IOP tended to be reduced, and BCVA and VF tended to be improved, at follow-up in both groups, but there were no statistical comparisons<br>• Safety was favourable in both groups | *"In both groups, patients showed substantial IOP reduction and favorable safety through 3 years. these findings support the viability of multiple iStent implantations as an initial treatment option comparable to topical prostaglandin in newly diagnosed POAG,"* p. 169. |

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| | **Proportion of eyes** (%) **with IOP ≤ 15 mm Hg without additional medical therapy,** 2x iStent and Travoprost respectively:<br>• 12 mo: 75; 72<br>• 24 mo: 81; 46<br>• 36 mo: 62; 21<br><br>**Proportion of eyes** (%) **with BCVA 20/200 or better,** 2x iStent and Travoprost respectively:<br>• baseline: 100; 100<br>• 36 mo: 100; 100<br><br>**Proportion of eyes** (%) **with BCVA 20/100 or better,** 2x iStent and Travoprost respectively:<br>• baseline: 96; 100<br>• 36 mo: 90; 88<br><br>**Proportion of eyes** (%) **with BCVA 20/40 or better,** 2x iStent and Travoprost respectively:<br>• baseline: 74; 83<br>• 36 mo: 77; 74<br><br>**VF mean deviation (dB)**, mean ± SD, 2x iStent and Travoprost respectively:<br>• baseline: –7.5 ± 8.8; –5.8 ± 7.7<br>• 12 mo: –7.7 ± 8.9; –6.3 ± 7.6<br>• 24 mo: –6.0 ± 9.7; –5.5 ± 7.7<br>• 36 mo: –6.8 ± 7.4; –6.2 ± 6.0<br><br>**VF PSD (dB)**, mean ± SD, 2x iStent and Travoprost respectively:<br>• baseline: 4.6 ± 3.3; 3.5 ± 2.6<br>• 12 mo: 4.4 ± 3.1; 3.5 ± 2.6<br>• 24 mo: 4.7 ± 3.2; 3.4 ± 2.4<br>• 36 mo: 4.3 ± 3.1; 3.4 ± 2.4<br><br>**Safety**<br>**Complications** in 2x iStent group:<br>• hyphema, n = 1<br>• iridodialysis with no post-operative ocular sequelae, n = 1<br>• progression of cataract, n = 11 (20%) | | |

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| | **Complications** in Travoprost group:<br>• progression of cataract, n = 8 (17%)<br><br>Note: There were no statistical comparisons in this study. | | |
| Fea et al. 2014[36] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, 2x iStent inject and Latanoprost + Timolol respectively (*P* values NR):<br>• screening (on medications): 21.1 ± 1.7; 20.7 ± 1.7<br>• baseline (unmedicated): 25.2 ± 1.4; 24.8 ± 1.7<br>• 1 mo: 13.3 ± 4.1; 12.8 ± 2.6<br>• 3 mo: 12.8 ± 3.2; 12.5 ± 2.8<br>• 6 mo: 12.7 ± 3.2; 12.2 ± 2.2<br>• 9 mo: 12.9 ± 2.9; 12.8 ± 2.9<br>• 12 mo: 13.0 ± 2.3; 13.2 ± 2.0<br><br>**Reduction in IOP from screening** (mm Hg), mean ± SD, 2x iStent inject and Latanoprost + Timolol respectively (*P* values NR):<br>• 1 mo: –7.7 ± 4.2; –7.9, 2.9<br>• 3 mo: –8.3 ± 3.3; –8.1 ± 2.6<br>• 6 mo: –8.5 ± 2.8; –8.3 ± 2.4<br>• 9 mo: –8.2 ± 3.0; –7.7, ± 2.8<br>• 12 mo: –8.1 ± 2.6; –7.3 ± 2.2<br><br>**Reduction in IOP from baseline** (mm Hg), mean ± SD, 2x iStent inject and Latanoprost + Timolol respectively (*P* values NR):<br>• 1 mo: –11.8 ± 4.2; –12.0 ± 2.9<br>• 3 mo: –12.4 ± 3.4; –12.3 ± 2.8<br>• 6 mo: –12.5 ± 3.2; –12.6 ± 2.4<br>• 9 mo: –12.3 ± 3.0; –11.9 ± 2.8<br>• 12 mo: –12.2 ± 2.5; –11.6 ± 2.2<br><br>**Proportion of patients with IOP reduction ≥ 20% at 12 mo vs. unmedicated baseline**, n (%), 2x iStent inject and Latanoprost + Timolol respectively:<br>• 89 (94.7%; 95% CI, 88.0 to 98.3); 88 (91.8%; 95% CI, 84.5 to 96.4), *P* > 0.05 | • The reduction of IOP was similar between groups across all time points<br>• Adverse events were not different between groups | *"These data show that the use of iStent inject is at least as effective as two medications, with the clinical benefit of reducing medication burden and assuring continuous treatment with full compliance to implant therapy as well as having a highly favorable safety profile,"* p. 875.<br><br>*"This study confirms that the iStent inject is a safe and effective implant procedure with a high benefit-to-risk profile and may be a preferable alternative to chronic use of multiple medications in subjects with OAG,"* p. 881. |

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| | **Proportion of patients (%) with IOP reduction ≥ 30% at 12 mo vs. unmedicated baseline,** 2x iStent inject and Latanoprost + Timolol respectively:<br>• 93.6% (95% CI, 86.6 to 97.6); 88.8 (95% CI, 80.8 to 94.3), *P* > 0.05<br><br>**Proportion of patients (%) with IOP reduction ≥ 40% at 12 mo vs. unmedicated baseline,** 2x iStent inject and Latanoprost + Timolol respectively:<br>• 80.9% (95% CI, 71.4 to 88.2); 75.5 (95% CI, 65.8 to 83.6), *P* > 0.05<br><br>**Proportion of patients (%) with IOP reduction ≥ 50% at 12 mo vs. unmedicated baseline,** 2x iStent inject and Latanoprost + Timolol respectively:<br>• 53.2% (95% CI, 42.6 to 63.6); 35.7 (95% CI, 26.3 to 46.0), *P* = 0.02<br><br>**IOP ≤ 18 mm Hg,** n (%), 2x iStent inject and Latanoprost + Timolol respectively:<br>• 12 mo: 87 (92.6%; 95% CI, 85.3 to 97.0); 88 (89.8%; 95% CI, 82.0 to 95.0), *P* = NR<br><br>**IOP ≤ 15 mm Hg,** n (%), 2x iStent inject and Latanoprost + Timolol respectively:<br>• 12 mo: 87 (85.1%; 95% CI, 76.3 to 91.6); 88 (81.6%; 95% CI, 72.5 to 88.7), *P* = NR<br><br>**BCVA** of 20/40 or better (%), 2x iStent inject and Latanoprost + Timolol respectively:<br>• baseline: 84%; 87%, *P* = NR<br>• 12 mo: 79%; 84%, *P* = NR<br><br>**Safety**<br>**Adverse events** at any point post-operatively, n (%), 2x iStent inject and Latanoprost + Timolol respectively (*P* values NR):<br>• eye burning: 0 (0%), 1 (1%)<br>• IOP decompensation: 1 (1%), 0 (0%)<br>• medication allergy: 0 (0%), 1 (1%)<br>• one stent not visible: 1(1%), 0 (0%)<br>• soreness/discomfort: 1 (1%), 0 (0%) | | |
| **MIGS Vs. Laser Therapy** | | | |
| Fea et al. 2017[62] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD:<br>• Baseline: Hydrus, 23.09 ± 5.08; SLT, 23.18 ± 2.15, between-group *P* = 0.93 | • IOP was not different between groups at baseline or follow-up<br>• The reduction in medication use from | *"Both SLT and Hydrus implantation reduced IOP without serious adverse events. Hydrus implantation led to a significant and further* |

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| | **Reduction in IOP from baseline** (mm Hg), mean ± SD, Hydrus and SLT respectively (all significantly different from baseline at $P < 0.001$; $P$ values for between-group comparisons):<br>• 1 mo: –4.3 ± 6.79; –6.0 ± 3.29, $P = 0.26$<br>• 3 mo: –5.5 ± 6.54; –7.1 ± 2.27, $P = 0.27$<br>• 6 mo: –6.7 ± 5.61; –7.3 ± 3.10, $P = 0.59$<br>• 12 mo: –6.6 ± 5.62; –7.3 ± 2.53, $P = 0.57$<br><br>**Reduction in IOP from baseline** (%), mean ± SD, Hydrus and SLT respectively (all significantly different from baseline at $P < 0.001$; $P$ values for between-group comparisons):<br>• 1 mo: –16 ± 24; –26 ± 14, $P = 0.26$<br>• 3 mo: –21 ± 25; –30 ± 9, $P = 0.27$<br>• 6 mo: –27 ± 21; –31 ± 12, $P = 0.59$<br>• 12 mo: –26 ± 18; –31 ± 10, $P = 0.57$<br>  ○ At 12 mo, number (%) of patients with IOP reduction > 20% from baseline: Hydrus, 27 (90%); SLT, 22 (88%)<br><br>**Medications** (number), mean ± SD, Hydrus and SLT respectively ($P$ values for between-group comparisons):<br>• baseline: 2.29 ± 0.83; 2.48 ± 0.92, $P = 0.42$<br>• 12 mo: 0.9 ± 1.04; 2.0 ± 0.91, $P$ = NR<br><br>**Reduction in medications from baseline** (number), mean ± SD, Hydrus and SLT respectively:<br>• 12 mo: –1.4 ± 0.97 ($P < 0.05$ compared with baseline); –0.5 ± 1.05 ($P > 0.05$ compared with baseline); difference 0.9 medications/patient; between-group $P = 0.001$<br><br>**Proportion of patients with zero medications** at 12 mo (%):<br>• Hydrus 47%; SLT, 4%, $P = 0.004$<br><br>**VA** (logMAR), mean ± SD, Hydrus and SLT respectively ($P$ values for comparison with baseline where applicable):<br>• baseline: 0.25 ± 0.15; 0.30 ± 0.1, $P$ value for between-group comparison $P = 0.14$<br>• 12 mo: 0.22 ± 0.1, $P = 0.36$; 0.33 ± 0.12, $P = 0.34$, $P$ value for between-group comparison NR | baseline was greater in the Hydrus vs. SLT group<br>• There was no change in VA from baseline to follow-up in either group<br>• There were few complications overall, and all complications were transient | *reduction in medication dependence at 12 months,"* p. 120.<br><br>*"…the Hydrus device [was] implanted in more severe glaucomatous patients. Nevertheless, the pertinent findings of the present investigation are the following: (i) Hydrus Microstent provided equivalent IOP reduction to SLT at one year of over 7 mm Hg; and (ii) patients treated with the Hydrus Microstent used significantly less medication at 12 months to maintain target IOP,"* p. 126. |

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| | **Safety**<br>**Complications**, number (%):<br>Hydrus:<br>• IOP spike, 2 (6.45%)<br>• temporary decrease in VA > 2 lines lasting < 7 d, 3 (9.68%; reasons: corneal edema secondary to IOP spike or hyphema)<br><br>SLT:<br>• none<br>• eye discomfort (40%) | | |
| **MIGS Vs. Another MIGS** | | | |
| Katz et al. 2018[59]<br><br>and<br><br>Katz et al. 2015[60] | **Clinical effectiveness**<br>**IOP** (mm Hg) **while on medications unless otherwise specified**, mean ± SD, for iStent, 2x iStent, and 3x iStent groups respectively (*P* values NR):<br>• screening: 19.8 ± 1.3; 20.1 ± 1.6; 20.4 ± 1.8<br>• baseline (unmedicated): 25.0 ± 1.1; 25.0 ± 1.7; 25.1 ± 1.9<br>• 1 mo: 12.2 ± 3.1; 12.5 ± 2.7; 12.0 ± 2.7<br>• 3 mo: 12.8 ± 2.3; 13.0 ± 2.1; 12.8 ± 2.0<br>• 6 mo: 13.1 ± 1.7; 13.5 ± 2.3; 12.9 ± 2.0<br>• 12 mo: 14.4 ± 1.2; 12.8 ± 1.4; 12.2 ± 1.5<br>• 12-13 mo (after 1 mo medication washout): 14.9 ± 1.9; 13.6 ± 2.1; 12.7 ± 2.1<br>• 18 mo: 15.6 ± 1.5; 13.8 ± 1.3; 12.1 ± 1.2<br>• 36-37 mo (after 1 mo medication washout): 17.4 ± 0.9; 15.8 ± 1.1; 14.2 ± 1.5<br>• 42 mo: 15.0 ± 2.8; 15.7 ± 1.0; 14.8 ± 1.3<br><br>**IOP** (mm Hg) **for eyes without medication at 18 mo**, mean ± SD, for iStent (n = 32), 2x iStent (n = 37), and 3x iStent (n = 35) groups respectively (*P* values NR):<br>• 15.93 ± 0.90; 14.07 ± 1.00; 12.24 ± 1.12<br><br>**Mean difference in unmedicated IOP between groups** (mm Hg) **at 18 mo:**<br>• 3x iStent vs. iStent: 3.58, 95% CI, 2.66 to 4.49, *P* < 0.001<br>• 3x iStent vs. 2x iStent: 1.84, 95% CI, 0.96 to 2.73, *P* < 0.001<br>• 2x iStent vs. iStent: 1.73, 95% CI, 0.83 to 2.64, *P* < 0.001<br><br>**Reduction in unmedicated IOP from screening at 18 mo**, mm Hg (%), for iStent, 2x iStent, and 3x iStent groups respectively (*P* values NR): | 12 mo follow-up:<br>• The proportion of eyes with an IOP reduction of ≥ 20% from baseline, or with IOP ≤ 18 mm Hg, was similar across groups, but this was not tested statistically<br>• Proportionately more eyes in the *2x* and *3x* iStent groups had an IOP ≤15 mm Hg compared with the iStent group, but this was not tested statistically<br><br>18 mo follow-up:<br>• IOP was reduced from baseline in all groups, and the reduction was incrementally greater with increasing numbers of iStents<br><br>24 mo follow-up:<br>• BCVA was not different | *"[…] implantation of each additional stent resulted in significantly greater IOP reduction with reduced medication use. Titratability of stents as a sole procedure was shown to be effective and safe, with sustained effect through 18 months postoperatively in OAG not controlled with medication,"* p. 2313.[60]<br><br>*"The standalone implantation of either single or multiple iStent® device(s) produced safe, clinically meaningful IOP and medication reductions through 42 months postoperatively, with incrementally greater and more sustained reductions in multi-stent eyes,"* p. 255.[59] |

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| | • –3.94 (–19.5%); –5.99 (–29.5%); –8.19 (–39.7%)<br><br>**Reduction in unmedicated IOP from baseline at 18 mo**, mm Hg (%), for iStent, 2x iStent, and 3x iStent groups respectively (*P* values NR):<br>• –9.04 (–36.1%); –10.77 (–43.2%); –12.61 (–50.6%)<br><br>**Unmedicated IOP reduction ≥ 20% from baseline at 12 mo post-operative,** n (%) (*P* values NR):<br>• iStent: 33 (89.2%); 95% CI, 74.6 to 97.0%<br>• 2x iStent: 37 (90.2%); 95% CI, 76.9 to 97.3%<br>• 3x iStent: 35 (92.1%); 95% CI, 78.6 to 98.3%<br><br>**Unmedicated IOP reduction ≥ 20% from baseline at 42 mo post-operative,** n/total (%) (*P* values NR):<br>• iStent: 17/28 (61%)<br>• 2x iStent: 32/35 (91%)<br>• 3x iStent: 32/35 (91%)<br><br>**Unmedicated IOP ≤ 18 mm Hg at 12 mo post-operative**, n (%) (*P* values NR):<br>• iStent: 33 (89.2%); 95% CI, 74.6 to 97.0%<br>• 2x iStent: 37 (90.2%); 95% CI, 76.9 to 97.3%<br>• 3x iStent: 35 (92.1%); 95% CI, 78,6 to 98.3%<br><br>**Unmedicated IOP ≤ 15 mm Hg at 12 mo post-operative**, n (%) (*P* values NR):<br>• iStent: 24 (64.9%); 95% CI, 47.5 to 79.8%<br>• 2x iStent: 35 (85.4%); 95% CI, 70.8 to 94.4%<br>• 3x iStent: 35 (92.1%); 95% CI, 78.6 to 98.3%<br><br>**Number of eyes (%) on medication,** for iStent, 2x iStent, and 3x iStent groups respectively (*P* values NR):<br>• screening: 38 (100%); 41 (100%); 40 (100%)<br>• baseline: 0 (0%); 0 (0%); 0 (0%)<br>• 1 mo: 0 (0%); 0 (0%); 0 (0%)<br>• 3 mo: 1 (2.6%); 0 (0%); 0 (0%)<br>• 6 mo: 3 (7.9%); 1 (2.4%); 1 (2.5%)<br>• 12 mo: 4 (10.8%); 4 (9.8%); 3 (7.9%) | from baseline in any group<br>42 mo follow-up:<br>• Proportionately more eyes in the 2x and 3x iStent groups had an IOP reduction of ≥ 20% from baseline compared with the iStent group, but this was not tested statistically<br>• The change in VF from screening to 42 mo follow-up was not significantly different from between groups; whether absolute VF was significantly different within groups was not tested statistically<br><br>Overall:<br>• Medications were stopped immediately after surgery and re-added in a small proportion of patients in each group to control IOP<br>• There were no serious complications | |

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| | • 12-13 mo (after 1 mo medication washout): 0 (0%); 0 (0%); 0 (0%)<br>• 18 mo: 4 (11.1%); 4 (9.8%); 3 (7.9%)<br>**VF, mean deviation (dB),** mean ± SD, for iStent, 2x iStent, and 3x iStent groups respectively (*P* values NR):<br>• screening: –4.72 ± 4.42; –5.20 ± 5.65; –4.81 ± 4.22<br>• 18 mo: –4.9 ± 4.71; –5.96 ± 5.84; –5.24 ± 4.13<br>• 42 mo: –6.43 ± 4.95; –7.11 ± 5.78; –6.91 ± 5.40<br><br>**Change in VF mean deviation (db) at 42 mo vs. screening** for iStent, 2x iStent, and 3x iStent groups respectively (between-group comparison, *P* = 0.40)<br>• –1.42; –1.26; –2.08<br><br>**BCVA:**<br>• "*In general, BCVA […] values did not appear to be different at 2 years postoperatively vs preoperative levels"* p. 2317[60]<br>• Values reported as proportion of eyes with BCVA 20/40 or better, 20/100 or better, and 20/200 or better at baseline and months 1, 3, 6, 12, 18, and 42 (with no statistical analyses)<br><br>**Safety**<br>**Intraoperative adverse events:** None<br>**Perioperative adverse events:** None<br>**Secondary surgical interventions:**<br>• Cataract surgery by 18 mo: iStent, 2; 2x iStent, 0; 3x iStent, 2<br>• Cataract surgery by 42 mo: iStent, 5; 2x iStent, 2; 3x iStent, 3 | | |
| **MIGS vs. Filtration Surgery** | | | |
| **ECP Vs. Glaucoma Drainage Device** | | | |
| Murakami et al. 2017[63] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, ECP and GDD-2 respectively (*P* values for between-group differences):<br>• baseline: 24.0 ± 6.2; 23.5 ± 8.1, *P* = 0.85<br>• 3 mo: 13.0 ± 3.4; 14.2 ± 5.5, *P* = 0.19<br>• 6 mo: 14.9 ± 4.9; 15.2 ± 6.3, *P* = 0.98<br>• 12 mo: 15.4 ± 3.8; 14.2 ± 4.0, *P* = 0.61<br>• 24 mo: 18.1 ± 7.4; 14.6 ± 3.8, *P* = 0.14<br><br>**IOP reduction from baseline** (mm Hg), mean ± SD, ECP and GDD-2 respectively (*P* values for | • IOP and number of medications were significantly reduced from baseline in both ECP and GDD-2 groups at 3 to 24 mo follow-up, but there were no differences between groups at any time point<br>• Complications were not | *"Both ECP and GDD-2 are both effective as second surgeries for refractory glaucoma that has failed a prior aqueous shunt,"* p. 241. |

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| | between-group comparison; all significant vs. baseline at $P < 0.001$ unless otherwise stated):<br>• 3 mo: 11.0 ± 7.7; 9.3 ± 8.9, $P = 0.29$<br>• 6 mo: 8.7 ± 8.6; 8.3 ± 11.1, $P = 0.64$<br>• 12 mo: 7.8 ± 6.5; 9.3 ± 8.3, $P = 0.66$<br>• 24 mo: 7.0 ± 8.8 ($P < 0.05$ for comparison with baseline); 8.9 ± 7.6, $P = 0.52$<br><br>**% IOP reduction from baseline** (%), mean ± SD, ECP and GDD-2 respectively ($P$ values for between-group comparison; all significant vs. baseline at $P < 0.001$ unless otherwise stated):<br>• 3 mo: 42.0 ± 20.8; 39.6 ± 20.6, $P = 0.20$<br>• 6 mo: 32.4 ± 29.3; 35.3 ± 28.6, $P = 0.33$<br>• 12 mo: 30.8 ± 21.6; 39.6 ± 30.7, $P = 0.56$<br>• 24 mo: 25.5 ± 34.2 ($P < 0.05$ for comparison with baseline); 38.7 ± 27.8, $P = 0.50$<br><br>**Medications** (number), median (range), ECP and GDD-2 respectively ($P$ values for between-group comparisons):<br>• baseline: 3 (0 to 4); 4 (0 to 5), $P = 0.22$<br>• 3 mo: 2 (0 to 5); 2 (0 to 4), $P = 0.88$<br>• 6 mo: 1 (0 to 4); 2 (0 to 5), $P = 0.13$<br>• 12 mo: 1 (0 to 5); 2 (0 to 4), $P = 0.37$<br>• 24 mo: 2 (0 to 5); 3 (0 to 5), $P = 0.61$<br><br>**Medication reduction from baseline** (number), median (mean ± SD), ECP and GDD-2 respectively ($P$ values for between-group comparisons):<br>• 3 mo: 1 (1.4 ± 1.3); 2 (1.6 ± 1.8), $P = 0.57$<br>• 6 mo: 1 (1.7 ± 1.4); 2 (1.4 ± 1.6), $P = 0.64$<br>• 12 mo: 2 (1.6 ± 1.5); 1 (1.5 ± 1.8), $P = 0.74$<br>• 24 mo: 1 (1.5 ± 1.9); 1 (0.9 ± 1.6), $P = 0.50$<br><br>**Safety**<br>• There were complications in both groups (hypotony, corneal oedema, high IOP, inflammation, CME), but no difference between groups, $P > 0.05$ | different between groups | |
| Lima et al. 2004[61] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, ECP and AGI respectively ($P$ values for between-group comparisons):<br>• baseline: 41.61 ± 3.42; 41.32 ± 3.03, $P = 0.5$<br>• 1 wk: 9.5 ± 5.23; 5.38 ± 4.57, $P = 0.04$ | • IOP was significantly higher in the ECP vs. AGI group at 1 wk follow-up, not different between groups at 1 mo, | *"[ECP] may be a safe and efficient modality in treating refractory glaucoma compared with [AGI]," p. 237.* |

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| | • 1 mo: 11.38 ± 4.99; 10.82 ± 7.60, *P* = 0.4<br>• 2 mo: 13.41 ± 7.11; 21.88 ± 6.00, *P* = 0.03<br>• 3 mo: 13.57 ± 6.22; 20.4 ± 5.70, *P* = 0.01<br>• 4 mo: 13.28 ± 3.88; 16.53 ± 1.50, *P* = 0.03<br>• 5 mo: 13.64 ± 2.88; 17.1 ± 5.70, *P* = 0.08<br>• 6 mo: 14.00 ± 3.62; 17.78 ± 5.50, *P* = 0.06<br>• 12 mo: 15.45 ± 6.54; 16.59 ± 5.37, *P* = 0.4<br>• 18 mo: 13.93 ± 5.41; 14.38 ± 1.83, *P* = 0.5<br>• 24 mo: 14.07 ± 7.21 (compared with baseline, *P* < 0.001); 14.73 ± 6.44 (compared with baseline, *P* < 0.001), *P* = 0.7<br><br>IOP > 6 mm Hg and < 21 mm Hg (with or without medication), %, for ECP and AGI respectively:<br>• 12 mo: 82.35%; 76.47%, *P* = 0.1<br>• 24 mo: 73.52%; 70.58%, *P* = 0.5<br><br>**Medications** (number), mean ± SD (range), ECP and AGI respectively (*P* values for between-group comparisons):<br>• baseline: 3.0 ± 1.3; 3.5 ± 1.0, *P* = 0.7<br>• 24 mo: 2.0 ± 1.2; 2.5 ± 1.3, *P* = 0.3<br><br>**VA** (LogMar), mean ± SD (range), ECP and AGI respectively (*P* values for between-group comparisons):<br>• baseline: 0.67 ± 0.24; 0.69 ± 0.25, *P* = 0.8<br>• 12 mo: 0.74 ± 0.42; 0.98 ± 0.61, *P* = 0.1<br><br>**Safety**<br>**Complications during study,** n (%), ECP and AGI respectively (*P* values for between-group comparisons):<br>• choroid detachment: 1 (2.94%); 6 (17.64%); *P* = 0.1<br>• shallow anterior chamber: 0 (0%); 6 (17.64%); *P* = 0.02<br>• hyphema: 6 (17.64%); 5 (14.7%); *P* = 1.0<br>• cystic bleb: 0 (0%); 5 (14.7%); *P* = 0.05<br>• failure of the corneal graft: 1 (2.94%); 4 (11.76%); *P* = 0.3<br>• tube block: 0 (0%); 2 (5.88%); *P* = 0.4<br>• corneal touch: 0 (0%); 2 (5.88%); *P* = 0.4<br>• retina detachment: 1 (2.94%); 2 (5.88%); *P* = 1.0 | significantly lower in ECP vs. AGI at 2, 3, and 4 mo, and not different between groups thereafter up to 24 mo; IOP was significantly reduced from baseline at 24 mo in both groups<br>• The proportion of patients meeting the criteria for success was similar between groups at 12 and 24 mo follow-up<br>• The number of medications was not significantly different between groups at 24 mo follow-up<br>• VA was not different between groups at 12 mo follow-up<br>• Complications were similar between groups, except for shallow anterior chamber, which occurred in significantly more patients in the AGI group | *"There was no difference in the success rate between the [AGI] e and ECP in refractory glaucoma. The eyes that underwent Ahmed tube shunt implantation had more complications than those treated with ECP,"* p. 233. |

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| | • inflammatory precipitates in anterior chamber: 4 (11.76%); 0 (0%); *P* = 0.1<br>• tube exposure: 0 (0%); 2 (5.88%); *P* = 0.4<br>• hypotony: 1 (2.94%); 0 (0%); *P* = 1.0<br>• endophthalmitis: N/A; 1 (2.94%); *P* = 1.0<br>• phthisis bulbi: 1 (2.94%); 0 (0%); *P* = 1.0<br>○ Note: Some potential complications were not applicable to both interventions. | | |
| **Trabectome (or 2x iStent Inject) Vs. Trabeculectomy** | | | |
| Pahlitzsch et al. 2017[25] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean; Trabectome, 2x iStent Inject, MIGS (Trabectome and 2x iStent Inject groups combined), and Trabeculectomy respectively (*P* values for comparison with baseline unless otherwise specified):<br>• baseline: 19.1; 21.3; 20.5; 28.0; Trabeculectomy vs. MIGS, *P* = 0.097<br>• 1 d: 12.0 (*P* < 0.001); 11.7 (*P* < 0.001); 12.1 (*P* = NR); 12.7 (*P* <0 .001); Trabeculectomy vs. MIGS, *P* = 0.802<br>• 6 wk: 17.5 (*P* = 0.217); 15.3 (*P* = 0.005); 16.7 (*P* = NR); 13.6 (*P* = 0.003); Trabeculectomy vs. MIGS, *P* = 0.046<br>• 3 mo: 16.5 (*P* = 0.063); 14.1 (*P* = 0.005); 15.7 (*P* = NR); 13.3 (*P* = 0.001); Trabeculectomy vs. MIGS, *P* = 0.046<br>• 6 mo: 14.7 (*P* = 0.001); 16.0 (*P* = 0.068); 14.8 (*P* = NR); 12.9 (*P* = 0.005); Trabeculectomy vs. MIGS, *P* = 0.400<br><br>**Medications** (number), mean; Trabectome, 2x iStent Inject, MIGS (Trabectome and 2x iStent Inject groups combined), and Trabeculectomy respectively (*P* values for comparison with baseline unless otherwise specified):<br>• baseline: 2.62; 2.45; 2.5; 2.32; Trabeculectomy vs. MIGS, *P* = 0.476<br>• 1 d: 2.53 (*P* = 0.317); 2.00 (*P* = 0.024); 1.88 (*P* = NR); 0.21 (*P* = 0.003); Trabeculectomy vs. MIGS, *P* < 0.001<br>• 6 wk: 2.44 (*P* = 0.070); 1.90 (*P* = 0.026); 1.79 (*P* = NR); 0.44 (*P* = 0.001); Trabeculectomy vs. MIGS, *P* < 0.001<br>• 3 mo: 2.36 (*P* = 0.132); 1.50 (*P* = 0.157); 1.64 (*P* = NR); 0.61 (*P* = 0.001); Trabeculectomy vs. MIGS, *P* < 0.001<br>• 6 mo: 2.34 (*P* = 0.227); 2.50 (*P* = 0.317); 1.81 (*P* = NR); 0.50 (*P* = 0.006); Trabeculectomy vs. MIGS, *P* < 0.001 | • IOP was significantly reduced from baseline in the 2x iStent Inject and Trabeculectomy groups (but not Trabectome) at 6 wk and 3 mo, and in Trabectome and Trabeculectomy (but not 2x iStent Inject) groups at 6 mo, but there was no significant difference between groups at 6 mo<br>• IOP was significantly lower in the Trabeculectomy vs. MIGS (combined Trabectome and 2x iStent Inject) groups at 6 wk and 3 mo, but not 6 mo<br>• The number of medications was significantly reduced from baseline in the 2x iStent Inject group at 1 d and 6 wk but not 3 mo or 6 mo follow-up, and in the Trabeculectomy group at all follow-up time points, but was not different from | *"In this study cohort, the QoL can be maintained by all three surgical techniques. Patients, however, need lower numbers of topical medications in [Trabeculectomy], which would impact QoL even though it is not included in the NEI-VFQ-25. The decision of the most appropriate surgical technique should be made by including single QoL categories, IOP and glaucoma medication outcome,"* p. 351. |

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| | **VA** (logMAR), mean; Trabectome, 2x iStent Inject, MIGS (Trabectome and 2x iStent Inject groups combined), and Trabeculectomy respectively (*P* values for comparison with baseline unless otherwise specified):<br>• baseline: 0.3; 0.3; 0.3; 0.32; Trabeculectomy vs. MIGS, *P* = 0.609<br>• 1 d: 0.3 (*P* = 0.469); 0.2 (*P* = 0.452); 0.3 (*P* = NR); 0.4 (*P* = 0.028); Trabeculectomy vs. MIGS, *P* = 0.011<br>• 6 wk: 0.2 (*P* = 0.030); 0.16 (*P* = 0.018); 0.2 (*P* = NR); 0.32 (*P* = 0.721); Trabeculectomy vs. MIGS, *P* = 0.223<br>• 3 mo: 0.25 (*P* = 0.210); 0.16 (*P* = 0.204); 0.22 (*P* = NR); 0.4 (*P* = 0.553); Trabeculectomy vs. MIGS, *P* = 0.284<br>• 6 mo: 0.26 (*P* = 0.202); 0.2 (*P* = 0.273); 0.22 (*P* = NR); 0.3 (*P* = 0.905); Trabeculectomy vs. MIGS, *P* = 0.907<br><br>**Quality of life parameters:**<br>Note: Data for all QoL parameters are presented in order of Trabectome, 2x iStent Inject, MIGS, and Trabeculectomy groups, respectively.<br><br>**QoL – General health** at 6 mo post-operative (scale from 0 to 100), mean ± SD:<br>• 47.0 ± 13.7; 45.0 ± 19.1; 46.3 ± 15.5; 43.0 ± 21.0<br>  ○ *P* values: Trabeculectomy vs. MIGS, 0.546; Trabeculectomy vs. Trabectome vs. 2x iStent Inject, 0.702; Trabeculectomy vs. Trabectome, 0.442; Trabeculectomy vs. 2x iStent Inject, 0.883<br><br>**QoL – General vision** at 6 mo post-operative (scale from 0 to 100), mean ± SD:<br>• 69.2 ± 16.7; 63.9 ± 18.1; 67.5 ± 17.2; 61.6 ± 21.5<br>  ○ *P* values: Trabeculectomy vs. MIGS, 0.190; Trabeculectomy vs. Trabectome vs. 2x iStent Inject, 0.197; Trabeculectomy vs. Trabectome, 0.112; Trabeculectomy vs. 2x iStent Inject, 0.707<br><br>**QoL – Ocular pain** at 6 mo post-operative (scale from 0 to 100), mean ± SD:<br>• 71.0 ± 22.0; 71.8 ± 25.6; 71.2 ± 23.0; 75.0 ± 25.7<br>  ○ *P* values: Trabeculectomy vs. MIGS, 0.365; Trabeculectomy vs. Trabectome vs. 2x iStent Inject, 0.619; Trabeculectomy vs. Trabectome, 0.323; Trabeculectomy vs. 2x iStent Inject, 0.641<br><br>**QoL – Near activities** at 6 mo post-operative (scale from 0 to 100), mean ± SD:<br>• 75.9 ± 25.6; 72.2 ± 28.4; 74.8 ± 26.3; 66.0 ± 28.5 | baseline in the Trabectome group at any follow-up time point<br>• The number of medications was lower in Trabeculectomy vs. MIGS at all follow-up time points<br>• VA was significantly greater in Trabeculectomy vs. MIGS at 1 d post-operative, but was not different between groups at all other time points<br>• None of the 12 QoL parameters were significantly different between Trabeculectomy and MIGS groups at 6 mo<br>• There was only one between-group difference in any QoL parameter at 6 mo; "colour vision" was significantly higher in Trabectome vs. Trabeculectomy | |

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| | ○ *P* values: Trabeculectomy vs. MIGS, 0.140; Trabeculectomy vs. Trabectome vs. 2x iStent Inject, 0.296; Trabeculectomy vs. Trabectome, 0.116; Trabeculectomy vs. 2x iStent Inject, 0.418<br><br>**QoL – Distance activities** at 6 mo post-operative (scale from 0 to 100), mean ± SD:<br>• 73.4 ± 25.3; 65.2 ± 26.7; 70.8 ± 25.8; 61.6 ± 28.7<br>○ *P* values: Trabeculectomy vs. MIGS, 0.143; Trabeculectomy vs. Trabectome vs. 2x iStent Inject, 0.172; Trabeculectomy vs. Trabectome, 0.076; Trabeculectomy vs. 2x iStent Inject, 0.670<br><br>**QoL – Social functioning** at 6 mo post-operative (scale from 0 to 100), mean ± SD:<br>• 85.7 ± 22.0; 82.2 ± 27.1; 84.6 ± 23.5; 72.5 ± 30.8<br>○ *P* values: Trabeculectomy vs. MIGS, 0.060; Trabeculectomy vs. Trabectome vs. 2x iStent Inject, 0.160; Trabeculectomy vs. Trabectome, 0.059; Trabeculectomy vs. 2x iStent Inject, 0.232<br><br>**QoL – Mental health** at 6 mo post-operative (scale from 0 to 100), mean ± SD:<br>• 73.5 ± 27.0; 70.5 ± 27.0; 72.5 ± 26.8; 64.5 ± 29.7<br>○ *P* values: Trabeculectomy vs. MIGS, 0.157; Trabeculectomy vs. Trabectome vs. 2x iStent Inject, 0.297; Trabeculectomy vs. Trabectome, 0.129; Trabeculectomy vs. 2x iStent Inject, 0.441<br><br>**QoL – Role difficulties** at 6 mo post-operative (scale from 0 to 100), mean ± SD:<br>• 71.5 ± 30.6; 64.3 ± 35.6; 69.2 ± 32.2; 67.0 ± 33.2<br>○ *P* values: Trabeculectomy vs. MIGS, 0.749; Trabeculectomy vs. Trabectome vs. 2x iStent Inject, 0.760; Trabeculectomy vs. Trabectome, 0.603; Trabeculectomy vs. 2x iStent Inject, 0.888<br><br>**QoL – Dependency** at 6 mo post-operative (scale from 0 to 100), mean ± SD:<br>• 85.4 ± 22.5; 82.4 ± 27.5; 84.5 ± 23.9; 75.3 ± 36.1<br>○ *P* values: Trabeculectomy vs. MIGS, 0.312; Trabeculectomy vs. Trabectome vs. 2x iStent Inject, 0.588; Trabeculectomy vs. Trabectome, 0.308; Trabeculectomy vs. 2x iStent Inject, 0.533<br><br>**QoL – Driving** at 6 mo post-operative (scale from 0 to 100), mean ± SD:<br>• 76.2 ± 24.6; 42.5 ± 45.3; 65.0 ± 36.0; 54.5 ± 39.8<br>○ *P* values: Trabeculectomy vs. MIGS, 0.421; Trabeculectomy vs. Trabectome vs. 2x iStent | | |

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| | Inject, 0.143; Trabeculectomy vs. Trabectome, 0.138; Trabeculectomy vs. 2x iStent Inject, 0.537<br><br>**QoL – Colour vision** at 6 mo post-operative (scale from 0 to 100), mean ± SD:<br>• 94.1 ± 13.1; 85.5 ± 26.7; 91.5 ± 18.6; 81.2 ± 28.7<br>  ○ *P* values: Trabeculectomy vs. MIGS, 0.053; Trabeculectomy vs. Trabectome vs. 2x iStent Inject, 0.102; Trabeculectomy vs. Trabectome, 0.031; Trabeculectomy vs. 2x iStent Inject, 0.419<br><br>**QoL – Peripheral vision** at 6 mo post-operative (scale from 0 to 100), mean ± SD:<br>• 72.0 ± 27.9; 67.1 ± 30.1; 70.5 ± 28.4; 57.2 ± 33.3<br>  ○ *P* values: Trabeculectomy vs. MIGS, 0.089; Trabeculectomy vs. Trabectome vs. 2x iStent Inject, 0.194; Trabeculectomy vs. Trabectome, 0.069; Trabeculectomy vs. 2x iStent Inject, 0.351<br><br>**Safety**<br>None | | |
| Jea et al. 2012[64] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, Trabectome and Trabeculectomy, respectively, *P* values for between-group comparisons:<br>• baseline: 28.1 ± 8.6; 26.3 ± 10.9, *P* = 0.190<br>• 1 mo: 19.8 ± 7.5; 10.4 ± 5.9, *P* < 0.001<br>• 3 mo: 18.2 ± 6.0; 12.0 ± 6.7, *P* < 0.001<br>• 6 mo: 18.3 ± 5.6; 11.3 ± 4.8, *P* < 0.001<br>• 12 mo: 17.4 ± 5.9; 12.2 ± 5.4, *P* < 0.001<br>• 18 mo: 17.0 ± 4.6; 12.0 ± 5.1, *P* < 0.001<br>• 24 mo: 15.9 ± 4.5, 43.5% reduction from baseline; 10.2 ± 4.1; 61.3% reduction from baseline, *P* < 0.001<br>• 30 mo: 16.6 ± 7.7; 10.0 ± 3.6, *P* = 0.001<br><br>**Medications** (number), mean ± SD, Trabectome and Trabeculectomy, respectively, *P* values for between-group comparisons:<br>• Baseline: 3.3 ± 1.3; 3.4 ± 1.0, *P* = 0.289<br>• 1 mo: 2.6 ± 1.4; 0.4 ± 1.0, *P* < 0.001<br>• 3 mo: 2.8 ± 1.4; 0.4 ± 0.8, *P* < 0.001<br>• 6 mo: 2.4 ± 1.4; 0.8 ± 1.3, *P* < 0.001 | • IOP and number of medications tended to be reduced from baseline in both groups, but this was not tested statistically<br>• IOP and number of medications were not different between groups at baseline but were significantly lower in the Trabeculectomy vs. Trabectome group at all follow-up time points<br>• VA was not different from baseline at 12 mo or 24 mo in either group, but was significantly better in the Trabectome vs. Trabeculectomy group at all time points | *"Trabeculectomy had a lower absolute IOP at all time points and fewer antiglaucoma medications. Although trabeculectomy showed clear superiority to [Trabectome] with regard to effect on IOP, there was the opposite result with regard to complications,"* p. 41. |

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| | • 12 mo: 1.8 ± 1.3; 0.7 ± 1.2, *P* < 0.001<br>• 18 mo: 2.0 ± 1.5; 0.8 ± 1.2, *P* < 0.001<br>• 24 mo: 2.2 ± 1.6; 0.5 ± 1.0, *P* < 0.001<br>• 30 mo: 2.3 ± 1.8; 0.4 ± 1.0, *P* < 0.001<br><br>**VA (LogMAR),** mean ± SD, Trabectome and Trabeculectomy, respectively (*P* values for comparison with baseline unless otherwise stated):<br>• baseline: 0.34 ± 0.40; 0.63 ± 0.82, between-group comparison *P* = 0.001<br>• 12 mo: 0.36 ± 0.26 (*P* = 0.753); 0.72 ± 0.81 (*P* = 0.462), between-group comparison *P* = 0.001<br>• 24 mo: 0.39 ± 0.31 (*P* = 0.551); 0.78 ± 0.66 (*P* = 0.356), between-group comparison *P* = 0.001<br>  ○ There was no significant difference between groups in lines of Snellen VA lost (P = 0.055).<br>  ○ Significantly fewer patients in the Trabectome group (4.3%) lost ≥ 3 Snellen VA lines compared with patients in the Trabeculectomy group (12.7%; P = 0.028).<br><br>**Safety**<br>**Post-operative complications,** n (%), Trabectome and Trabeculectomy, respectively, *P* values for between-group comparisons where reported:<br>• early hypotony: 0 (0%); 10 (9.8%)<br>• persistent hypotony: 0 (0%); 5 (4.9%)<br>• wound leak: 0 (0%); 12 (11.8%)<br>• shallow anterior chamber: 0 (0%); 8 (7.8%)<br>• choroidals: 0 (0%); 4 (3.9%)<br>• early IOP spike: 4 (3.5%); 3 (2.9%)<br>• hyphema: 115 (100.0%); 3 (2.9%)<br>• cyclodialysis cleft: 1 (0.9%); 0 (0%)<br>• cystoid macular edema: 0 (0%); 2 (2.0%)<br>• conjunctival and tenon buttonhole: 0 (0%); 3 (2.9%)<br>• corneal abrasion: 0 (0%); 1 (1.0%)<br>• bullous keratopathy: 0 (0%); 1 (1.0%)<br>• **Total number of patients with complications including hyphema:** 115 (100.0%); 39 (38.2%), *P* < 0.001<br>• **Total number of patients with complications excluding hyphema:** 5 (4.3%); 36 (35.3%), *P* < 0.001 | • With the exception of hyphema, significantly more complications were reported in the Trabeculectomy group<br>• More additional glaucoma procedures were performed after Trabectome than Trabeculectomy | |

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| | **Additional glaucoma procedures**, n (%), Trabectome and Trabeculectomy, respectively, *P* values for between-group comparisons where reported:<br>• Trabeculectomy with MMC: 24 (20.8%); 0 (0%)<br>• BGI: 18 (15.6%); 5 (4.9%)<br>• repeated Trabectome: 4 (3.5%); 0 (0%)<br>• combined Trabectome with phacoemulsification: 1 (0.9%); 0 (0%)<br>• phacotrabeculectomy: 1 (0.9%); 0 (0%)<br>• express shunt: 1 (0.9%); 0 (0%)<br>• ECP: 1 (0.9%); 0 (0%)<br>• needle revision of Trabeculectomy with MMC: 0 (0%); 3 (2.9%)<br>• Trabectome: 0 (0%); 2 (2.0%)<br>• SLT: 0 (0%); 1 (1.0%)<br>• **Total number of patients with additional glaucoma procedures and surgeries**: 50 (43.5%); 11 (10.8%), *P* < 0.001 | | |
| **Xen45 Vs. Trabeculectomy** | | | |
| Schlenker et al. 2017[65] | **Clinical effectiveness**<br>**IOP** (mm Hg) at last follow-up, median [IQR]:<br>• last observation carried forward: Xen45, 13.0 [11.0 to 16.0]; Trabeculectomy, 13.0 [11.0 to 16.0], *P* = 0.98<br>• censoring for reoperation: Xen45, 13.0 [10.0 to 15.0]; Trabeculectomy, 13.0 [10.0 to 16.0], *P* = 0.32<br><br>**Medication use** (percentage of eyes) at 1 y follow-up:<br>• crude: Xen45 (n = 111), 25.1%, 95% CI, 17.3 to 35.0; Trabeculotomy (n = 74), 36.0%, 95% CI 24.9 to 48.9; *P* = NR<br>• Last observation carried forward: Xen45, 23.8%, 95% CI, 13.9 to 37.6; Trabeculotomy, 33.5%, 95% CI 20.2 to 50.0<br><br>**Medication use** (number) at last follow-up using last observation carried forward, median [IQR]:<br>• Xen45, 0.0 [0.0 to 1.0]; Trabeculectomy, 0.0 [0.0 to 0.0], *P* = NR<br><br>**BCVA** (logMAR) at last follow-up or before reoperation, median [IQR]:<br>• Xen45, 0.2 [0.1 to 0.5]; Trabeculectomy, 0.3 [0.1 to 0.5], *P* = 0.24<br><br>**Characteristics associated with surgical failure:**<br>• The following were not associated with surgical failure: Xen45 vs. Trabeculectomy, age < 75 | • IOP, medication use, and BCVA were similar between groups at follow-up<br>• There tended to be more post-surgical interventions and complications in the Trabeculectomy group (but this was not tested statistically)<br>• There tended to be more reoperations in the Xen45 group, but this did not reach statistical significance | *"There was no detectable difference in risk of failure and safety profiles between standalone ab interno [Xen45] with MMC and trabeculectomy with MMC,"* p. 1579. |

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| | y, female, poor preoperative vision (VA of 0.4 logarithm of the minimum angle of resolution or worse), preoperative IOP > 21 mm Hg, moderate or advanced vs. mild disease based on visual field MD (–6 cut-off), pseudophakia, prior LPI, prior trabeculoplasty.<br><br>**Effect Modification:**<br>• Eyes with preoperative IOP > 21 mm Hg tended to do better with Xen45 relative to Trabeculectomy; HR, 0.70; 95% CI, 0.43 to 1.12; eyes with preoperative IOP ≤ 21 mm Hg tended to do better with Trabeculectomy relative to Xen45; HR, 1.78; 95% CI, 0.97 to 3.27; interaction between preoperative IOP and intervention, *P* = 0.016<br>• Eyes with preoperative BCVA of > 0.4 logMAR tended to do better with Xen45 relative to Trabeculectomy; HR, 0.38; 95% CI, 0.16 to 0.89; eyes with BCVA of ≤ 0.4 logMAR or worse tended to do better with Trabeculectomy relative to Xen45; HR, 1.33; 95% CI, 0.86 to 2.05; interaction between preoperative BCVA and intervention, *P* = 0.010<br><br>**Safety**<br>**Post-operative interventions**, number, Xen45, Trabeculectomy (between-group comparison, *P* = NR):<br>• needling: 80, 52<br>• laser suture lysis: not relevant for intervention, 84<br>• anterior-chamber reformation: 22, 13<br>• bleb repair/conjunctival suturing: 2, 10<br>• Iris sweep/synechiolysis: 3, 4<br>• YAG to implant/ostomy: 3, 2<br>• MMC injection: 2, 0<br>• Xen45 reposition: 2, not relevant for intervention<br>• iridoplasty: 2, 0<br>• laser to ostomy: not relevant to intervention, 0<br>• bleb cautery: 1, 0<br>• **Total:** Xen45, 117; Trabeculectomy, 165<br><br>**Post-operative complications at > 1 mo**, number Xen45, Trabeculectomy (between-group comparison, *P* = NR):<br>• leak/dehiscence: 3, 12<br>• hyphema: 2, 2<br>• vitreous hemorrhage: 2, 1<br>• choroidals or choroidal folds: 1, 2 | | |

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| | • hypotony maculopathy: 2, 1<br>• uveitis: 2, 1<br>• corneal decompensation: 0, 1<br>• macular edema: 0, 3<br>• diplopia: 0, 0<br>• iris incarceration: not relevant for intervention, 2<br>• blocked Xen45: 1, not relevant for intervention<br>• exposed Xen45: 1, not relevant for intervention<br>• Xen45 – iris touch: 2, not relevant for intervention<br>• shallow anterior chamber: 0, 2<br>• dellen: 2, 0<br>• serious complication (any time):<br>  ○ retinal detachment: 0, 0<br>  ○ angle closure: 0, 0<br>  ○ suprachoroidal hemorrhage: 0, 0<br>  ○ malignant glaucoma: 4, 2<br>  ○ blebitis: 0, 1<br>  ○ endophthalmitis: 0, 0<br>  ○ no LP: 0, 0<br>• **Total:** Xen45, 22; Trabeculectomy, 30<br><br>**Reoperations,** n (%), Xen45, Trabeculectomy:<br>• Xen45: 7 (3.8%), 1 (0.6%)<br>• Baerveldt tube shunt: 6 (3.2%), 2 (1.2%)<br>• cyclophotocoagulation: 1 (0.5%), 3 (1.8%)<br>• Ahmed valve: 1 (0.5%), 1 (0.6%)<br>• Trabeculectomy: 2 (1.1%), 0 (0.0%)<br>• bleb revision: 1 (0.5%), 1 (0.6%)<br>• microshunt: 1 (0.5%), 0 (0.0%)<br>• suprachoroidal stent: 0 (0.0%), 1 (0.6%)<br>• trabecular bypass stents: 0 (0.0%), 1 (0.6%)<br>• **Total:** Xen45, 19 (10.3%); Trabeculectomy, 9 (5.3%), between-group comparison, *P* = 0.11<br>• Other laser/surgery:<br>  ○ Phaco: 11 (5.9%), 16 (9.5%)<br>  ○ LPI: 1 (0.5%), 1 (0.6%)<br>  ○ Trabeculoplasty: 1 (0.5%), 0 (0.0%) | | |

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| | ○ retinal surgery: 0 (0.0%), 1 (0.6%)<br>○ corneal surgery: 0 (0.0%), 0 (0.0%) | | |
| **Research Questions 3 and 4** | | | |
| **MIGS + Cataract Surgery Vs. Cataract Surgery Alone** | | | |
| **ECP + Phaco Vs. Phaco Alone** | | | |
| Kang et al. 2017[72] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, ECP + Phaco and Phaco, respectively (*P* values for comparison with baseline, where reported):<br>• baseline: 20.4 ± 6.25; NR<br>• follow-up: 14.4 ± 3.95 (*P* = 0.0000004); NR<br><br>**Glaucoma medications** (number), mean ± SD, ECP + Phaco and Phaco, respectively (*P* values for comparison with baseline, where reported):<br>• baseline: 2.7 ± 0.9; NR<br>• follow-up: 1.9 ± 1.3 (*P* = 0.001); NR<br><br>**VA** at follow-up (range 6 wk to 2 y 6 mo), number of eyes (%) compared with preoperative, ECP + Phaco and Phaco, respectively; no statistical comparisons:<br>• improved: 47 (75.8); 54 (87.1)<br>• same: 12 (19.4); 7 (11.3)<br>• worsened: 3 (4.8); 1 (1.61)<br><br>**Safety**<br>**Post-operative complications** in ECP + Phaco (n = 7 eyes; 11.3%):<br>• four eyes developed uveitis; more intensive topical steroids were required; all eyes had visual acuities of 6/6 at last follow-up<br>• one eye developed fibrinous uveitis with a pupillary membrane; YAG laser required<br>• one eye required intracameral tissue plasminogen activator injection with synechiolysis at 1 mo post-operative; BCVA of hand movement was unchanged<br>• one eye, with existing ocular cicatricial pemphigoid and bilateral juxtafoveal telangiectasia, developed macular oedema<br><br>**Post-operative complications** in the Phaco only group: None<br>• No cases of hypotony, lens subluxation or dislocation, or requirement of capsular tension ring in either group | • IOP and number of medications were reduced in ECP + Phaco but not reported in Phaco alone<br>• VA was unchanged or improved from baseline in most patients<br>• The ECP + Phaco group had more complications than those with Phaco alone (no complications) | *"[ECP + Phaco] should be considered as an effective, safe and predictable surgical treatment option for glaucoma patients with co-existing cataract,"* p. 1311. |

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| Perez Bartolome et al. 2017[73] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, ECP + Phaco and Phaco respectively (*P* values for comparison with baseline unless otherwise stated):<br>• baseline (as reported in study Table 1): 21.48 ± 5.41; 18.43 ± 3.68; between-group comparison, *P* = 0.005<br>• baseline (as reported in study Table 2): 21.45 ± 5.56; 18.43 ± 3.68; between-group comparison, *P* = NR<br>• 1 d: 17.88 ± 7.18 (*P* < 0.001); 12.03 ± 2.43 (*P* < 0.001)<br>• 7 d: 14.42 ± 4.78 (*P* < 0.001); 11.86 ± 2.58 (*P* = 0.024)<br>• 1 mo: 14.87 ± 4.4 (*P* < 0.001); 14.56 ± 1.56 (*P* < 0.001)<br>• 3 mo: 15.17 ± 3.95 (*P* < 0.001); 17.5 ± 2.31 (*P* = 0.204)<br>• 6 mo: 15.73 ± 3.88 (*P* < 0.001); 16.7 ± 1.91 (*P* = 0.021)<br>• 12 mo: 16.8 ± 3.81 (*P* < 0.001); 16.6 ± 1.63 (*P* = 0.013); *P* value for between-group comparison, *P* = 0.721<br><br>**IOP reduction from baseline** at 1 y, mean ± SD, ECP + Phaco and Phaco, respectively (*P* values for between-group comparisons):<br>• absolute IOP (mm Hg): 4.5 ± 5.13; 1.83 ± 3.61; *P* = 0.007<br>• % reduction in IOP: 21.56 ± 10.4; 9.9 ± 7.5; *P* = 0.003<br><br>**Medications** (number), mean ± SD, ECP + Phaco and Phaco, respectively (*P* values for comparison with baseline unless otherwise stated):<br>• baseline (as reported in study Table 1): 2.62 ± 0.82; 1.2 ± 0.8; between-group comparison, *P* < 0.001<br>• baseline (as reported in study Table 2): 2.61 ± 0.83; 1.2 ± 0.805; between-group comparison, *P* = NR<br>• 1 d: 2.55 ± 0.89 (*P* = 0.09); 1.13 ± 0.63 (*P* = 0.563)<br>• 7 d: 2.33 ± 0.85 (*P* < 0.001); 1 ± 0.74 (*P* = 0.083)<br>• 1 mo: 2.4 ± 0.87 (*P* = 0.005); 0.93 ± 0.78 (*P* = 0.058)<br>• 3 mo: 2.3 ± 0.87 (*P* = 0.003); 1.03 ± 0.66 (*P* = 0.057)<br>• 6 mo: 2.07 ± 0.91 (*P* < 0.001); 1.06 ± 0.58 (*P* = 0.255)<br>• 12 mo: 1.89 ± 0.98 (*P* < 0.001); 0.96 ± 0.61 (*P* = 0.032)<br><br>**Medication-free patients,** n (%): ECP + Phaco, 11 (15.94%); Phaco, 2 (6.66%), *P* = NR | • Disease severity at baseline was higher in the ECP + Phaco vs. Phaco groups<br>• Absolute IOP was significantly reduced from baseline in both groups at 1 d to 12 mo follow-up, but was not different between groups; the mean IOP reduction was significantly greater in the ECP + Phaco group (but IOP was higher at baseline in this group)<br>• The number of medications was significantly reduced from baseline in the ECP + Phaco group from 7 d to 12 mo follow-up, and in the Phaco group at 12 mo follow-up only; the reduction in the number of medications used at 12 mo was greater in the ECP + Phaco group (but the number of medications was higher at baseline in this group)<br>• VA was significantly reduced from baseline at 1 d follow-up in ECP + Phaco group only, but was significantly increased from baseline in both groups at 1 mo to | *"…[ECP + Phaco] is both safe and effective as surgical management for cataract and glaucoma. Compared to phacoemulsification alone, [ECP + Phaco] results in greater IOP reduction and reduced dependence on glaucoma medication in patients with moderate and advanced POAG. Despite [ECP + Phaco] having a higher number of complications, these were easily treated and did not limit the improvement in VA,"* p. 6. |

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| | **Medication reduction from baseline** at 1 y, mean ± SD, ECP + Phaco and Phaco, respectively (*P* values for between-group comparison):<br>• absolute medication (number): 0.73 ± 0.71; 0.23 ± 0.56; *P* = 0.001<br>• % reduction in number of medications: 26.68 ± 12.2; 21.3 ± 8.1; *P* = 0.032<br><br>**VA** (logMAR), mean ± SD, ECP + Phaco and Phaco, respectively (*P* values for comparison with baseline unless otherwise stated):<br>• baseline (as reported in study Table 1): 0.33 ± 0.25; 0.44 ± 0.3; between-group comparison, *P* = 0.079<br>• baseline (as reported in study Table 2): 0.33 ± 0.25; 0.42 ± 0.2; between-group comparison, *P* = NR<br>• 1 d: 0.61 ± 0.29 (*P* < 0.001); 0.15 ± 0.11 (*P* < 0.001)<br>• 7 d: 0.31 ± 0.19 (*P* = 0.635); 0.11 ± 0.05 (*P* < 0.001)<br>• 1 mo: 0.12 ± 0.08 (*P* < 0.001); 0.11 ± 0.04 (*P* < 0.001)<br>• 3 mo: 0.1 ± 0.05 (*P* < 0.001); 0.12 ± 0.05 (*P* < 0.001)<br>• 6 mo: 0.08 ± 0.07 (*P* < 0.001); 0.08 ± 0.04 (*P* < 0.001)<br>• 12 mo: 0.07 ± 0.05 (*P* < 0.001); 0.09 ± 0.02 (*P* < 0.001)<br><br>**Subgroup Analysis — within ECP + Phaco group, patients without vs. with previous surgeries, respectively:**<br>• IOP reduction (mm Hg): 5.2 ± 5.3; 4.12 ± 5.21, *P* = 0.12<br>• % IOP reduction (%): 22.13 ± 11.5; 19.52 ± 9.3, *P* = 0.09<br>• reduction in medications (number): 0.79 ± 0.6; 0.71 ± 0.83, *P* = 0.11<br>• % reduction in number of medications (%): 27.72 ± 10.5; 25.91 ± 14.32, *P* = 0.085<br><br>**Safety**<br>**Complications,** n (%), between-group difference, *P* = 0.047; ECP + Phaco and Phaco, respectively:<br>• none: 52 (75.36%); 27 (90%)<br>• raised IOP: 5 (7.24%); 1 (3.33%)<br>• persistent (≥ 6 wk) post-operative uveitis: 6 (8.69%); 1 (3.33%)<br>• macular edema: 4 (5.79%); 1 (3.33%)<br>• choroidal detachment: 1 (1.45%); 0 (0%)<br>• retinal detachment: 1 (1.45%); 0 (0%) | 12 mo follow-up<br>• There were more post-operative complications in the ECP + Phaco vs. the Phaco group | |

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| Sheybani et al. 2015[74] | **Clinical effectiveness**<br>**IOP** (mm Hg) averaged over 3 visits, mean ± SD, ECP + Phaco and Phaco, respectively (*P* values for between-group comparisons unless otherwise stated):<br>• baseline: 17.6 ± 9.0; 16.1 ± 4.2, *P* = 0.083<br>• at follow-up (range 1 to 43.4 mo): 14.4 ± 3.65 (compared with baseline, *P* = 0.003); 14.1 ± 3.83 (compared with baseline, *P* = 0.007), *P* = 0.378<br><br>**Medications** (number), mean (range), ECP + Phaco and Phaco, respectively:<br>• baseline: 2.0 (0 to 3); 0.4 (0 to 3), *P* < 0.001<br>• at follow-up (range 1 to 43.4 mo): 1.51 (0 to 3) (compared with baseline, *P* < 0.001); 0.38 (0 to 3) (compared with baseline, *P* = 0.434), *P* < 0.001<br><br>**BCVA** (logMAR), mean, ECP + Phaco and Phaco, respectively:<br>• baseline: 0.382; 0.358, *P* = 0.608<br>• 1 mo: 0.200; 0.144, *P* = 0.125<br><br>**Safety**<br>None | • IOP was reduced from baseline in both groups and was not different between groups at follow-up; however, mean follow-up was longer in the ECP + Phaco vs. Phaco group (7.4 mo vs. 2.1 mo)<br>• The number of medications was reduced from baseline at follow-up only in the ECP + Phaco group, but was significantly lower in the Phaco vs. ECP + Phaco group at both time points<br>• BCVA was not different between groups at baseline or follow-up | *"Only the [ECP + Phaco] group had a statistically significant decrease in the number of ocular hypotensive medication[s] used between preoperative and postoperative visits (*p < *0.05). Both groups had a significant decrease in IOP between preoperative and postoperative visits (*p < *0.05), with a larger decrease observed in the [ECP + Phaco] group (18.2%) compared with the cataract alone group (12.4%),"* p. 199. |
| Siegel et al. 2015[75] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, ECP + Phaco and Phaco, respectively (*P* values for between-group comparisons):<br>• baseline: 17.2 ± 4.8; 17.7 ± 4.4, *P* = 0.52<br>• 6 mo: 14.7 ± 3.5; 16.0 ± 3.3, *P* = 0.06<br>• 12 mo: 14.7 ± 3.5; 16.2 ± 3.4, *P* = 0.17<br>• 18 mo: 14.9 ± 3.1; 14.4 ± 3.2, *P* = 0.39<br>• 24 mo: 15.0 ± 3.1; 14.1 ± 2.9, *P* = 0.08<br>• 30 mo: 14.8 ± 3.8; 13.5 ± 2.5, *P* = 0.11<br>• 36 mo: 14.6 ± 3.1; 15.5 ± 3.6, *P* = 0.34<br>  ○ In both groups, there was a main effect of time, *P* < 0.001<br><br>**IOP reduction from baseline (%)**, mean ± SD, ECP + Phaco and Phaco, respectively (P values NR):<br>• 1 mo: 4.5 ± 2.2; 2.2 ± 4.3<br>• 6 mo: 11.5 ± 1.8; 3.9 ± 4.0 | • IOP was reduced from baseline in both groups, but mean IOP was not different between groups at any time point<br>• The number of medications was reduced from baseline in both groups, and was significantly lower in the ECP + Phaco vs. Phaco group at baseline (possibly; inconsistent *P* values reported) and all follow-up time points<br>• VA tended to increase from baseline to 36 mo | *"Combined [ECP + Phaco] effectively lowers or maintains intraocular pressure and results in ocular hypertensive medication reduction up to 36 months when compared with Phaco alone. Therefore, [ECP + Phaco] may help to increase medication compliance and reduce glaucoma progression in mild to moderate glaucoma,"* p. 531-532. |

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| | • 12 mo: 10.9 ± 1.6; 4.4 ± 4.1<br>• 18 mo: 9.9 ± 1.6; 15.1 ± 3.3<br>• 24 mo: 10.3 ± 1.5; 15.2 ± 4.4<br>• 30 mo: 14.8 ± 1.3; 17.2 ± 4.3<br>• 36 mo: 12.6 ± 1.4; 7.1 ± 5.9<br><br>**Medications** (number), mean ± SD, ECP + Phaco and Phaco, respectively (*P* values for between-group comparisons):<br>• baseline: 1.3 ± 0.6; 1.5 ± 0.7, reported as *P* = 0.22 in study Table 1 and *P* = 0.02 in study Table 2<br>• 6 mo: 0.1 ± 0.4; 1.3 ± 0.8, *P* <0.001<br>• 12 mo: 0.2 ± 0.6; 1.4 ± 1.0, *P* <0.001<br>• 18 mo: 0.2 ± 0.5; 1.4 ± 0.9, *P* <0.001<br>• 24 mo: 0.2 ± 0.5; 1.3 ± 0.9, *P* <0.001<br>• 30 mo: 0.2 ± 0.6; 1.3 ± 0.9, *P* <0.001<br>• 36 mo: 0.2 ± 0.59; 1.3 ± 0.61, *P* < 0.001<br>  ○ In both groups, there was a main effect of time, *P* < 0.001<br><br>**VA** (Snellen), median, ECP + Phaco and Phaco, respectively (*P* values for between-group comparisons):<br>• baseline: 20/50; 20/60, *P* = 0.10<br>• 36 mo: 20/30; 20/30, *P* = 0.07<br><br>**Safety**<br>**Surgical complications, n:**<br>• ECP + Phaco*:* Secondary glaucoma procedure required, 7; CME development, 4; retinal detachments, 2; penetrating keratoplasty required, 1<br>• Phaco*:* CME development, 1<br><br>**IOP spikes** were only reported for the complete sample and not for the individual groups. Overall, 90.03% of patients had no IOP spikes; 8.04% had 1 IOP spike; and 1.91% had 2 IOP spikes. | follow-up in both groups, but this was not tested statistically, and VA was not significantly different between groups at either time point<br>• Full and qualified success were both significantly greater in the ECP + Phaco group vs. the Phaco group<br>• There were few complications overall, and there tended to be more complications in the ECP + Phaco vs. Phaco group, but this was not tested statistically | |
| Francis et al. 2014[84] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, ECP + Phaco and Phaco alone, respectively (*P* values for between-group comparisons):<br>• Baseline: 18.1 ± 3.0; 18.1 ± 3.0, *P* = 1.00 | • IOP was significantly reduced from baseline in both groups at 36 mo, but IOP was significantly | *"[ECP] added to cataract extraction resulted in greater reduction in IOP and glaucoma medications than cataract* |

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| | • 6 mo: 15.6 ± 2.5; 17.9 ± 3.5, *P* < 0.001<br>• 12 mo: 16.0 ± 2.8; 17.5 ± 3.6, *P* = 0.004<br>• 24 mo: 16.0 ± 3.3; 17.3 ± 3.2, *P* = 0.01<br>• 36 mo: 15.4 ± 2.5; 17.2 ± 3.0, *P* = 0.003<br><br>**IOP change from baseline** (%), mean ± SD, ECP + Phaco and Phaco alone, respectively (*P* values for comparison with baseline unless otherwise stated):<br>• 6 mo: 12.4 ± 16.7 (P < 0.001); 0.7 ± 13.1 (P = NS), between-group *P* < 0.001<br>• 12 mo: 10.2 ± 17.1 (P < 0.001); 2.7 ±16.2 (P = NS), between-group *P* = 0.005<br>• 24 mo: 10.1 ± 18.7 (P < 0.001); 0.8 ± 12 (P = NS), between-group *P* = 0.02<br>• 36 mo: 13.6 ± 15.1 (P < 0.001); 5.1 ± 10.4 (P = 0.01), between-group *P* = 0.003<br><br>**Medications** (number), mean ± SD, ECP + Phaco and Phaco alone, respectively (*P* values between-group comparisons):<br>• baseline: 1.5 ± 0.8; 2.4 ± 1.0, *P* < 0.001<br>• 6 mo: 0.3 ± 0.7; 1.5 ± 1.2, *P* < 0.001<br>• 12 mo: 0.4 ± 0.7; 1.8 ± 1.2, *P* < 0.001<br>• 24 mo: 0.4 ± 0.7; 2.0 ± 1.0, *P* < 0.001<br>• 36 mo: 0.4 ± 0.7; 2.3 ± 1.0, *P* < 0.001<br><br>**Reduction in number of medications from baseline** (n), mean ± SD, ECP + Phaco and Phaco alone, respectively (*P* values for comparison with baseline unless otherwise stated):<br>• 6 mo: –1.1 ± 0.8 (*P* < 0.001); –0.9 ± 1.2 (*P* < 0.001), between-group *P* = 0.24<br>• 12 mo: –1.0 ± 0.9 (*P* < 0.001); –0.6 ± 0.9 (*P* < 0.001), between-group *P* = 0.006<br>• 24 mo: –1.1 ± 0.9 (*P* < 0.001); –0.4 ± 0.8 (*P* < 0.001), between-group *P* < 0.001<br>• 36 mo: –1.0 ± 0.9 (*P* < 0.001); –0.1 ± 0.8 (*P* = NS), between-group *P* < 0.001<br><br>**Safety**<br>**Adverse events,** n, (%), ECP + Phaco and Phaco alone, respectively (*P* values NR):<br>• anterior-chamber hemorrhage: 2 (2.5%), 0 (0%)<br>• significant inflammation: 0 (0%), 2 (2.5%)<br>• CME: 0 (0%), 3 (3.8%)<br>• hemorrhage: 0 (0%), 1 (1.3%) | lower in ECP + Phaco vs. Phaco alone at all follow-up time points<br>• The number of medications was significantly reduced from baseline at all follow-up time points in both groups (with the exception of 36 mo in Phaco alone), but was significantly lower in the ECP + Phaco group vs. the Phaco alone group at all time points<br>• Adverse events were similar between groups, but this was not tested statistically | *extraction alone over a 3-year period,"* p. 1319.<br><br>*"The data indicate that combining ECP with [Phaco does] not substantially [add] to the risks of [Phaco] alone,"* p. 1319. |

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| **1x or 2x iStent + Phaco Vs. Phaco Alone** | | | |
| El Wardani et al. 2015[76] | **Clinical effectiveness**<br>Note: In this study, different numerical values were reported in the abstract, text, and tables; all distinct values are presented here (e.g., value 1 *or* value 2).<br><br>**IOP** (mm Hg), mean, iStent + Phaco, 2x iStent + Phaco, and Phaco alone, respectively (*P* values for comparison with baseline where available):<br>• baseline: 16.7 *or* 17.5; 17.0; 16.3<br>• 1 d: 18.2; 16.1; 17.0<br>• 1 wk: 16.7; 16.4; 16.4<br>• 1 mo: 13.9; 15.5; 14.5<br>• 3 mo: 15.0; 13.8; 14.0<br>• 6 mo: 15.1 *or* 14.7 (*P* < 0.16 *or* *P* = 0.01); 13.8 *or* 14.4 (P = 0.05 *or* *P* = 0.07); 13.9 *or* 14.2 (*P* < 0.01)<br>○ *"There was no significant change between groups at any time point"* p. 444 (*P* values NR)<br><br>**Medications** (number), mean, iStent + Phaco, 2x iStent + Phaco, and Phaco alone, respectively (*P* values for comparison with baseline where available):<br>• baseline: 1.8 *or* 2.5; 2.1; 1.9<br>• 1 d: 0.6; 0.3; 1.9<br>• 1 wk: 1.0; 1.3; 1.6<br>• 1 mo: 1.0; 1.7; 1.5<br>• 3 mo: 0.8; 1.0; 1.7<br>• 6 mo: 1.0 *or* 0.8 (*P* = NR *or* *P* = 0.04); 1.0 *or* 1.2 (*P* < 0.01 *or* *P* = NR); 1.6 *or* 1.8 (*P* = 0.12 *or* *P* = NR)<br>○ *"There was a significant decrease in medications in both iStent groups compared with phacoemulsification alone"* p. 445 (*P* values NR)<br><br>**VA** (units not specified), median, iStent + Phaco, 2x iStent + Phaco, and Phaco alone respectively:<br>• baseline: 0.4; 0.5; 0.3<br>• other time points: NR<br>*"There was a significant improvement of visual acuity in all groups." (P* = NR)<br><br>**Safety**<br>None | • Because of inconsistency in reporting, interpretation of findings is unclear<br>• IOP may have been unchanged *or* significantly reduced from baseline at 6 mo in the iStent + Phaco and 2x iStent + Phaco groups, and appeared to have been significantly reduced from baseline at 6 mo in the Phaco alone group, with no significant between-group difference in IOP at any time point<br>• The number of medications may have been reduced from baseline in the iStent + Phaco and 2x iStent + Phaco, but not Phaco alone, groups | *"iStent implantation resulted in similar IOP reduction to phacoemulsification alone but achieved a significantly greater reduction in glaucoma medications. This may improve compliance and quality of life, and reduce health care costs in patients with early to moderate glaucoma,"* p. 442. |

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| Fea et al. 2015[66]<br><br>and<br><br>Fea 2010[67] | **Clinical effectiveness**<br>**IOP** (medicated unless otherwise stated; mm Hg), mean ± SD, iStent + Phaco and Phaco, respectively (*P* values for between-group comparisons unless otherwise stated):<br>• baseline: 17.9 ± 2.6; 17.3 ± 3.0, *P* = 0.512<br>• 12 mo: 14.7 ± 1.3; 15.6 ± 1.1, *P* = NR<br>• 12 mo (after medication washout): 16.1 ± 2; 18.4 ± 3.1, *P* = 0.05<br>• 15 mo: 14.8 ± 1.2; 15.7 ± 1.1, *P* = 0.031<br>• 16 mo (after 1 mo medication washout): 16.6 ± 3.1; 19.2 ± 3.5, *P* = 0.042<br>• 48 mo: 15.9 ± 2.3; 17 ± 2.5, *P* = NS<br>• 48 mo (after medication washout): 17.5 ± 2.3 (compared with before washout *P* = 0.14); 20.4 ± 3.2 (compared with before washout *P* = 0.04)<br><br>**Reduction in IOP** from baseline (mm Hg), mean ± SD where reported, iStent + Phaco and Phaco, respectively:<br>• 15 mo: 3.2 ± 3.0; 1.6 ± 3.2, *P* = 0.177<br>• 48 mo (after medication washout): 0.3; 3.7; between-group difference 14.2% (*P* = 0.02)<br><br>**Medications** (number), mean ± SD, iStent + Phaco and Phaco, respectively (*P* values for between-group comparisons unless otherwise stated):<br>• baseline: 2.0 ± 0.9; 1.9 ± 0.7, *P* = NR<br>• 12 mo: 0.4 ± 0.7 (compared with baseline *P* = 0.003); 1 ± 1 (compared with baseline *P* = 0.01), *P* = NR<br>• 15 mo: 0.4 ± 0.7; 1.3 ± 1.0, *P* = 0.007<br>• 48 mo: 0.5 ± 0.8 (compared with baseline *P* = 0.005); 0.9 ± 1 (compared with baseline *P* = 0.01); *P* = NS<br><br>**Number of patients requiring no medication at 15 mo,** n (%), iStent + Phaco and Phaco, respectively:<br>• 8 (67%); 5 (24%), *P* = 0.027<br><br>**Safety**<br>**Adverse events, n:**<br>• iStent + Phaco: Stent malposition, 2<br>• Phaco: Ruptured capsule, 1 | • Absolute IOP was significantly lower at both medicated (15 mo) and unmedicated (16 mo) follow-up in the iStent + Phaco vs. Phaco groups, but was not different between groups at 48 mo follow-up<br>• Medication use was significantly lower in the iStent + Phaco vs. Phaco groups at 15 mo but not 48 mo follow-up | *"Phacoemulsification with stent implantation was more effective in controlling IOP than phacoemulsification alone; the safety profiles were similar,"* p. 407.[67]<br><br>*"In conclusion, most patients having a combined* [iStent + Phaco] *maintained IOP target levels without medication through 15 months postoperatively. Conversely, the majority of patients having only* [Phaco] *reached the target IOP only with the addition of medications. Therefore, the stent reduced the need for medications postoperatively…"* p. 411.[67]<br><br>*"[P]atients having* [iStent + Phaco] *maintained low IOP levels after 48 months of follow-up.* [Phaco] *alone showed a loss of efficacy in controlling IOP over time. Both treatments reduced the number of ocular hypotensive medications prescribed,"* p. 4.[66] |

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| Craven et al. 2012[68]<br><br>and<br><br>Samuelson et al. 2011[34] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, iStent + Phaco and Phaco alone, respectively, *P* values for between-group comparisons where available:<br>• screening (medicated): 18.7 ± 3.3; 18.0 ± 3.0<br>• baseline (unmedicated): 25.2 ± 3.5; 25.5 ± 3.7, *P* = 0.517<br>• 12 mo (consistent cohort): 17.0 ± 2.8; 17.0 ± 3.1, *P* = NR<br>• 24 mo (consistent cohort): 17.1 ± 2.9; 17.8 ± 3.3, *P* = NR<br><br>**Reduction in IOP from unmedicated screening** (mm Hg), iStent + Phaco and Phaco alone, respectively, *P* values NR:<br>• 12 mo: 8.4 ± 3.6; 8.5 ± 4.3<br>• 24 mo: 8.4 ± NR; 7.5 ± NR<br><br>**Reduction in IOP from medicated baseline** (mm Hg), iStent + Phaco and Phaco alone, respectively, *P* value NR:<br>• 12 mo: 1.5 ± 3.0; 1.0 ± 3.3<br><br>**Medications** (number), mean ± SD, iStent + Phaco and Phaco alone, respectively (*P* values for between-group comparisons):<br>• screening: 1.5 ± 0.7; 1.5 ± 0.6, *P* = 0.451<br>• 12 mo (consistent cohort): 0.2 ± 0.6; 0.4 ± 0.7, *P* = 0.016<br>• 24 mo (consistent cohort): 0.3 ± 0.6; 0.5 ± 0.7, *P* = NS<br><br>**Reduction in medications from screening** (number), iStent + Phaco and Phaco alone, respectively, *P* value for between-group comparison:<br>• 12 mo: 1.4 ± 0.8; 1.0 ± 0.8, *P* = 0.005<br><br>**CDVA,** n (%), iStent + Phaco and Phaco alone, respectively, *P* values NR:<br>Baseline:<br>• 20/40 or better: 49 (45%); 53 (44%)<br>12 mo:<br>• 99 (94%); 101 (90%)<br>24 mo:<br>• 20/40 or better: NR (93%); NR (91%)<br>• 20/32 or better: NR (83%); NR (82%)<br>• 20/25 or better: NR (63%); NR (67%) | • At 12 and 24 mo follow-up, absolute mean IOP tended to be similar between groups (statistical comparison not reported)<br>• The number of medications was significantly lower in the iStent + Phaco vs. the Phaco alone group at 12 months, but was not different between groups at 24 months<br>• CDVA was similar between groups, but this was not tested statistically<br>• The VF was similar between groups at baseline and 24 mo follow-up<br>• Complications were similar between groups, but this was not tested statistically | *"A significantly higher proportion of patients [with iStent + Phaco] had IOP control on no medication through 2 years postoperatively compared with patients having [Phaco] alone. Both groups had a similar favorable long-term safety profile,"* p. 1345.[68]<br><br>*"In conclusion, the implantation of the stent in patients undergoing cataract surgery provided clinically and statistically significant improvements in the management of elevated IOP compared with [Phaco] alone, with a favorable safety profile and clinically significant reductions in IOP and medication,"* p. 466.[34]<br><br>*"Although mean reduction in IOP appeared similar in both groups, a substantially higher level of medication was used in the [Phaco alone] group to maintain this similar IOP level,"* p. 463.[34] |

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| | • 20/20 or better: NR (34%); NR (32%)<br><br>**VF mean deviation (dB),** mean ± SD, iStent + Phaco and Phaco alone, respectively, *P* values for between-group comparisons:<br>• baseline: –3.75 ± 3.03; –3.74 ± 3.86, *P* = 0.983<br>• 24 mo: –3.22 ± 3.01; –3.16 ± 3.66, *P* = NS<br><br>**VF PSD (dB),** mean ± SD, iStent + Phaco and Phaco alone, respectively, *P* values for between-group comparisons:<br>• baseline: 2.89 ± 1.79; 2.79 ± 1.90, *P* = NR<br>• 24 mo: 3.39 ± 2.29; 3.17 ± 2.51, *P* = NS<br><br>**Safety**<br>**Intraoperative complications,** n (%), iStent + Phaco and Phaco alone, respectively, *P* values NR:<br>Cataract surgery complications:<br>• vitreous removal/vitrectomy: 5 (4.3%); 3 (2.6%)<br>• IOP removal and replacement (torn IOL haptic): 0 (0%); 1 (0.9%)<br>Stent implantation complications:<br>• unsuccessful stent implantation: 1 (0.9%); NA<br>• intraoperative stent removal and replacement: 1 (0.9%); NA<br>• stent malposition: 1 (0.9%); NA<br>• iris touch: 8 (7.0%); NA<br>• endothelial touch: 1 (0.9%); NA<br><br>**Post-operative complications ≥ 2% at 12 mo,** n (%), iStent + Phaco and Phaco alone, respectively, *P* values NR:<br>• anticipated early post-operative event[1]: 14 (13%); 15 (12%)<br>• stent obstruction by iris, vitreous, fibrous overgrowth, fibrin, blood, and so forth: 4 (4%); 0 (0%)<br>• posterior capsular opacification: 3 (3%); 8 (7%)<br>• stent malposition: 3 (3%); 0 (0%)<br>• subconjunctival hemorrhage: 2 (2%); 2 (2%)<br>• elevated IOP, other: 2 (2%); 1 (1%)<br>• epiretinal membrane: 2 (2%); 1 (1%)<br>• iris atrophy: 2 (2%); 0 (0%) | | |

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| | • blurry vision or visual disturbance: 1 (1%); 6 (5%)<br>• iritis: 1 (1%); 6 (5%)<br>• dry eye: 1 (1%); 2 (2%)<br>• elevated IOP requiring treatment with oral or intravenous medications or surgical interventions: 1 (1%); 2 (2%)<br>• macular edema: 1 (1%); 2 (2%)<br>• foreign body sensation: 0 (0%); 3 (2%)<br>• allergic conjunctivitis: 0 (0%); 2 (2%)<br>• mild pain: 0 (0%); 2 (2%)<br>• rebound inflammation from tapering steroids: 0 (0%); 2 (2%)<br><br>**Post-operative complications ≥ 3% at 24 mo,** n (%), iStent + Phaco and Phaco alone, respectively, *P* values NR:<br>• anticipated early post-operative event:[a] 20 (17.2%); 22 (18.8%)<br>• posterior capsule opacification: 7 (6.0%); 12 (10.3%)<br>• elevated IOP: 5 (4.3%); 8 (6.8%)<br>  ◦ elevated IOP — other: 4 (3.4%); 5 (4.3%)<br>  ◦ elevated IOP requiring treatment with oral or intravenous medications or with surgical intervention: 1 (0.9%); 3 (2.6%)<br>• stent obstruction: 5 (4.3%); NA<br>• blurry vision or visual disturbance: 4 (3.4%); 8 (6.8%)<br>• stent malposition: 3 (2.6%); NA<br>• iritis: 1 (0.9%); 6 (5.1%)<br>• conjunctival irritation due to hypotensive medication: 1 (0.9%); 3 (2.6)<br>• disc hemorrhage: 1 (0.9%); 3 (2.6%)<br><br>**Secondary surgical interventions at 12 mo,** n *(%),* iStent + Phaco and Phaco alone, respectively, *P* values NR:<br>• paracentesis: 31 (28%); 33 (27%)<br>• Nd:YAG laser capsulotomy: 4 (4%); 7 (6%)<br>• stent repositioning: 3 (3%); NA<br>• punctal cautery/punctual plugs: 1 (1%); 2 (2%)<br>• focal argon laser photocoagulation: 1 (1%); 0 (0%)<br>• Nd:YAG laser for stent obstruction: 1 (1%); NA<br>• stent removal and replacement: 1 (1%); NA<br>• trabeculoplasty: 0 (0%); 2 (2%) | | |

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| | • deep sclerectomy/sclerostomy: 0 (0%); 1 (1%)<br>• IOL removal and replacement: 0 (0%); 1 (1%)<br>• LASIK: 0 (0%); 1 (1%)<br>• pupilloplasty: 0 (0%); 1 (1%)<br>• vitrectomy: 0 (0%); 1 (1%)<br>• wound resuture due to wound leak: 0 (0%); 1 (1%)<br><br>**Secondary surgical interventions at 24 mo**, n (%), iStent + Phaco and Phaco alone, respectively, *P* values NR:<br>• stent repositioning: 3 (2.6%); NA<br>• stent removal and replacement: 1 (0.9%); NA<br>• Nd:YAG laser for stent obstruction: 1 (0.9%); NA<br>• trabeculoplasty: 1 (0.9%); 2 (1.7%)<br>• focal argon laser photocoagulation: 1 (0.9%); 0 (0%)<br>• deep sclerectomy/sclerostomy: 0 (0%); 1 (0.9%)<br>• IOL removal and replacement: 0 (0%); 1 (0.9%)<br>• LASIK: 0 (0%); 1 (0.9%)<br>• pupilloplasty: 0 (0%); 1 (0.9%)<br>• vitrectomy: 0 (0%); 1 (0.9%)<br>• wound resuture due to wound leak: 0 (0%); 1 (0.9%)<br>• **Total patients (some had > 1 intervention):** 5 (4.3%); 6 (5.1%)<br><br>[a] "Anticipated early post-operative events" included early post-operative corneal edema, anterior-chamber cells, corneal abrasion, discomfort, subconjunctival hemorrhage, blurry vision, and floaters as anticipated in the early period after cataract surgery. | | |
| Fernandez-Barrientos et al. 2010[69] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, 2x iStent + Phaco and Phaco alone, respectively (*P* values for between-group comparisons):<br>• baseline: 24.2 ± 1.8; 23.6 ± 1.5, *P* = 0.18<br>• 1 d: 21.9 ± 10.1; 26.4 ± 8.1, *P* = 0.08<br>• 1-2 wk: 16.5 ± 4.4; 18.2 ± 4.2, *P* = 0.28<br>• 1 mo: 16.7 ± 3.1; 18.9 ± 1.4, *P* = 0.01<br>• 3 mo: 15.2 ± 2.5; 18.6 ± 3.4, *P* = 0.009<br>• 6 mo: 15.6 ± 3.3; 19.6 ± 4, *P* = 0.02<br>• 12 mo: 17.6 ± 2.8; 19.8 ± 2.3, *P* = 0.04 | • IOP was significantly lower in the 2x iStent + Phaco group vs. the Phaco alone group at every follow-up time point (except 1 d and 1-2 wk); no within-group statistical comparisons with baseline were conducted<br>• The mean number of medications was not | *"With respect to efficacy, [2x iStent + Phaco] provided significant IOP reductions as well as a significant reduction in the need for concomitant medical treatment,"* p. 3331. |

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| | **Medications** (number), mean ± SD (range), 2x iStent + Phaco and Phaco alone, respectively (*P* values for between-group comparisons):<br>• baseline: 1.1 ± 0.5 (0-1); 1.2 ± 0.7 (0-2), *P* = 0.66<br>• 1 d: NR<br>• 1-2 wk: NR<br>• 1 mo: 0.1 ± 0.2 (0 to 1); 0.1 ± 0.3 (0 to 1), *P* = 0.51<br>• 3 mo: 0.1 ± 0.2 (0 to 1); 0.3 ± 0.5 (0 to 1), *P* = 0.06<br>• 6 mo: 0.1 ± 0.5 (0 to 2); 0.5 ± 0.7 (0 to 2), *P* = 0.03<br>• 12 mo: 0.00 (0); 0.7 ± 1.0 (0 to 3), *P* = 0.007<br><br>**Safety**<br>**Intraoperative complications**, n (%), 2x iStent + Phaco and Phaco alone, respectively:<br>• malpositioned stent: 6 (18% of the total number of stents implanted; number of eyes affected NR); NA | significantly different between groups at 1 d, 1-2 wk, 1 mo, or 3 mo follow-up, but was significantly lower in the 2x iStent + Phaco group vs. the Phaco alone group at 6 and 12 mo follow-up; no statistical comparisons with baseline were conducted<br>• iStent malposition was present in 18% of the 2x iStent + Phaco group; no other intraoperative complications were reported | |
| **Hydrus Microstent + Phaco Vs. Phaco Alone** | | | |
| Samuelson et al. 2018[88] | **Clinical effectiveness**<br>**Washed-out modified DIOP** (mm Hg), mean ± SD, Hydrus + Phaco and Phaco alone, respectively (*P* values for between-group comparisons):<br>• baseline: 25.5 ± 3.0; 25.4 ± 2.9, *P* = NS<br>• 24 mo: 17.4 ± 3.7; 19.2 ± 3.8, *P* = NR<br><br>**Medicated IOP** (mm Hg), mean ± SD, Hydrus + Phaco and Phaco alone, respectively (*P* values for between-group comparisons):<br>• baseline: 17.9 ± 3.1; 18.1 ± 3.1, *P* = NS<br>• 24 mo: 16.8 ± 3.2; 17.4 ± 3.0, *P* = NR<br><br>**Reduction in modified DIOP from baseline** (mm Hg), mean ± SD, Hydrus + Phaco and Phaco alone, respectively (*P* values for between-group comparisons):<br>• 12 mo: –8.5; –6.3, between-group difference –2.2, *P* < 0.001<br>• 24 mo: –7.6 ± 4.1; –5.3 ± 4.2; between-group difference –2.3, 95% CI, –3.0 to –1.6 *P* < 0.001<br><br>**Proportion of eyes with washed-out modified DIOP reduction ≥ 20%,** %, Hydrus + Phaco and Phaco alone, respectively (*P* values for between-group comparisons):<br>• 12 mo: 85.9%; 70.0%; between-group difference 15.9%, 95% CI, 11.2% to 27.8% *P* < 0.001 | • The reduction in washed-out modified DIOP from baseline was significantly greater in the Hydrus Microstent + Phaco group vs. the Phaco alone group at 12 and 24 mo follow-up<br>• A significantly greater proportion of eyes in the Hydrus Microstent + Phaco group vs. the Phaco alone group had ≥ 20%, 30%, or 40% reductions in washed-out modified DIOP at 24 mo<br>• The reduction in | *"This 24-month multicenter randomized controlled trial demonstrated superior reduction in [modified DIOP] and medication use among subjects with mild-to-moderate POAG who received a [Hydrus Microstent] combined with phacoemulsification compared with phacoemulsification alone,"* p. 1.<br><br>The reduction in unmedicated modified DIOP in *Hydrus Microstent + Phaco* vs. *Phaco alone* was *"stastistically and clinically significant,"* p. 6.<br><br>*"There were no serious ocular* |

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| | • 24 mo: 77.3%; 57.8%; between-group difference 19.5%, *P* < 0.001<br><br>**Proportion of eyes with washed-out modified DIOP reduction ≥ 30%,** %, Hydrus + Phaco and Phaco alone, respectively (*P* value for between-group comparison):<br>• 24 mo: 53.4%; 32.1%, *P* < 0.0001<br><br>**Proportion of eyes with washed-out modified DIOP reduction ≥ 40%,** %, Hydrus + Phaco and Phaco alone, respectively (*P* value for between-group comparison):<br>• 24 mo: 24.7%; 8.0%, *P* < 0.0001<br><br>**Medications** (number), mean ± SD, Hydrus + Phaco and Phaco alone, respectively (*P* values for between-group comparisons):<br>• baseline: 1.7 ± 0.9; 1.7 ± 0.9, *P* = NS<br>• 24 mo: 0.3 ± 0.8; 0.7 ± 0.9, *P* = NR<br><br>**Reduction in medications from baseline** (number), mean (%), Hydrus + Phaco and Phaco alone, respectively (*P* values for between-group comparisons):<br>• 24 mo: 1.4 (82.4%); 1.0 (58.8%), between-group difference –0.4 medications, *P* < 0.001<br><br>**Safety**<br>**Intraoperative adverse events,** n (%), Hydrus + Phaco and Phaco alone, respectively:<br>• device malposition, 6 (1.6%); NA<br>  ○ device malposition within the iris root, 1 (0.3%); NA<br>• hyphema obscuring the surgeon's view (resolved in < 1 wk), 4 (1.1%), 0.0%<br><br>**Post-operative events,** n (%), Hydrus + Phaco and Phaco alone, respectively:<br>• surgical re-intervention in study eye, 2.4%, 4.8%<br>• uveitis/iritis requiring steroids, 5.6%, 3.7%<br>• conjunctivitis, 5.7%, 7.0%<br>• layered hyphema, > 2 mm after 1 day, 0.5%, 0.5%<br>• BCVA loss ≥ 2 lines ≥ 3 mo, 1.4%, 1.6%<br>• corneal abrasion, 1.1%, 0<br>• corneal edema, 1.4%, 0%<br>• elevated IOP ≥ 10 mm Hg over baseline, 0.5%, 2.7%<br>• device obstruction/focal PAS, nonobstructive, 14.9%, 2.1%<br>• device obstruction/focal PAS, obstructive, 3.8%, NA | number of medications from baseline to 24 mo follow-up was significantly greater in the Hydrus Microstent + Phaco group vs. the Phaco alone group<br>• There were relatively few intraoperative adverse events in the Hydrus Microstent + Phaco group (up to 1.6%) and none in the Phaco alone group (however those with complicated Phaco were excluded)<br>• Adverse events, and requirement for secondary surgery, were similar between groups up to 24 mo follow-up, but this was not tested statistically | *adverse events related to the [Hydrus] microstent, and no significant differences in safety parameters between the 2 groups,"* p. 1. |

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| | • cystoid macular edema, 2.2%, 2.1%<br>• epiretinal membrane, 1.6%, 1.6%<br>• subconjunctival hemorrhage, 2.4%, 0%<br>• worsening of VF mean deviation by 2.5 dB, 4.3%, 5.3%<br>• development of neovascular glaucoma and secondary angle closure, 0%, 0.5%<br><br>**Secondary IOP-lowering surgical interventions**, %, Hydrus + Phaco and Phaco alone, respectively:<br>• tube shunts/Trabeculectomy, 0%, 2.1%<br>• paracentesis, 0.3%, 1.0%<br>• laser membranectomy/synechialysis, 0.8%, 0%<br>• SLT/trabeculoplasty, 0%, 0.5%<br>• **Total:** 1.1%, 2.7% | | |
| Pfeiffer et al. 2015[71] | **Clinical effectiveness**<br>**Proportion of patients with ≥ 20% reduction in washed-out DIOP compared with baseline, n (%)** (*P* values for between-group comparisons):<br>• 12 mo: Hydrus + Phaco, NR (88%); Phaco, NR (74%); 95% CI, 16.3 to 51.7%; *P* = 0.1247<br>• 24 mo: Hydrus + Phaco, 40 (80%); Phaco, 23 (46%); 95% CI, 16.3 to 51.7%; *P* = 0.0008<br><br>**Washed-out DIOP**, mean ± SD, Hydrus + Phaco and Phaco, respectively (*P* values for between-group comparisons):<br>• baseline: 26.3 ± 4.4; 26.6 ± 4.2, *P* = 0.7147<br>• 12 mo: 16.6 ± 2.8; 17.4 ± 3.7<br>• 24 mo: 16.9 ± 3.3; 19.2 ± 4.7, *P* = 0.0093<br>  ○ washed-out DIOP was "*significantly lower than baseline*" (p. 1286) in both groups at both 12 and 24 months (*P* values NR)<br><br>**Medications** (number), mean ± SD, Hydrus + Phaco and Phaco, respectively (*P* values for between-group comparisons):<br>• baseline: 2.0 ± 1.0; 2.0 ± 1.1, *P* = 0.7619<br>• 24 mo: 0.5 ± 1.0; 1.0 ± 1.0, *P* = 0.0189<br>Note: Other values were reported only in figures (i.e., no data to report).<br><br>**Safety**<br>**Adverse events in year 1,** n (%),Hydrus + Phaco and Phaco, respectively:<br>• retinal detachment: 0 (0.0%); 1 (2.0%), *P* = 1.0000 | • DIOP was reduced from baseline in both groups, but was significantly lower in the Hydrus + Phaco group vs. the Phaco alone group at 24 mo follow-up<br>• The number of medications was significantly lower in the Hydrus + Phaco group vs. the Phaco alone group at 24 mo follow-up<br>• The proportion of patients with ≥ 20% reduction in washed-out DIOP compared with baseline was significantly greater in the Hydrus + Phaco group vs. the Phaco alone group at 24 mo follow-up<br>• Adverse events were | *"Intraocular pressure was clinically and statistically significantly lower at 2 years in the* [Hydrus + Phaco] *group compared with the* [Phaco] *alone group, with no differences in safety,"* p. 1283. |

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| | • post-operative wound dehiscence: 0 (0.0%); 1 (2.0%), *P* = 1.000<br>• anterior ischemic optic neuropathy: 0 (0.0%); 1 (2.0%), *P* = 1.000<br>• BCVA loss > 2 lines: 0 (0.0%); 3 (6.0%), *P* = 0.2424<br>• IOP spike (> 10 mm Hg more than baseline): 2 (4.0%); 2 (4.0%), *P* = 1.0000<br>• macular edema: 1 (2.0%); 2 (4.0%), *P* = 1.0000<br>• retinal detachment: 0 (0.0%); 1 (2.0%), *P* = 1.0000<br>• vitreal macular traction: 0 (0.0%); 1 (2.0%), *P* = 1.0000<br>• epiretinal membrane: 0 (0.0%); 2 (4.0%), *P* = 0.4949<br>• focal peripheral anterior synechiae: 6 (12.0%); 1 (2.0%), *P* = 0.1117<br>• optic disc hemorrhage: 1 (2.0%); 0 (0.0%), *P* = 1.000<br>• secondary glaucoma surgery: 0 (0.0%); 0 (0.0%), *P* = NA<br><br>**Adverse events in year 2,** n (%), Hydrus + Phaco and Phaco, respectively:<br>• retinal detachment: 0 (0.0%); 0 (0.0%), *P* = NA<br>• post-operative wound dehiscence: 0 (0.0%); 0 (0.0%), *P* = NA<br>• anterior ischemic optic neuropathy: 0 (0.0%); 0 (0.0%), *P* = NA<br>• BCVA loss > 2 lines: 0 (0.0%); 1 (2.0%), *P* = 1.000<br>• IOP spike (> 10 mm Hg more than baseline): 0 (0.0%); 0 (0.0%), *P* = NA<br>• macular edema: 0 (0.0%); 0 (0.0%), *P* = NA<br>• retinal detachment: 0 (0.0%); 0 (0.0%), *P* = NA<br>• vitreal macular traction: 1 (2.1%); 0 (0.0%), *P* = 0.4948<br>• epiretinal membrane: 0 (0.0%); 1 (2.0%), *P* = 1.0000<br>• focal peripheral anterior synechiae: 9 (18.8%); 1 (2.0%), *P* = 0.0077<br>• optic disc hemorrhage: 0 (0.0%); 0 (0.0%), *P* = NA<br>• secondary glaucoma surgery: 1 (2.1%); 2 (4.1%), *P* =1.0000 | similar between groups at 1 y and 2 y follow-up, except for focal peripheral anterior synechiae, which was significantly more prevalent in the Hydrus + Phaco group at 2 y | |
| **Other Comparisons (From Single Studies)** | | | |
| Vold et al. 2016[70] | **Clinical effectiveness**<br>**Unmedicated IOP** (mm Hg), mean ± SD, CyPass Micro-Stent + Phaco and Phaco alone, respectively (*P* values for between-group comparisons):<br>• baseline: 24.4 ± 2.8; 24.5 ± 3.0, *P* > 0.05<br>• 24 mo: 17.0 ± 3.4; 19.3 ± 3.3, *P* = NR<br><br>**Unmedicated IOP reduction from baseline** (mm Hg, %), mean ± SD, CyPass Micro-Stent + Phaco and Phaco alone, respectively (*P* values for comparisons between groups and within groups from baseline all *P* < 0.001):<br>• 12 mo: –7.9 ± 4.1 (32%); –6.2 ± 3.8 (26%) | • The reduction in IOP and number of medications from baseline was greater in the CyPass Micro-Stent + Phaco vs. Phaco alone group at 12 and 24 mo follow-up<br>• There were significantly fewer medications required in the CyPass | *"The [CyPass Micro-Stent] showed sustained 24-month efficacy benefit over phacoemulsification across several outcomes, including reducing both IOP and glaucoma medication use,"* p. 2108.<br><br>*"Supraciliary implantation of* |

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| | • 24 mo: –7.4 ± 4.4 (30%); –5.4 ± 3.9 (21%)<br><br>**Between-group difference in IOP** (mm Hg), mean (favouring CyPass Micro-Stent + Phaco):<br>• 12 mo, PP: 1.7, 95% CI, 0.9 to 2.5, *P* < 0.001<br>• 24 mo, PP: 2.0, 95% CI, 1.1 to 2.8, *P* < 0.001<br>• 24 mo, ITT: 1.8, 95% CI, 1.0 to 2.6, *P* < 0.001<br><br>**IOP reduction ≥ 20% from baseline** (proportion of eyes), CyPass Micro-Stent + Phaco and Phaco alone, respectively (*P* values for between-group comparisons; variability presented in a figure, therefore no values to report):<br>• 12 mo: 82%; 66%, *P* < 0.0001<br>• 24 mo, PP: 77%; 60%, *P* = 0.001<br>• 24 mo, ITT: 73%; 58%, *P* = 0.002<br><br>**Medications** (number), mean ± SD, CyPass Micro-Stent + Phaco and Phaco alone, respectively (*P* values for comparison with baseline unless otherwise stated):<br>• baseline, ITT: 1.4 ± 0.9; 1.3 ± 1.0 (between group *P* > 0.05)<br>• 12 mo, ITT: 0.2 ± 0.6 (*P* < 0.001); 0.7 ± 0.9 (*P* < 0.001)<br>• 24 mo, ITT: "maintained" (values NR); 0.6 ± 0.8 (*P* < 0.001; between-group comparison, *P* < 0.001)<br><br>Proportion of patients requiring **no medications** at 24 mo:<br>• CyPass Micro-Stent + Phaco, 84.8%; Phaco alone, 59.1%, *P* < 0.001<br>  ○ mean medication use at 24 mo was 67% lower in the CyPass Micro-Stent + Phaco group<br><br>**Safety**<br>**Adverse events** at any point intraoperatively or through 24 mo follow-up unless otherwise stated, n (%), CyPass Micro-Stent + Phaco; Phaco alone:<br>• BCVA loss ≥ 10 letters (≥ 2 lines) of ≤ 30-day duration: 33 (8.8%); 20 (15.3%), *P* = 0.0466<br>• BCVA loss ≥ 10 letters (≥ 2 lines) unresolved at 24 mo: 1.1%; 0.0%, *P* = NR<br>• corneal abrasion: 7 (1.9%); 2 (1.5%), *P* = 0.999<br>• corneal edema: 13 (3.5%); 2 (1.5%), *P* = 0.3741<br>• conjunctivitis: 4 (1.0%); 3 (2.3%), *P* = 0.3828<br>• cyclodialysis cleft ≥ 2-mm circumference: 7 (1.9%); 0 (0.0%), *P* = 0.1985<br>• hyphema, transient intraoperative: 10 (2.7%); 0 (0.0%), *P* = 0.0706<br>• iritis: 32 (8.6%); 5 (3.8%), *P* = 0.0809 | Micro-Stent + Phaco vs. Phaco alone group at 12 and 24 mo follow-up<br>• Adverse events were not different between groups | *the CyPass Micro-Stent during routine cataract surgery safely and sustainedly reduces IOP and glaucoma medication use in subjects with mild-to-moderate POAG and comorbid cataracts,"* p. 2110. |

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| | • hypotony (IOP < 6 mm Hg): 11 (2.9%); 0 (0%), *P* = 0.0744<br>• IOP ≥ 10 mm Hg over baseline: 16 (4.3%); 3 (2.3%), *P* = 0.4263<br>• maculopathy, cystoid edema: 6 (1.3%); 1 (0.8%), *P* = 0.6829<br>• tent obstruction: 8 (2.1%); NA, *P* = NA<br>• subconjunctival hemorrhage: 6 (1.6%); 1 (0.8%), *P* = 0.6829<br>• secondary ocular surgical intervention: 20 (5.5%); 7 (5.3%), *P* = 0.9999<br>• visual field loss progression, confirmed: 25 (6.7%); 13 (9.9%), *P* = 0.2488<br>• **Total:** CyPass Micro-Stent + Phaco, 39%; Phaco alone, 36%<br><br>Note: The CyPass Micro-Stent was voluntarily withdrawn from the global market by the manufacturer in August 2018 due to five-year data from this study that showed greater endothelial cell loss in the CyPass Micro-Stent group;[37,38] however, at the time of report publication, this device was still active in the MDALL and is therefore included in this report. | | |
| **MIGS + Cataract Surgery Vs. A Different MIGS + Cataract Surgery** | | | |
| **Goniotomy With Kahook Dual Blade + Phaco Vs. iStent + Phaco** | | | |
| Dorairaj et al. 2018[86] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, KDB + Phaco and iStent + Phaco, respectively, *P* values for comparisons between groups or with baseline NR:<br>• baseline: 17.9 ± 4.4; 16.7 ± 4.4<br>• 1 d: 15.4 ± 5.6; 16.0 ± 5.6<br>• 1 wk: 15.6 ± 5.5; 16.5 ± 5.5<br>• 1 mo: 14.0 ± 3.6; 14.9 ± 3.5<br>• 3 mo: 13.6 ± 2.7; 14.2 ± 2.6<br>• 6 mo: 13.6 ± 2.7; 13.9 ± 2.7<br><br>**IOP reduction from baseline** (mm Hg), mean (%), KDB + Phaco and iStent + Phaco, respectively (*P* values for comparison with baseline; all between-group comparisons *P* < 0.001):<br>• 1 d: –2.5 (–13.9%), *P* < 0.001; –0.7 (–4.3%), *P* = 0.495<br>• 1 wk: –2.3 (–12.7%), *P* < 0.001; –0.2 (–0.9%), *P* = 0.999<br>• 1 mo: –3.8 (–21.3%), *P* < 0.001; –1.8 (–10.6%), *P* < 0.001<br>• 3 mo: –4.3 (–24.0%), *P* < 0.001; –2.5 (–15.0%), *P* < 0.001<br>• 6 mo: –4.2 (–23.7%), *P* < 0.001; –2.7 (–16.4%), *P* < 0.001<br><br>**Proportion of eyes with IOP reduction ≥ 20%** (%),KDB + Phaco and iStent + Phaco, respectively (*P* values for between-group comparisons):<br>• 1 d: 40.9; 32.8, *P* = NS | • IOP was significantly reduced from baseline at 1, 3, and 6 mo in both groups; the reduction in IOP was significantly greater in the KDB + Phaco group vs. the iStent + Phaco group from 1 d through 6 mo follow-up<br>• A significantly greater proportion of eyes achieved an IOP reduction of ≥ 20% in the KDB + Phaco group vs. the iStent + Phaco group at 1 wk through 6 mo follow-up<br>• The number of medications was significantly lower, and | *"Goniotomy with the KDB combined with cataract surgery significantly lowers both IOP and the need for IOP-lowering medications compared to cataract extraction with iStent implantation in glaucomatous eyes through 6 months of postoperative follow-up,"* p. 791.<br><br>*"Adverse events were generally mild to moderate in intensity and resolved spontaneously,"* p. 794. |

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| | • 1 wk: 44.3; 24.2, *P* ≤ 0.011<br>• 1 mo: 53.6; 28.3, *P* ≤ 0.011<br>• 3 mo: 53.2; 26.8, *P* ≤ 0.011<br>• 6 mo: 56.1; 43.9, *P* ≤ 0.011<br><br>**Medications** (number), mean ± SD, KDB + Phaco and iStent + Phaco, respectively, *P* values for between-group differences:<br>• baseline: 1.7 ± 0.9; 1.9 ± 0.9, *P* > 0.05<br>• 1 d: 0.9 ± 1.0; 0.9 ± -1.0, *P* > 0.05<br>• 1 wk: 1.1 ± 1.0; 1.0 ± 1.0, *P* > 0.05<br>• 1 mo: 0.6 ± 1.0; 1.0 ± 1.0, *P* < 0.05<br>• 3 mo: 0.6 ± 0.9; 1.0 ± 0.8, *P* < 0.05<br>• 6 mo: 0.6 ± 1.0; 1.0 ± 1.0, *P* < 0.05<br><br>**Medication reduction from baseline** (number), mean (%), KDB + Phaco and iStent + Phaco, respectively (*P* values for comparison with baseline unless otherwise specified):<br>• 1 d: –0.8 (–47.1%), *P* < 0.001; –0.9 (–50.6%), *P* < 0.001; between-group comparison, *P* = 0.294<br>• 1 wk: –0.6 (–36.0%), *P* < 0.001; –0.9 (–47.0%), *P* < 0.001; between-group comparison, *P* = 0.078<br>• 1 mo: –1.1 (–64.6%), *P* < 0.001; –0.8 (–44.6%), *P* < 0.001; between-group comparison, *P* < 0.001<br>• 3 mo: –1.1 (–63.7%), *P* < 0.001; –0.9 (–48.8%), *P* < 0.001; between-group comparison, *P* = 0.001<br>• 6 mo: –1.1 (–62.9%), *P* < 0.001; –0.9 (–46.1%), *P* < 0.001; between-group comparison, *P* = 0.001<br><br>**BCVA** (logMAR), mean ± SD, value for both groups, *P* values for between-group differences:<br>• baseline: 0.4 ± 0.3<br>• 6 mo: 0.1 ± 0.2, comparison with baseline *P* < 0.001<br>  ○ "*No between-group differences in BCVA change were found (P = 0.999)"* p. 794<br><br>**Safety**<br>**Adverse events**, n (%), KDB + Phaco and iStent + Phaco, respectively, *P* values for between-group differences:<br>• corneal edema: 5 (2.1%); 3 (1.5%), *P* = 0.642 | the reduction in medications from baseline significantly greater, in the KDB + Phaco group vs. the iStent + Phaco group at 1, 3, and 6 mo follow-up<br>• BCVA improved significantly from baseline to 6 mo in both groups, and the change in BCVA was not significantly different between groups<br>• Adverse events were not different between groups, with the exception of IOP spikes, which had a significantly greater incidence in the iStent + Phaco group; all adverse events resolved spontaneously | |

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| | • inflammation: 1 (0.4%); 4 (2%); *P* = 0.116<br>• posterior capsule opacity: 1 (0.4%); 5 (2.5%), *P* = 0.060<br>• posterior vitreous detachment: 2 (0.8%); 2 (1%); *P* = 0.823<br>• rebound iritis: 2 (0.8%); 2 (1%), *P* = 0.823<br>• IOP spikes: 15 (6.3%); 25 (12.6%); *P* = 0.024<br><br>**Secondary surgical interventions:** NR | | |
| **Trabectome + Phaco Vs. 2x iStent + Phaco** | | | |
| Kurji et al. 2017[79] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, Trabectome + Phaco and 2x iStent + Phaco, respectively (*P* values for between-group comparisons):<br>• baseline: 20.92 ± 5.07; 17.47 ± 4.87, *P* = 0.026<br>• 6 mo: 16.0 ± 3.3; 13.6 ± 3.4, *P* = unclear (reported as *P* = 0.012 in the text but as *P* = NS in a figure)<br>• 12 mo: shown only in a figure (i.e., no data to report), *P* > 0.05<br><br>**IOP reduction from baseline** (mm Hg), mean ± SD (%) (*P* values for between-group comparisons):<br>• 6 mo: no difference between groups (reported as *P* = 0.430 in the text but as *P* < 0.05 in a figure); complete sample, –4.4 ± 4.8<br>• 12 mo: Trabectome + Phaco, –5.09 ± 5.73 (24%); 2x iStent + Phaco, –3.84 ± 3.80 (22%), *P* = 0.331; complete sample, –4.5 ± 4.9<br><br>**Medications** (number), mean ± SD (*P* values for between-group comparisons):<br>• baseline: Trabectome + Phaco, 2.25 ± 1.34; 2x iStent + Phaco, 2.15 ± 1.21, *P* = 0.21<br>• 6 mo: no difference between groups (*P* = 0.387); complete sample, 1.6 ± 1.3<br>• 12 mo: no difference between groups (*P* = 0.947); complete sample, 1.8 ± 1.4<br><br>**Medication reduction from baseline** (number), mean ± SD, Trabectome + Phaco and 2x iStent + Phaco, respectively (*P* values for between-group comparisons):<br>• 6 mo: –0.94 ± 1.24; –0.32 ± 0.59, *P* = 0.007<br>• 12 mo: –0.49 ± 1.17; –0.26 ± 0.73, *P* = 0.168<br><br>**BCVA change from baseline:**<br>• 12 mo: Trabectome + Phaco, gained ~1.5 Snellen lines; 2x iStent + Phaco, gained ~2 Snellen lines, between-group comparison *P* = 0.417 | • The reduction in IOP from baseline, and change in BCVA from baseline, were not different between groups at follow-up<br>• The reduction in number of medications was greater in the Trabectome + Phaco group vs. the 2x iStent + Phaco group at 6 mo but not 12 mo follow-up<br>• There were significantly more complications in the Trabectome + Phaco group vs. the 2x iStent + Phaco group | *"At 12 months of follow-up, both techniques significantly lowered IOP, but fewer complications were observed in the [2x iStent + Phaco] group,"* p. 99.<br><br>"*[W]e conclude that, although both procedures are most relatively comparable in terms of efficacy, [2x iStent + Phaco] might be the safer option of these two MIGS procedures,"* p. 105. |

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| | **Safety**<br>**Overall complications, number of eyes (%):**<br>• Trabectome + Phaco, reported as 32 (88.9%) in a table or 20 (55.6%) in the abstract; 2x iStent + Phaco, 5 (14.7%), *P* < 0.0001<br><br>**Post-operative complications:**<br>• Trabectome + Phaco: Uveitis, n = 1; IOP spike, n = 1; blood clot, n = 1<br>• 2x iStent + Phaco: IOP spike, n = 2<br><br>**Early complications:**<br>• Trabectome + Phaco: Uveitis, n = 9; hyphema, n = 5; IOP spike, n = 1; CME, n = 5; PAS, n = 5; AGSx, n = 1<br>• 2x iStent + Phaco: None<br>• **Total early complications:** Trabectome + Phaco, n = 22 (62.9%); 2x iStent + Phaco, n = 0 (0%), *P* < 0.0001<br><br>**Late complications:**<br>• Trabectome + Phaco: CME, n = 3; CRVO, n = 1; macular hole, n = 1; AGSx, n = 2<br>• 2x iStent + Phaco: Blocked iStent, n = 1<br>  ○ between-group comparison, *P* = 0.09 | | |
| Khan et al. 2015[78] | **Clinical effectiveness**<br>**IOP**[a] (mm Hg), mean ± SD, 2x iStent + Phaco and Trabectome + Phaco respectively (*P* values for between-group comparisons unless otherwise stated):<br>• baseline: 19.6 ± 5.2 (SD reported as 5.3 in the abstract and text but as 5.2 in a table); 20.6 ± 6.8, *P* = 0.37<br>• 1 d: 14.5 ± 7.8; 16.8 ± 6.6, *P* = 0.08<br>• 1 wk: 17.2 ± 8.8; 19.7 ± 7.7, *P* = 0.035<br>• 1 mo: 14.9 ± 5.8; 15.8 ± 3.6, *P* = 0.57<br>• 3 mo: 14.4 ± 4.0; 15.5 ± 3.6, *P* = 0.39<br>• 6 mo: 13.8 ± 2.9; 16.5 ± 4.9, *P* = 0.041<br>• 12 mo: 14.3 ± 3.1 (compared with baseline *P* < 0.001); 17.3 ± 6.5 (compared with baseline *P* < 0.001), *P* = 0.011<br><br>**Medications**[a] (number), median [IQR], 2x iStent + Phaco and Trabectome + Phaco, respectively (*P* values for between-group comparisons unless otherwise stated):<br>• baseline: 3.0 [2.0, 3.0]; 3.0 [2.0, 4.0], *P* = 0.53 | • IOP was reduced from baseline in both groups, but was significantly lower in the 2x iStent + Phaco group vs. the Trabectome + Phaco group at 6 and 12 mo<br>• The median number of medications was reduced from baseline in both groups, but was significantly lower in the 2x iStent + Phaco group vs. the Trabectome + Phaco group at 3, 6, and 12 mo<br>• The incidence of | "[2x iStent] *and* [Trabectome] *combined with phacoemulsification led to a significant reduction in IOP and medication use, with the* [2x iStent + Phaco] *group achieving higher success and a lower rate of hypotony,"* p. 1723. |

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| | • 1 d: 3.0 [2.0, 3.0]; 1.0 [0.0, 3.0], *P* < 0.001<br>• 1 wk: 2.0 [1.0, 3.0]; 3.0 [1.0, 3.0], *P* = 0.53<br>• 1 mo: 2.0 [1.0, 3.0]; 3.0 [2.0, 3.0], *P* = 0.05<br>• 3 mo: 2.0 [0.5, 3.0]; 3.0 [2.0, 4.0], *P* = 0.006<br>• 6 mo: 1.0 [0.0, 3.0]; 2.0 [2.0, 4.0], *P* = 0.012<br>• 12 mo: 1.0 [0.0, 2.0]; 2.0 [1.0, 3.0], *P* = 0.001; within-group comparisons with baseline both *P* < 0.001<br><br>**Medications** (number), mean ± SD, 2x iStent + Phaco and Trabectome + Phaco, respectively (*P* values NR):<br>• baseline: 2.86 ± 0.91; 2.90 ± 1.10<br>• 1 d: 2.47 ± 1.10; 1.30 ± 1.53<br>• 1 wk: 2.22 ± 1.18; 2.40 ± 1.30<br>• 1 mo: 2.14 ± 1.30; 2.68 ± 1.24<br>• 3 mo: 1.77 ± 1.23; 2.54 ± 1.22<br>• 6 mo: 1.63 ± 1.40; 2.42 ± 1.36<br>• 12 mo: 1.22 ± 1.28; 2.15 ± 1.35<br><br>**Safety**<br>**Adverse events**, n (%), 2x iStent + Phaco and Trabectome + Phaco, respectively:<br>• hyphema: 2 (4%); 12 (23%), *P* = 0.008<br>• peripheral anterior synechiae formation: 10 (20%); 8 (15%), *P* = 0.61<br>• early post-operative interventions: 4 (8%); 2 (4%), *P* = 0.43<br>• intraocular pressure spike: 8 (16%); 17 (33%), *P* = 0.07<br>• transitory hypotony: 2 (4%); 0 (0%), *P* = 0.24<br>• glaucoma reoperation: 0 (0%); 4 (8%), *P* = 0.12<br>◦ Trabeculectomy (n = 3, at 6 d, 3.5 mo, and 9 mo), Trabectome revision and first stage GDD (n = 1, at 11 mo)<br>• suprachoroidal hemorrhage: 0 (0%); 0 (0%), *P* = NA<br><br>Note: For patients with reoperation (n = 4 in Trabectome + Phaco group), the values for IOP and number of medications prior to reoperation were used for the rest of the follow-up period (i.e., last observation carried forward). | hyphema was lower in the 2x iStent + Phaco group vs. the Trabectome + Phaco group, but there were no other significant between-group differences in adverse events | |

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| **Trabectome + MICS Vs. iStent/iStent Inject + MICS** | | | |
| Gonnermann et al. 2017[77] | **Clinical effectiveness**<br>**IOP reduction from baseline** at 12 mo post-operative (*P* values for comparison with baseline):<br>• Trabectome + MICS: 30% (*P* < 0.001)<br>• 2x iStent inject + MICS: 34% (*P* < 0.001)<br>• no significant difference between groups at any time point (*P* > 0.05)<br>• numerical values not reported for other follow-up time points<br><br>**Number of glaucoma medications**, mean ± SD, Trabectome + MICS and 2x iStent inject + MICS, respectively (*P* values for comparison with baseline where applicable):<br>• baseline: 2.08 ± 1.12; 2.04 ± 0.89<br>• 12 mo: 1.44 ± 1.29 (*P* < 0.05); 1.28 ± 1.17 (*P* < 0.05)<br>• number of topical medications was significantly higher in Trabectome + MICS vs. 2x iStent inject + MICS at 6 wk post-operative due to post-operative treatment plan (*P* < 0.05), but there were no significant differences between groups at any other time point (all *P* > 0.05)<br><br>**BCVA** (logMar), mean ± SD, Trabectome + MICS and 2x iStent inject + MICS, respectively (*P* values for comparison with baseline where applicable):<br>• baseline: 0.38 ± 0.17; 0.32 ± 0.20<br>• 12 mo: 0.10 ± 0.12 (*P* < 0.001); 0.06 ± 0.09 (*P* < 0.001)<br>• no significant difference between groups at any time point (*P* > 0.05)<br><br>**Safety**<br>Severe **intraoperative** and **post-operative complications**: None<br><br>**Minor events**:<br>• reflux bleeding occurred in 100% of patients and resolved spontaneously<br>• Trabeculectomy had to be performed in 2/27 eyes in each group due to insufficient IOP lowering after MIGS | • Reduction in IOP and number of medications, improvement in BCVA, and safety, were similar between the Trabectome + MICS and 2x iStent Inject + MICS groups | "*Ab interno trabeculectomy [with Trabectome] and iStent® inject were both effective in lowering IOP with a favourable and comparable safety profile in an intraindividual comparative study over a 12-months follow-up in OAG. However, longer follow-up of these patients will be necessary to determine long-term outcomes and to evaluate significant differences,*" p. 359. |
| **Different Numbers of iStents + Phaco** | | | |
| Vlasov and Kim 2017[80] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, iStent + Phaco and 2x iStent + Phaco, respectively (*P* values for comparison with baseline unless otherwise stated):<br>• baseline, different values reported in two separate tables:<br>  ○ study Table 1: 16.67 ± 4.1; 18.33 ± 3.99, between-group *P* = 0.0870<br>  ○ study Table 2:16.67 ± 3.82; 18.33 ± 3.99, between-group *P* = 0.4996 | • IOP was significantly reduced from baseline at 1, 3, 6, and 12 mo follow-up, but IOP was not different between groups at any time point | *"Both [iStent + Phaco* and *2x iStents + Phaco] demonstrated a significant reduction in IOP at 12 months. […] Only [2x iStent + Phaco] demonstrated a statistically significant reduction* |

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| | • 1 d: 20.17 ± 7.44 (*P* = 0.0128); 19.5 ± 8.22 (*P* = 0.4944), between-group *P* = 0.7348<br>• 1 wk: 16.78 ± 5.23 (*P* = 0.917); 15.83 ± 4.91 (*P* = 0.0376), between-group *P* = 0.4673<br>• 1 mo: 14.76 ± 3.77 (*P* = 0.0389); 13.85 ± 3.21 (*P* = 0.0001), between-group *P* = 0.3320<br>• 3 mo: 14.74 ± 4.77 (*P* = 0.0755); 14.17 ± 2.81 (*P* = 0.0001), between-group *P* = 0.6190<br>• 6 mo: 14.44 ± 4.27 (*P* = 0.0233); 14.71 ± 2.11 (*P* = 0.0014), between-group *P* = 0.8107<br>• 12 mo, different values for SDs reported in two separate tables:<br>  ○ study Table 1: 14.45 ± 3.8 (*P* = 0.0251); 14.31 ± 1.72 (*P* = 0.0014), between-group *P* = 0.9051<br>  ○ study Table 2: 14.45 ± 3.96 (*P* = 0.0251); 14.31 ± 1.80 (*P* = 0.0014), between-group *P* = 0.9051<br><br>**IOP reduction from baseline** (%) at 12 mo post-operative, iStent + Phaco and 2x iStent + Phaco, respectively (P values for between-group comparison):<br>• 13.3%; 21.9%; *P* = 0.9051<br><br>**Medications** (number), mean ± SD, iStent + Phaco and 2x iStent + Phaco, respectively (*P* values for comparison with baseline unless otherwise stated):<br>• baseline: 2.33 ± 1.40; 2.37 ± 1.30, between-group *P* = 0.9205<br>• 1 d: 0.91 ± 1.44 (*P* = 0.0001); 1.2 ± 1.42 (*P* = 0.004), between-group *P* = 0.4298<br>• 1 wk: 1.29 ± 1.34 (*P* = 0.002); 0.93 ± 1.21 (*P* = 0.0001), between-group *P* = 0.2725<br>• 1 mo: 1.74 ± 2.58 (*P* = 0.2237); 1.12 ± 1.15 (*P* = 0.0005), between-group *P* = 0.2595<br>• 3 mo: 1.59 ± 2.48 (*P* = 0.1324); 1.3 ± 1.37 (*P* = 0.0067), between-group *P* = 0.6289<br>• 6 mo: 1.91 ± 2.35 (*P* = 0.3528); 1.71 ± 1.22 (*P* = 0.1020), between-group *P* = 0.7453<br>• 12 mo: 1.74 ± 2.47 (*P* = 0.2259); 1.15 ± 1.09 (*P* = 0.0066), between-group *P* = 0.4305<br><br>**Safety**<br>**Intraoperative complications:** None<br><br>**Complications**, iStent + Phaco group, n:<br>• CME, 4<br>• increased IOP because of a steroid response, 2<br>• central retinal vein occlusion leading to development of anterior-chamber angle neovascularization and neovascular glaucoma, 1<br><br>**Complications**, 2x iStent + Phaco group: None | • At 12 mo, the number of medications was reduced from baseline only in the 2x iStent + Phaco group, and the number of medications was not significantly different between groups at any time point<br>• There were no intraoperative complications in either group<br>• There tended to be more post-operative complications in the iStent + Phaco group, but this was not tested statistically | *in medication burden,"* p. 222.<br><br>*"No serious, vision-threatening complications were seen in our study that was directly attributable to the iStent,"* p. 225. |

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| Belovay et al. 2012[83] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD where reported, 2x iStent + Phaco and 3x iStent + Phaco, respectively (*P* values for between-group comparisons unless otherwise stated):<br>• baseline: 17.3 ± 4.0; 18.6 ± 4.0, *P* = 0.24<br>• 1 mo: 13.4; 15.1, *P* = NS<br>• 3 mo: 13.3; 14.5, *P* = NS<br>• 6 mo: 13.5; 14.6, *P* = NS<br>• 9 mo: data not reported<br>• 12 mo: 13.8 (comparison with baseline, *P* < 0.001); 14.8 (comparison with baseline, *P* < 0.001), *P* = 0.78<br><br>**Reduction in IOP from baseline at 12 mo** (mm Hg), mean ± SD where reported, 2x iStent + Phaco and 3x iStent + Phaco, respectively:<br>• –3.5; –3.9 ± 13.1, between-group comparison *P* = 0.76<br><br>**Proportion of patients with IOP ≤15 mm Hg at 12 mo,** n (%), 2x iStent + Phaco and 3x iStent + Phaco, respectively:<br>• 21 (75%)*;* NR, between-group comparison *P* = NR<br>**Medications** (n), mean ± SD, 2x iStent + Phaco and 3x iStent + Phaco, respectively, (*P* values for between-group comparisons unless otherwise stated):<br>• baseline: 2.8 ± 0.8; 2.6 ± 1.2, *P* = 0.70<br>• 1 mo: 1.7; 1.0, *P* = NS<br>• 3 mo: 1.2; 0.8, *P* = NS<br>• 6 mo: 1.2; 0.4, *P* = 0.009<br>• 12 mo: 1.0 (comparison with baseline, P < 0.001); 0.4 (comparison with baseline, P < 0.001), *P* = 0.04<br><br>**No medications**, n (%), 2x iStent + Phaco and 3x iStent + Phaco, respectively:<br>• 12 mo: 13 (46%); 18 (72%), *P* = NR<br><br>**CDVA at 12 mo,** n (%), 2x iStent + Phaco and 3x iStent + Phaco, respectively, *P* values not reported:<br>• 20/40 or better: 18 (64%); 19 (76%)<br>• 20/50–20/100: 6 (21%); 5 (20%)<br>• 20/200 or worse: 3 (11%); 1 (4%) | • IOP was significantly reduced from baseline at 12 mo follow-up in both groups, but was not significantly different between groups at any time point<br>• The number of medications was significantly reduced from baseline at 12 mo in both groups (comparison with baseline NR at other time points), and was significantly lower in the 3x iStent + Phaco group vs. the 2x iStent + Phaco group at 6 and 12 mo follow-up<br>• CDVA was similar between groups at 12 months but this was not tested statistically<br>• Complications were not reported separately for each group | *"The implantation of 2 or 3 trabecular micro-bypass stents combined with cataract surgery was performed safely with a reduction in IOP and topical ocular hypotensive medications,"* p. 1916.<br><br>*"Implantation of multiple trabecular micro-bypass stents has the potential to further reduce IOP and topical ocular hypotensive medications versus implantation of 1 trabecular micro-bypass stent,"* p. 1916. |

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| | **Safety**<br>**Overall complications**, n, *P* values NR:<br>• blockage of the opening of the stent lumen, 8 eyes<br>  ○ these patients were treated with neodymium: YAG laser or argon laser (i.e., secondary interventions)<br>• small hyphema, 1 eye<br>• iStent not seated well, 1 eye<br>• steroid response resulting in elevated IOP, 2 eyes<br>• death due to unrelated systemic illness, 1 patient | | |
| **ECP + iStent + Phaco Vs. iStent + Phaco** | | | |
| Ferguson et al. 2017[81] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD where reported, ECP + iStent + Phaco and iStent + Phaco, respectively (*P* values for comparison with baseline, where reported):<br>• baseline: 21.49 ± 9.59; 20.66 ± 3.23<br>• 1 d: 15.78; 21.56<br>• 1 wk: 15.75; 18.46<br>• 1 mo: 15.31; 16.42<br>• 3 mo: 15.21; 16.36<br>• 6 mo: reported as 14.34 in a figure and 14.45 in the text (from the figure, 14.34 looks to be the correct value; $P < 0.01$); 16.00<br>• 12 mo: 14.35 ± 3.5 ($P < 0.01$); 16.18 ± 4.14 ($P < 0.01$)<br><br>**Reduction in IOP** from baseline:<br>• The IOP reduction was greater in ECP + iStent + Phaco (7.14 mm Hg) vs. iStent + Phaco (4.48 mm Hg) at 12 mo ($P < 0.01$); *P* values not reported for other time points<br>• Mean reduction in IOP (mm Hg) from baseline to 12 mo post-operative follow-up, stratified by preoperative IOP, ECP + iStent + Phaco and iStent + Phaco, respectively (*P* values NR):<br>  ○ ≤ 16 mm Hg: 2.40; no eyes<br>  ○ 17-19 mm Hg: 4.23; 2.48<br>  ○ 20-22 mm Hg: 5.91; 3.82<br>  ○ ≥ 23 mm Hg: 12.89; 9.45<br><br>**Number of medications**, mean ± SD where reported, ECP + iStent + Phaco and iStent + Phaco, respectively (*P* values for comparison with baseline, where reported):<br>• baseline: 1.78 ± 0.99; 1.68 ± 0.84<br>• 1 d: 1.71; 0.70 | • IOP reductions were greater, but medication use was also higher, in the ECP + iStent + Phaco group vs. the iStent + Phaco group<br>• When stratified by preoperative IOP, mean IOP reductions tended to be greater in those with higher initial IOP (not tested statistically)<br>• Safety was similar across treatment groups | *"...although the IOP reduction was more significant in the study group [ECP + iStent + Phaco], the medication use was higher in this group postoperatively at 12 months, which might account for the lower IOP,"* p. 381.<br><br>"*Patients who had implantation of the microbypass stent [iStent] in combination with cataract surgery and ECP had significantly better IOP reduction than those who did not have ECP. The combination procedure was also effective in patients with severe OAG,"* p. 377. |

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| | • 1 wk: 1.92; 1.02<br>• 1 mo: 1.55; 0.74<br>• 3 mo: 1.62; 0.61<br>• 6 mo: 1.38 (*P* < 0.01); 0.78<br>• 12 mo: 1.10 ± 1.00 (*P* < 0.01); 0.62 (*P* < 0.01); between-group comparison *P* < 0.01<br><br>**Reduction in number of medications** from baseline:<br>• The reduction in number of medications was greater (63% vs. 38%), and the number of medications was significantly lower in iStent + Phaco vs. ECP + iStent + Phaco at 12 mo (*P* < 0.01)<br>• At 12 mo, 17 patients (35.4%) in ECP + iStent + Phaco were taking 0 medications<br><br>**Safety**<br>**IOP** increase of ≥15 mm Hg:<br>• ECP + iStent + Phaco*:* n = 4 eyes (8%); iStent + Phaco*: "results were similar"* p. 379 (values not reported)<br>**Need for secondary surgery** (n), ECP + iStent + Phaco and iStent + Phaco, respectively:<br>• 2 eyes; 2 eyes<br><br>**Significant post-operative complications:** None | | |
| **ECP + Phaco Vs. Trabectome + Phaco** | | | |
| Moghimi et al. 2018[89] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, ECP + Phaco and Trabectome + Phaco, respectively (*P* values for between-group comparisons):<br>• baseline: 20.6 ± 5.4; 18.7 ± 4.7, *P* = 0.30<br>• 1 d: 21.5 ± 9.6; 13.6 ± 4.7, *P* = 0.003<br>• 1 wk: 15.3 ± 5.1; 15.5 ± 6.3, *P* = 0.99<br>• 1 mo: 18.0 ± 5.8; 15.3 ± 3.5, *P* = 0.15<br>• 3 mo: 16.5 ± 5.2; 14.1 ± 3.3, *P* = 0.18<br>• 6 mo: 16.0 ± 5.3; 13.9 ± 2.9, *P* = 0.17<br>• 12 mo: 16.7 ± 4.3; 15.4 ± 4.4, *P* = 0.45<br><br>**Medications** (number), mean ± SD, ECP + Phaco and Trabectome + Phaco, respectively (*P* values for between-group comparisons):<br>• baseline: 2.0 ± 1.0; 1.3 ± 1.2, *P* = 0.06 | • IOP was numerically reduced from baseline up to 12 mo follow-up in both groups, but this was not tested statistically<br>• IOP was transiently greater in ECP + Phaco versus Trabectome + Phaco at 1 day post-operative, but there were no significant differences between groups at any other time point<br>• The number of medications was not | *"All procedures significantly lowered IOP. [Trabectome + Phaco] resulted in fewest complications,"* p. 557. |

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| | • 1 wk: 0.3 ± 0.7; 0.0 ± 0.0, *P* = 0.05<br>• 1 mo: 0.5 ± 0.9; 0.2 ± 0.6, *P* = 0.30<br>• 3 mo: 0.8 ± 1.0; 0.3 ± 0.7, *P* = 0.09<br>• 6 mo: 0.8 ± 1.1; 0.3 ± 0.5, *P* = 0.05<br>• 12 mo: 1.2 ± 1.1; 0.7 ± 0.9, *P* = 0.12<br><br>**Visual field** (dB), mean ± SD, ECP + Phaco and Trabectome + Phaco, respectively (*P* values NR):<br>• baseline: –9.1 ± 5.7; –8.0 ± 4.3<br>• 12 mo: –8.0 ± 6.1; –6.5 ± 4.2<br>  ○ *"After 1 year, there were no significant differences in the mean change in any group"* p. 560<br><br>**Safety**<br>**Complications**, n (%), ECP + Phaco and Trabectome + Phaco, respectively:<br>• fibrin reaction: 7 (20%); 0 (0%)<br>• hyphema: 3 (9%); 6 (23%)<br>• layered hyphema: 1 (3%); 1 (4%)<br>• IOP spike (≥ 10 mm Hg increase from baseline): 7 (20%); 1 (4%)<br>• no severe complications *"such as a shallow anterior chamber, bleb leak, choroidal detachment, hypotony, or infection"*<br>  ○ *P* values were only reported for comparisons across three groups (the third group did not meet eligibility criteria for inclusion in the present report)<br><br>**Requirement for secondary glaucoma surgery:** None | significantly different between groups at baseline or any follow-up time point<br>• The mean change in VF from baseline to 12 mo follow-up was not significantly different between groups<br>• The number of complications was not compared statistically between groups<br>• No patients (in either group) required secondary surgery | |
| **MIGS + Cataract Surgery Vs. Filtration Surgery + Cataract Surgery** | | | |
| Ting et al. 2018[87] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, Trabectome + Phaco and Trabeculectomy + Phaco, respectively (*P* values for between-group comparisons):<br>• baseline: 20.0 ± 5.3; 23.1 ± 6.4, *P* = 0.22<br>• 6 mo: 17.5 ± 3.8; 16.0 ± 6.0, *P* = 0.54<br>• 12 mo: 16.8 ± 2.7; 17.1 ± 5.0, *P* = 0.57<br><br>**Reduction in IOP from baseline** (mm Hg), mean ± SD, Trabectome + Phaco and Trabeculectomy + Phaco, respectively (*P* values for between-group comparisons):<br>• 6 mo: –2.8 ± 3.2; –7.4 ± 9.7, *P* = 0.54 | • IOP, reduction in IOP from baseline, and number of medications were not significantly different between groups at any time point, but the study was likely underpowered<br>• There were no significant between-group | *"[Trabectome + Phaco] achieved similar IOP lowering at 6 and 12 months compared with [Trabeculectomy + Phaco] with a similar number of glaucoma medications required at 1 year and no serious complications identified in the [Trabectome + Phaco] group. Our results with [Trabectome + |

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| | • 12 mo: –2.7 ± 5.3; –6.4 ± 8.7, *P* = 0.35<br><br>**Medications** (number), mean ± SD, Trabectome + Phaco and Trabeculectomy + Phaco, respectively (*P* values for between-group comparisons):<br>• baseline: 1.80 ± 1.31; 1.40 ± 1.13, *P* = 0.59<br>• 6 mo: 0.78 ± 1.39; 0.38 ± 0.74, *P* = 0.68<br>• 12 mo: 0.44 ± 0.88; 0.75 ± 0.89, *P* = 0.41<br><br>**Safety**<br>**Early post-operative complications** (≤ 30 days post-operative), n %, Trabectome + Phaco and Trabeculectomy + Phaco, respectively, between-group comparison *P* = 0.60:<br>• **Mild:**<br>○ PAS: 5 (50%); 1 (11%)<br>• **Moderate:**<br>○ day 1 IOP spike: 5 (50%); 3 (33%)<br>○ hyphema: 4 (40%); 0 (0%)<br>○ hypotony: 1 (10%); 3 (33%)<br>○ bleb leak: NA; 2 (22%)<br>○ steroid response: 1 (10%); 0 (0%)<br>• **Severe:**<br>○ hypotony maculopathy: 0 (0%); 2 (22%)<br>○ choroidal effusion: 0 (0%); 2 (22%)<br><br>**Late post-operative complications** (> 30 days post-operative), n %, Trabectome + Phaco and Trabeculectomy + Phaco, respectively, between-group comparison *P* = 0.41:<br>• **Mild:**<br>○ PAS: 5 (50%); 2 (22%)<br>• **Moderate:**<br>○ chronic/recurrent uveitis: 2 (22%); 2 (22%)<br>○ encapsulated bleb: NA; 1 (11%)<br>• **Severe:**<br>○ hypotony maculopathy: 0 (0%); 0 (0%)<br>○ choroidal effusion: 0 (0%); 0 (0%)<br><br>**Secondary glaucoma surgery,** n %, Trabectome + Phaco and Trabeculectomy + Phaco, respectively: 1 (10%); 0 (0%); *P* = 0.36 | differences in early or late post-operative complications, or need for secondary glaucoma surgery, but the study was likely underpowered | *Phaco] are consistent with existing literature, supporting its favourable safety profile for patients with comorbid cataracts, mild to moderate glaucoma, and either a target IOP reduction to the mid- to high teens or decreased reliance on topical glaucoma medications. However, for patients with more advanced glaucoma requiring IOP reduction into the low to mid-teens, we suggest [Trabeculectomy + Phaco] should be considered, keeping in mind the increased risk of severe complications,"* p. 6.<br><br>*"Mild and moderate complications were seen in both treatment groups, but severe complications were seen only in the [Trabeculectomy + Phaco group]. One secondary glaucoma procedure was required in the [Trabectome + Phaco] group,"* p. 1. |

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| Kinoshita-Nakano et al. 2018[85] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, Trabectome + Phaco and Trabeculotomy + Phaco, respectively (*P* values for between-group comparisons):<br>• baseline: 21.0 ± 5.7; 23.0 ± 7.0, *P* = 0.33<br>• 3 mo: 14.5 ± 3.3; 14.3 ± 2.5, *P* = 0.97<br>• 6 mo: 15.1 ± 3.6; 15.0 ± 2.7, *P* = 0.77<br>• 12 mo: 15.6 ± 3.5; 15.3 ± 3.2, *P* = 0.53<br>• 18 mo: 15.4 ± 3.3; 14.9 ± 2.9, *P* = 0.58<br>• 24 mo: 14.9 ± 2.8; 15.0 ± 3.4, *P* = 0.70<br>• 36 mo: 14.6 ± 2.5; 14.6 ± 3.2, *P* = 0.48<br><br>**Reduction in IOP from baseline** (%), mean ± SD, Trabectome + Phaco and Trabeculotomy + Phaco, respectively (*P* values for between-group comparisons):<br>• 3 mo: 27.7 ± 20.1; 34.3 ± 15.4, *P* = 0.15<br>• 6 mo: 25.9 ± 20.2; 32.0 ± 13.9, *P* = 0.19<br>• 12 mo: 21.8 ± 20.7; 30.3 ± 16.5, *P* = 0.050<br>• 18 mo: 20.5 ± 19.5; 33.0 ± 23.4, *P* = 0.042<br>• 24 mo: 22.0 ± 18.0; 33.4 ± 14.8, *P* = 0.025<br>• 36 mo: 26.5 ± 25.0; 33.9 ± 14.0, *P* = 0.074<br><br>**Medications** (number), mean ± SD, Trabectome + Phaco and Trabeculotomy + Phaco, respectively (*P* values for between-group comparisons):<br>• baseline: 3.2 ± 0.9; 3.2 ± 0.8, *P* = 0.49<br>• 3 mo: 2.3 ± 1.3; 0.9 ± 0.6, *P* < 0.0001<br>• 6 mo: 2.1 ± 1.3; 1.3 ± 0.8, *P* = 0.004<br>• 12 mo: 2.2 ± 1.5; 1.6 ± 1.2, *P* = 0.027<br>• 18 mo: 2.6 ± 1.4; 2.3 ± 1.4, *P* = 0.055<br>• 24 mo: 2.7 ± 1.2; 2.5 ± 1.4, *P* = 0.078<br>• 36 mo: 2.7 ± 1.4; 2.5 ± 1.4, *P* = 0.67<br><br>**Safety**<br>None reported exclusively for the subgroup of interest | • IOP was not different between groups at baseline or any follow-up time point<br>• The % reduction in IOP from baseline was significantly greater in the Trabeculotomy + Phaco group vs. the Trabectome + Phaco group at 18 and 24 mo only<br>• The number of medications was significantly lower in the Trabeculotomy + Phaco group vs. the Trabectome + Phaco group at 3, 6, and 12 mo follow-up but was not different between groups at 18, 24, or 36 mo | *"IOP reduction targets and expected success rates may not be very different between the two surgical procedures,"* p. 7. |
| Marco et al. 2017[82] | **Clinical effectiveness**<br>**IOP** (mm Hg), mean ± SD, ECP + Phaco and Trab + Phaco, respectively (*P* values for between-group comparisons):<br>• baseline: 19.9 ± 10.2; 19.2 ± 7.2, *P* = 0.589 | • IOP was not different between groups at baseline or 6 mo follow-up; IOP was transiently | *"Overall, while [ECP + Phaco] produced similar improvements in IOP and visual acuity as [Trab + Phaco] at 6 months,* |

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| | • 1 d: 22.1 ± 7.8; 16.0 ± 12.3, *P* = 0.008<br>• 6 mo: 14.2 ± 3.6; 13.0 ± 2.5, *P* = 0.240<br><br>**Reduction in IOP from baseline** (mm Hg), mean ± SD:<br>• 6 mo: ECP + Phaco, –5.7 ± 10.8; Trab + Phaco, –6.2 ± 7.4, *P* = 0.376<br><br>**Reduction in IOP from baseline** (%), mean ± SD:<br>• 6 mo: ECP + Phaco, 28.8 ± 34.0; Trab + Phaco, 31.4 ± 25.5, *P* = 0.428<br><br>**Medications** (number), mean ± SD, ECP + Phaco and Trab + Phaco, respectively (*P* values for between-group comparisons):<br>• baseline: 2.5 ± 1.2; 2.7 ± 1.2, *P* = 0.667<br>• 6 mo: 1.39 ± 1.09; 0.48 ± 0.92, *P* = 0.0064<br>• number of medications was significantly greater in ECP + Phaco vs. Trab + Phaco from week 1 to 6 mo (*P* < 0.005; data shown only in a figure, therefore no values to report)<br><br>**Reduction in medications from baseline** (number), mean ± SD:<br>• 6 mo: ECP + Phaco, 1.17 ± 1.13; Trab + Phaco, 2.10 ± 1.47, *P* = 0.023<br><br>**Change in VA from baseline** (logMAR), mean ± SD, ECP + Phaco and Trab + Phaco, respectively:<br>• 1 wk: NR; "*significantly reduced*" (p. 180; *P* = 0.03 compared with baseline)<br>• 6 mo: 0.24 ± 0.50 (from approximately 20/90 to 20/50); 0.33 ± 0.48 (from approximately 20/80 to 20/35), between-group comparison *P* = 0.388<br><br>**Safety**<br>IOP spike, number (%):<br>• 1 d: ECP + Phaco, 12 (50.0%); Trab + Phaco, 6 (20.7%), *P* = 0.040<br><br>**Intraoperative complications:**<br>ECP + Phaco:<br>• posterior capsular rupture with vitreous loss requiring anterior vitrectomy (n = 2), hyphema preventing application of further laser (n = 1)<br>Trab + Phaco:<br>• none | greater post-operative (at 1 d) in the ECP + Phaco group vs. the Trab + Phaco group, possibly due to retained viscoelastic (part of the ECP procedure)<br>• The reduction in medication use from baseline was greater in the Trab + Phaco group vs. the ECP + Phaco group<br>• VA was significantly improved at 6 mo in both groups<br>• There tended to be more intraoperative complications in ECP + Phaco group vs. the Trab + Phaco group, and more early and late post-operative complications in the Trab + Phaco group, but these differences were not tested statistically | *[ECP + Phaco] was associated with fewer cases of complete success, with many patients requiring additional medications. In addition, patients in the [ECP + Phaco] group experienced higher immediate IOP spikes and anterior chamber inflammatory reactions. In comparison, [Trab + Phaco] patients experienced higher levels of complete success, without the need of postoperative medications,"* p. 182. |

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| | **Early (< 30 d) post-operative complications:**<br>ECP + Phaco:<br>• none<br>Trab + Phaco:<br>• hypotony (n = 5), serous choroidal effusion (n = 1), bleb leak (n = 1), laser suture lysis (n = 13), bandage contact lens (n = 3)<br><br>**Late (> 30 d) post-operative complications:**<br>ECP + Phaco:<br>• none<br>Trab + Phaco:<br>• needling of bleb (n = 2) | | |

1x = one device; 2x = two devices; 3x = three devices; AGI = Ahmed glaucoma implant; AGSx = additional glaucoma surgery; BCVA = best-corrected visual acuity; CDVA = corrected-distance visual acuity; CI = confidence interval; CME = cystoid macular edema; d = days; dB = decibel; DIOP = diurnal intraocular pressure; ECP = endoscopic cyclophotocoagulation; GDD = glaucoma drainage device; GDD-2 = second Baerveldt glaucoma implant 250 or 350; Hydrus = Hydrus Microstent; HR = hazard ratio; IOP = intraocular pressure; IQR = inter-quartile range; ITT = intention-to-treat; LASIK = laser in situ keratomileusis; logMAR = logarithm of the minimum angle of resolution; LP = light perception; LPI = laser peripheral iridotomy; MDALL = Medical Devices Active Licence Listing; MICS = micro-incision cataract surgery; MIGS = minimally invasive glaucoma surgery; MMC = mitomycin C; mo = month; NR = not reported; NS = non-significant; PAS = peripheral anterior synechiae; Phaco = phacoemulsification; PSD = pattern standard deviation; PP = per-protocol; QoL = quality of life; SLT = selective laser trabeculoplasty; Trab + Phaco = Trabeculectomy with mitomycin C + Phacoemulsification; VA = visual acuity; VF = visual field; vs. = versus; wk = week; y = year; YAG = yttrium-aluminum-garnet.