Table 34: Effect of MIGS Versus Comparators on Number of Medications in Adults With Glaucoma

Quality Assessment							Summary of Findings				Importance
							No. of Eyes		Effect	Quality	
No. of Studies	Study Design	Risk of Bias	Inconsistency	Indirectness	Imprecision	Other Considerations	MIGS	Comparator			
MIGS Vs. Laser Therapy: Hydrus Microstent Vs. SLT											
1	Prospective cohort[a]	Serious risk of bias[b]	No serious inconsistency	No serious indirectness	Serious imprecision[c]	None	56	31	**MIGS > Laser Therapy:** The reduction in **number of medications** from baseline at 12 mo follow-up was significantly greater in the Hydrus Microstent vs. SLT (reduction of ~1.4 vs. 0.5 medications, to an average of ~0.9 vs. 2.0 medications, respectively), but absolute number of medications was not compared statistically.[62]	⊕OOO VERY LOW	CRITICAL
MIGS Vs. Another MIGS: 1x Vs. 2x Vs. 3x iStent											
1	RCT[d]	Very serious risk of bias[e]	No serious inconsistency	No serious indirectness	Serious imprecision[f]	None	iStent, 38 2x iStent, 41 3x iStent, 40	NA	**3 iStents [?] 2 iStents [?] 1 iStent:** The proportion of eyes requiring medications was numerically reduced from baseline in all groups, but within- and between-group differences were not tested statistically.[59,60]	⊕OOO VERY LOW	CRITICAL
MIGS Vs. Filtration Surgery: ECP Vs. Glaucoma Drainage Device											
2	Retrospective cohort and non-randomized controlled clinical trial[g]	Serious risk of bias[h]	No serious inconsistency	No serious indirectness	No serious imprecision	None	59	BGI, 48 AGI, 34	**MIGS = Glaucoma Drainage Device:** Retrospective cohort study: The mean **number of medications** was significantly reduced from baseline in both ECP and BGI groups at 3 to 24 mo follow-up (reduction of ~1 to 1.5 medications), but was not different between groups at any time point.[63] Non-randomized controlled	⊕OOO VERY LOW	CRITICAL

Quality Assessment							Summary of Findings				Importance
							No. of Eyes		Effect	Quality	
No. of Studies	Study Design	Risk of Bias	Inconsistency	Indirectness	Imprecision	Other Considerations	MIGS	Comparator			
									clinical trial: The **number of medications** was numerically reduced from baseline in both ECP and AGI groups but this was not tested statistically; the mean **number of medications** was not significantly different between groups at baseline or 24 mo follow-up (~2 vs. 2.5 medications, respectively).[61]		
MIGS Vs. Filtration Surgery: Trabectome Vs. Trabeculectomy With MMC											
2	Prospective cohort and retrospective cohort[i]	Serious risk of bias[j]	No serious inconsistency	No serious indirectness	Serious imprecision[k]	None	158	127	**Trabectome < Trabeculectomy With MMC:** Prospective cohort study: The **number of medications** was not reduced from baseline in the Trabectome group at any time point, but was significantly reduced from baseline in the Trabeculectomy group at 1 d to 6 mo follow-up (~2.34 vs. 0.5 medications at 6 mo for Trabectome and Trabeculectomy groups, respectively; between-group comparisons not tested statistically).[25] Retrospective cohort study: The **number of medications** was numerically reduced from baseline in both groups (not tested statistically), but was significantly greater in the Trabectome vs. Trabeculectomy group at all follow-up time points (1 to 30 mo; at 30 mo ~ 2.3 and 0.4 medications, respectively).[64]	⊕OOO VERY LOW	CRITICAL

Quality Assessment							Summary of Findings				Importance
							No. of Eyes		Effect	Quality	
No. of Studies	Study Design	Risk of Bias	Inconsistency	Indirectness	Imprecision	Other Considerations	MIGS	Comparator			
MIGS Vs. Filtration Surgery: 2x istent Inject Vs. Trabeculectomy With MMC											
1	Prospective cohort[l]	Serious risk of bias[m]	No serious inconsistency	No serious indirectness	Serious imprecision[n]	None	20	25	**2x iStent Inject [<] Trabeculectomy With MMC:** The **number of medications** was significantly reduced from baseline in the 2x iStent Inject group at 1 d and 6 wk follow-up, but not 3 or 6 mo follow-up, and was significantly reduced from baseline in the Trebculectomy group at all follow-up time points (at 6 mo: 2.5 vs. 0.5 medications for 2x iStent Inject and Trabeculectomy groups, respectively; between-group differences were not tested statistically).[25]	⊕OOO VERY LOW	CRITICAL
MIGS Vs. Filtration Surgery: Trabectome or 2x istent Inject Vs. Trabeculectomy With MMC											
1	Prospective cohort[l]	Serious risk of bias[m]	No serious inconsistency	No serious indirectness	Serious imprecision[n]	None	63	25	**MIGS < Trabeculectomy with MMC:** The **number of medications** was numerically reduced from baseline in the MIGS group (combined Trabectome and 2x iStent Inject; not tested statistically) and was significantly reduced from baseline in the Trabeculectomy group at 1 d to 6 mo follow-up; the **number of medications** was significantly higher in the MIGS vs. Trabeculectomy groups all follow-up time points .[25]	⊕OOO VERY LOW	CRITICAL
MIGS Vs. Filtration Surgery: Xen45 With MMC Vs. Trabeculectomy With MMC											
1	Retrospective cohort[o]	Serious risk of bias[p]	No serious inconsistency	No serious indirectness	Serious imprecision[q]	None	185	169	**Xen45 with MMC [=] Trabeculectomy with MMC:** The median **number of medications** was numerically similar between Xen45 and Trabeculectomy groups at follow-up (not tested statistically, but median of 0 medications in both groups at median	⊕OOO VERY LOW	CRITICAL

Quality Assessment							Summary of Findings				Importance
							No. of Eyes		Effect	Quality	
No. of Studies	Study Design	Risk of Bias	Inconsistency	Indirectness	Imprecision	Other Considerations	MIGS	Comparator			
									follow-up duration of 15.0 and 17.8 mo, respectively).[65]		

= = not significantly different between groups; [=] = not compared statistically but tendency for no difference between groups; > = intervention more favourable than comparator; < = intervention less favourable than comparator; [<] = not compared statistically but tendency for intervention less favourable than comparator; [?] = not compared statistically or non-interpretable;1x = one device; 2x = two devices; 3x = three devices; AGI = Ahmed glaucoma implant; BGI = Baerveldt glaucoma implant; d = days; ECP = endoscopic cyclophotocoagulation; IOP = intraocular pressure; MIGS = minimally invasive glaucoma surgery; MMC = mitomycin C; mo = months; NA = not applicable; no. = number; RCT = randomized controlled trial; SLT = selective laser trabeculoplasty; vs. = versus; wk = weeks; y = years.

Note: Data were collected by RCT, non-randomized controlled clinical trial, retrospective or prospective cohort, with up to 42 months of follow-up. The method of measuring number of medications was not specified in any study.

[a] One prospective cohort study.[62]

[b] Serious risk of bias.[62] Bias due to confounding: significant differences between groups at baseline were not controlled, and treatment arm was assigned by geographical location. Bias in measurement of outcome: method of measuring number of medications not specified. Bias in selection of the reported result: number of medications only reported at 12-month follow-up (other variables also reported at 1, 3, and 6 months).

[c] Serious imprecision. Only a single study, and the variability in the estimate (standard deviation) was similar in magnitude to the parameter (mean).[62]

[d] One RCT in two publications.[59,60]

[e] Very serious risk of bias.[59,60] Selection bias: no indication of allocation concealment. Detection bias: method of measuring number of medications not specified. Reporting bias: absolute number of medications not reported in the results (only the proportion of patients on any medications), and relevant statistical comparisons not conducted or reported.

[f] Serious imprecision. Only a single study, and no measures of variability.[59,60]

[g] One retrospective cohort[63] and one non-randomized controlled clinical trial.[61]

[h] Serious risk of bias.[61,63] Bias due to confounding: different surgeons performed ECP and BGI surgery;[63] pseudorandomization (first patient randomized, followed by counterbalanced enrolment);[61] potential confounding variables not controlled for in analyses.[61,63] Bias in selection of participants: only those with two-year complete data were included and it is possible that those with complete data were systematically different from those without complete data (i.e., different from those in routine clinical practice).[63] Bias due to missing data: large loss to follow-up, amount of missing data not balanced across groups, and reasons for missing data not reported.[61,63] Bias in measurement of outcomes: method of measuring number of medications not specified.[61,63] Bias in selection of the reported result: some preoperative population characteristics that were measured were not reported;[63] number of medications reported only at baseline and 24 months (but at none of the other follow-up time points), and rationale for reporting as medians instead of means not specified.[61]

[i] One prospective cohort[25] and one retrospective cohort study.[64]

[j] Serious risk of bias.[25,64] Bias due to confounding: decision for MIGS versus Trabeculectomy was made by treating surgeon based on patient characteristics, and choice of MIGS was made by individual patients;[25] retrospective study and rationale for assigning treatments likely to be different between groups;[64] significant differences between groups at baseline;[64] potential confounding variables not controlled for in analyses.[25,64] Bias due to missing data: large loss to follow-up and reasons for missing data not reported.[64] Bias in measurement of outcomes: method of measuring number of medications not specified.[25,64]

[k] Serious imprecision. No measures of variability in one study.[25]

[l] One prospective cohort study.[25]

[m] Serious risk of bias.[25] Bias due to confounding: decision for MIGS versus Trabeculectomy was made by treating surgeon based on patient characteristics, and choice of MIGS was made by individual patients; potential confounding variables not controlled for in analyses. Bias in measurement of outcomes: method of measuring number of medications not specified.

[n] Serious imprecision. Only a single study, and no measures of variability.[25]

[o] One retrospective cohort study.[65]

[p] Serious risk of bias.[65] Bias due to confounding: significant differences between groups at baseline; potential confounding variables not controlled for in analyses. Bias in selection of participants: patients with < 1 month follow-up were excluded and it is possible that those with < 1 month follow-up were systematically different from those with ≥ 1 month follow-up (i.e., different from those in routine clinical practice). Bias due to missing data: no information on amount or nature of missing data was reported. Bias in measurement of outcomes: method of measuring number of medications not specified. Bias in selection of the reported result: no rationale for reporting findings as medians instead of means, and absolute values reported only at “last follow-up.”

[q] Serious imprecision. Only a single study.[65]