

A Clinical Registry Study of Glaucoma Medication Use in Patients with a Mild Glaucoma Severity After Receiving MIGS

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BACKGROUND

- Intraocular pressure (IOP)-lowering drops are the most common first line of care for managing IOP in glaucoma patients.¹ However medications are associated with a range of adverse events which impact quality of life and rely heavily on patient adherence.^{2,3}
- Minimally Invasive Glaucoma Surgery (MIGS) has expanded treatment options for glaucoma patients allowing for earlier and more individualized IOP control interventions in mild and moderate cases, while also delaying or preventing the need for more invasive interventions at a later stage of disease.
- The American Academy of Ophthalmology (Academy) IRIS[®] Registry (Intelligent Research in Sight) is the largest electronic health record (EHR)-based comprehensive eye disease and condition registry in the US.⁴ Using the IRIS Registry, this study sought to provide real-world post-surgical outcomes data for FDA approved or cleared ab interno MIGS devices in the US (OMNI[®] Surgical System, Hydrus[®], and iStent Inject[®]) combined with cataract surgery, as well as for cataract surgery alone.

METHODS

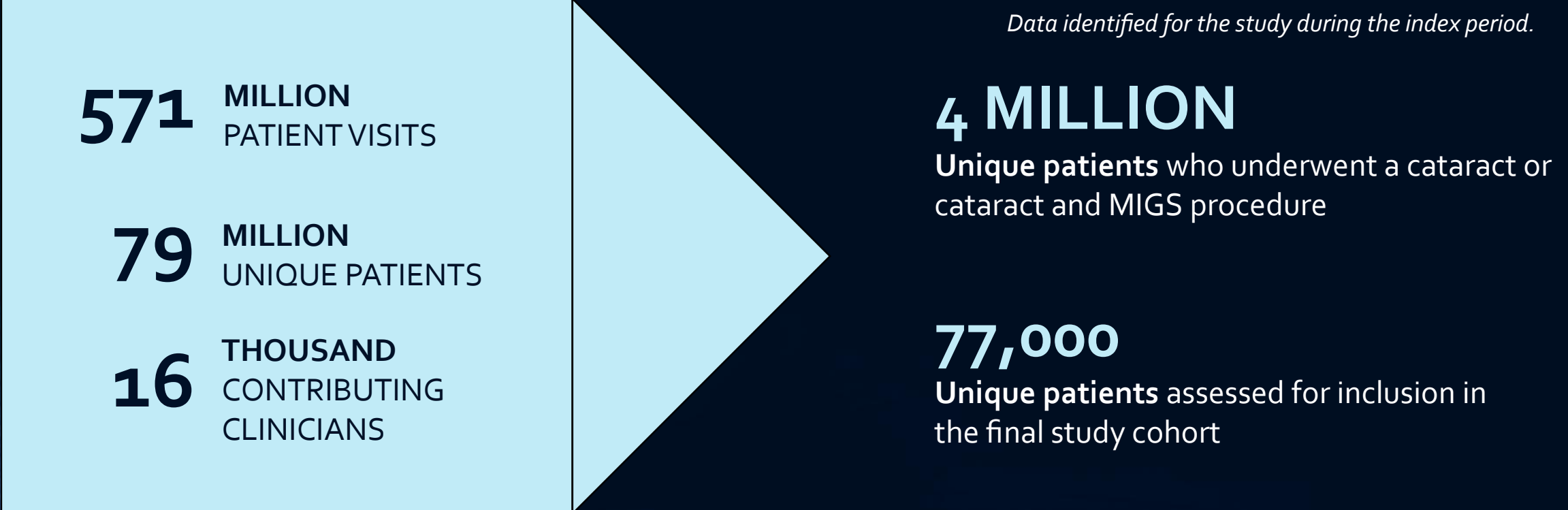
- Retrospective analysis of medical records from the IRIS[®] Registry, the nation's first comprehensive eye disease clinical database.
- Patients with valid intraocular pressure (IOP) measurements for at least 1 year and an ICD-10 diagnosis of 'Mild' glaucoma severity were grouped into four cohorts: OMNI[®] Surgical System, Hydrus[®], and iStent Inject[®], each combined with cataract surgery, and cataract surgery only.
- MIGS were identified via CPT codes coupled with clinic note text processing. Glaucoma medication regimens were ascertained using linked commercial claims data (Komodo Health, Inc) during the study period (July 1, 2016-June 30, 2022).
- Two-sample t-tests and two-proportion z-tests (with Bonferroni correction) were used to analyze significance.



Research Using AAO IRIS Registry[®] (Intelligent Research in Sight) Data

IRIS REGISTRY

As of January 2023



Data identified for the study during the index period.

571 MILLION
PATIENT VISITS

79 MILLION
UNIQUE PATIENTS

16 THOUSAND
CONTRIBUTING
CLINICIANS

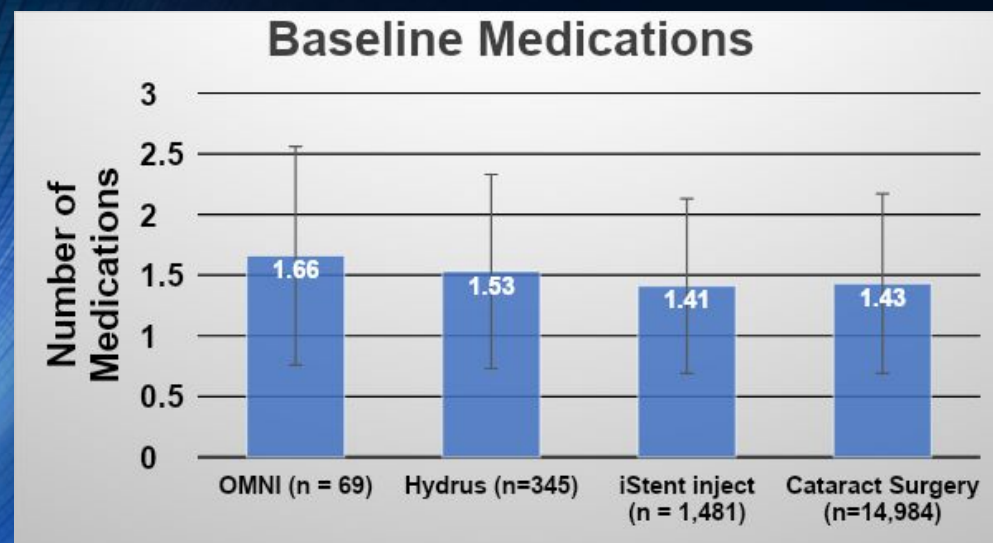
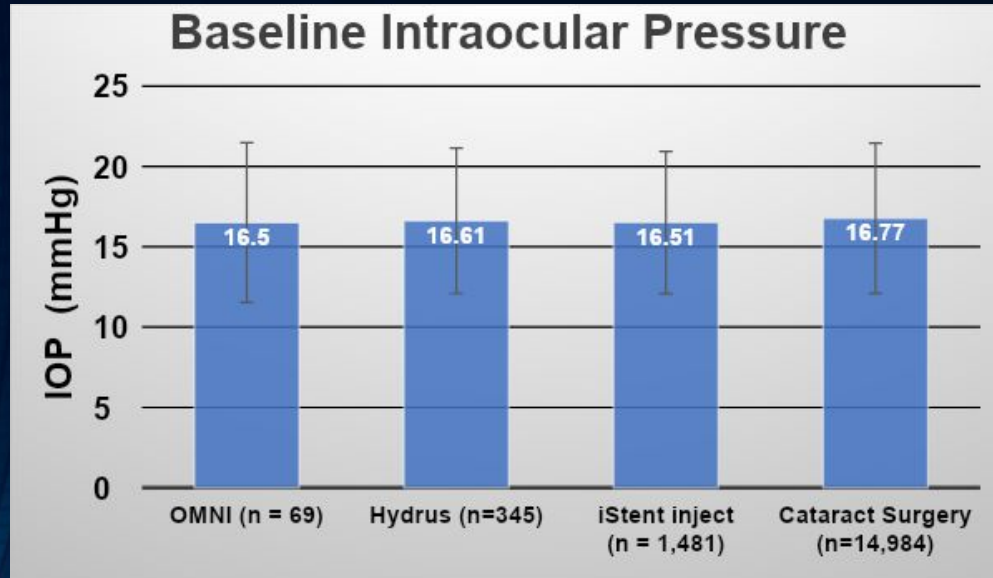
4 MILLION
Unique patients who underwent a cataract or
cataract and MIGS procedure

77,000
Unique patients assessed for inclusion in
the final study cohort

10 YEARS LONGITUDINAL DATABASE

RESULTS

Baseline Characteristics

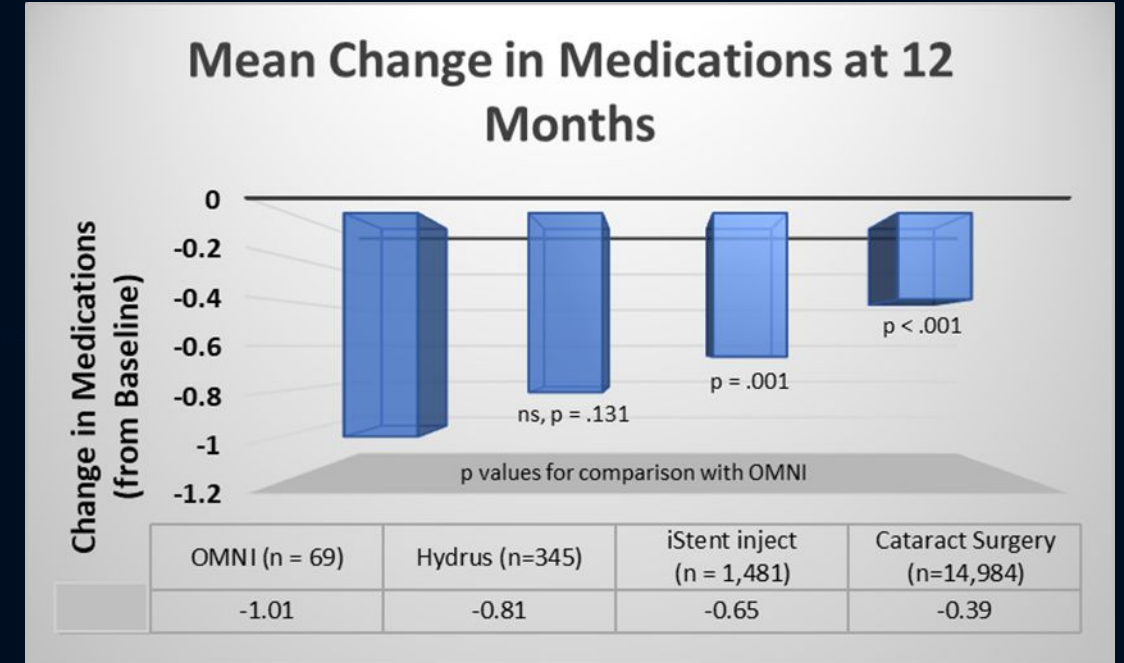
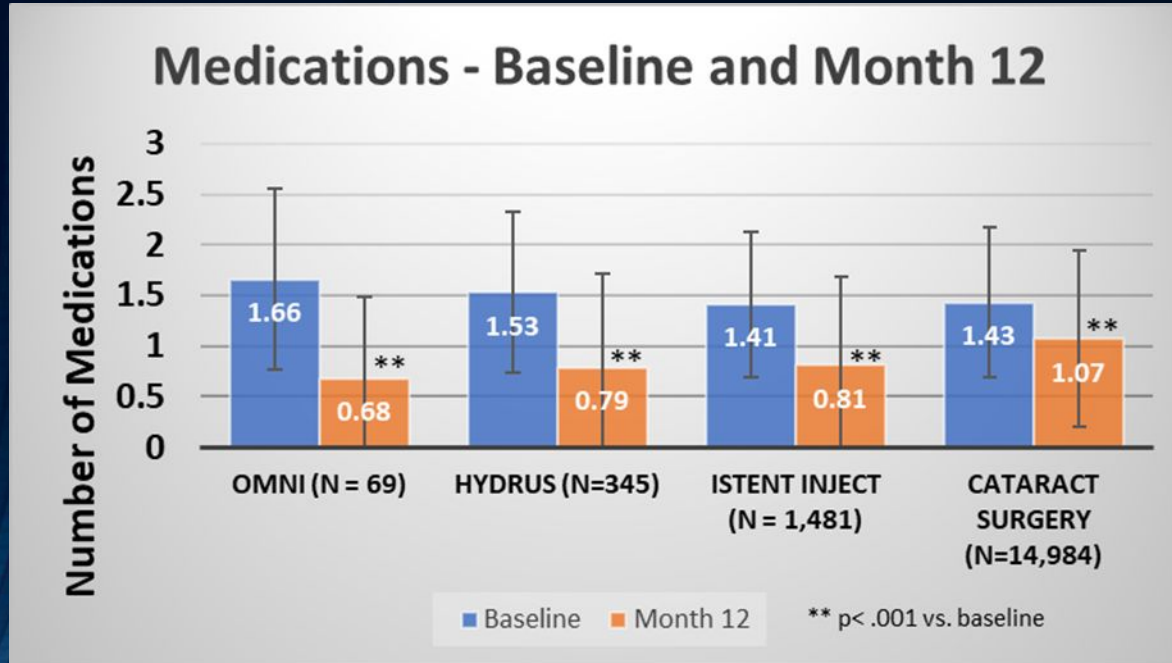


	OMNI	Hydrus	iStent Inject	Cat Surgery
N	130	615	2,507	21,424
Age (mean, SD)	71.5 (8.2)	71.8 (7.7)	72.0 (7.8)	72.5 (8.7)
Sex (%)				
Female	57.7	57.9	58.0	58.1
Male	42.3	42.1	42.0	41.9
Race (%)				
Asian	2.3	1.6	1.4	2.5
Black/Afr Am	13.8	12.4	10.4	11.7
Native Am	0.8	0.3	0.4	0.3
White	65.4	72.2	74.0	70.1
Other	0.0	0.4	0.8	1.5
Not Reported	17.7	13.2	13.0	14.0
Ethnicity (%)				
Hispanic	2.3	2.8	4.8	6.7
Not Hispanic	80.0	65.4	68.9	71.9
Not Reported	17.7	31.9	26.3	21.4
POAG (%)				
	100	99.3	99.8	98
Baseline IOP mmHg				
	16.5 (5.0)	16.6 (4.5)	16.5 (4.4)	16.8 (4.7)

- Demographic characteristics were comparable across cohorts, including baseline IOP
- Surgeon subspecialty split between Glaucoma specialist and Cat+Anterior Seg+Other (in %): OMNI 38/62, Hydrus 31/69, iStent 24/76, Cat Surgery 13/87
- OMNI and Hydrus had slightly more medication use at baseline

RESULTS

Medications at 12 Months



- Reductions in the mean number of glaucoma medication classes were seen across all cohorts at 12 months
- The difference in reduction was statistically significant when OMNI was compared to iStent Inject and cataract surgery (p < 0.001 in both cases); no other statistically significant differences were found.

Early Intervention – The Changing Paradigm

“The development of a family of procedures –collectively called microinvasive glaucoma surgery (MIGS) – addresses an unmet need for a procedure for patients with mild-to-moderate glaucoma who would benefit from early surgical management but whose therapeutic target does not justify the risks of traditional procedures such as trabeculectomy or tube-shunt implantation”

Radcliffe N. 2023⁵

“Because glaucoma is a chronic, lifelong condition, is progressive, and is potentially blinding, many surgeons opt for early intervention, particularly with the availability of minimally invasive procedures that have excellent safety. There is also the opportunity in these patients to reduce the burden of medication and allow for IOP control that is not reliant on patient adherence”

Hirsch L, et al. 2021⁶

Conclusion

Utilizing the IRIS Registry, patients with mild glaucoma undergoing MIGS combined with cataract surgery may require fewer medications post-operatively than patients who underwent only cataract surgery. The greatest reductions in medication use were noted with OMNI followed by Hydrus. More data may be necessary to confirm whether the improved outcomes for patients treated with OMNI versus cataract surgery alone and iStent Inject is further maintained at 24 and 36 months.

- Reductions in the mean number of glaucoma medication classes were seen across all cohorts at 12 months
- Patients diagnosed with a 'Mild' glaucoma severity who underwent an OMNI procedure subsequently used fewer glaucoma medications when compared to other cohorts in this study population.
- This suggests a durable reduction in IOP at 1 year for patients who underwent OMNI, and a reduction in medications may be expected post-operatively.

References

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