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A COMPARATIVE STUDY OF 2-YEAR OUTCOMES FOR HYDRUS OR ISTENT INJECT MICROINVASIVE GLAUCOMA SURGERY IMPLANTS WITH CATARACT SURGERY

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Purpose
Comparing outcomes of combined phacoemulsification and either iStent inject or Hydrus Microstent for reduction of intraocular pressure (IOP) and medication use after 24 months.

Methods
Retrospective cohort analysis of data from an international multicenter database.

Anonymized data from 344 eyes in the Fight Glaucoma Blindness registry that underwent combined phacoemulsification and either iStent inject (224) or Hydrus Microstent (120) with mild-moderate open angle glaucoma, normal tension glaucoma or ocular hypertension was included. Eyes with prior incisional glaucoma surgeries or intra-operative complications at phacoemulsification were excluded.

Data was adjusted for baseline characteristics using linear regression and creation of two 1:1 cohorts using propensity score matching. Follow up was performed as routine post-operative care.

The primary endpoint was a comparison of mean IOP at 24 months.

Results
At 24 months, there was no significant difference in IOP change between the groups, which was consistent across all analyses. In the matched cohort, iStent inject achieved a 3.1mmHg reduction and Hydrus a 2.3mmHg reduction (p=0.530). The raw data showed no difference in the magnitude of medication reduction between the groups, however after adjusting for baseline characteristics, there was a significantly greater mean medication reduction in the iStent inject group of 0.9 medications, compared to a 0.4 reduction for Hydrus (p=0.025). A similar (though not statistically significant) trend was also seen in the propensity match cohort, with a mean medication reduction of 1.0 for iStent inject vs a 0.5 for cataract with Hydrus (p=0.081).5.4% of eyes in the iStent inject group and 7.5% of eyes in the Hydrus group required subsequent procedures to improve IOP control. BCVA loss of ≥2 lines persistent after 3 months was reported in 7.6% in the iStent group and 11.7% in the Hydrus group (p=0.900). Other complications associated with the glaucoma device surgery were uncommon.

Conclusions
24-month outcomes of combined phacoemulsification and either iStent inject or Hydrus showed sustained IOP reduction with a good safety profile. There was no significant difference in IOP outcomes between the groups. There may be a small additional reduction in glaucoma medication usage following iStent inject compared to Hydrus.