Patient outcomes from trabecular bypass stent microsurgery for open-angle glaucoma

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Purpose: The iStent is a novel trabecular bypass shunt which allows drainage of aqueous fluid from the anterior chamber directly into Schlemm’s canal bypassing the trabecular meshwork. The device is 1mm in length and is made of surgical-grade non-ferromagnetic titanium. It is licensed for use in early to moderate glaucoma patients and can be inserted during a combined procedure with phacoemulsification and IOL insertion or as a stand alone surgery. If cataract surgery is performed the pupil is constricted after IOL placement and the iStent which is preloaded in a single-use, sterile inserter is placed into the Schlemm’s canal via the trabecular meshwork under gonioscopic guidance.

Methods: Retrospective, case series, Jan 2011-May 2013. 18 POAG patients undergoing iStent ± phacoemulsification at The Western Eye Hospital, London by a single surgeon. Main outcome measures included: post-operative IOP (mmHg) number of glaucoma drops required for IOP control and complications.

Results: n = 18 (16 iStent+ phacoemulsification, 2 iStent alone). Mean age = 65 (range 92-49). Mean IOP before surgery (operated eye) = 19 ± 3.5 mmHg (range 27.7-12). Mean IOP at 8 weeks PO visit = 14.6 ± 2.7 mmHg (range 24-12). Mean reduction in IOP = 4.4 mmHg (p ≤ 0.001). There was a meaningful reduction in IOP in 61% (11/18) of patients. 10/18 (55.6%) of patients saw a reduction of at least one of their glaucoma drops required for adequate IOP control by 8 weeks post op. (mean = 0.6 medications which was not significant at p ≤ 0.01). There was 1 case of blood in Schlemm’s canal at 3 weeks post-op.

Conclusions: Trabecular bypass stents inserted as a single or combined procedure results in a statistically significant reduction in IOP in POAG patients by 8 weeks post-op. This safe procedure also allows a significant proportion of patients to reduce/stop their glaucoma drops.