



Lifetime visual outcomes of patients undergoing trabeculectomy

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Introduction

Glaucoma is a chronic progressive optic neuropathy that results in irreversible sight loss. Despite successful management of glaucoma, some patients still lose vision after glaucoma surgery. For patients, the most important outcome from glaucoma interventions is maintenance of their quality of life to allow independent living(1). Even as the natural history of open-angle glaucoma has been studied extensively(2), little is known of the end of life visual status of patients who have had a trabeculectomy. This study is the first of its kind to quantify end of life vision in terms of visual acuity and visual field status and provides essential information for both clinicians and patients about the lifetime value of trabeculectomy.

Methodology

This was a prospective service evaluation of patients who had undergone trabeculectomy (from 2000 to 2012) and died prior to the study evaluation point (November 2018) under the care of a single surgeon (AJK). The following data were collected:

Clinical measures

- Visual Acuity (VA)
- Visual Field Mean Deviation (VFMD)
- Intraocular Pressure
- Number of drops required

Changes in clinical measurement between time of surgery and death were measured. Causes of severe vision loss (defined as ≥ 10 letter loss) and survival time post trabeculectomy were also collected.

Results

156 patients (196 eyes) were evaluated. Male: female ratio was 3:2, 86% were Caucasian. POAG was the commonest type of glaucoma to undergo trabeculectomy. Life expectancy after trabeculectomy was 7.5 years (0.1-17.2).

Changes in clinical outcomes between time of surgery and death are as follows (See table 1 and figure 1)

	Mean at baseline	Mean at end	Change
LogMAR VA (N = 191)	0.28 (0.40)	0.60 (0.70)	0.32(0.59)
VF – MD (N = 160)	-14.5 (7.9)	-17.1dB (8.2)	-2.6dB (4.9) (-0.62dB/yr)

Table 1: Change in VA and VFMD between surgery and end of life

Visual field mean deviation progressed at a median of -0.44db/year (-5.98 to 3.9) for eyes with at least a year of follow up. 69 patients (44%) required glaucoma drops at end of life. Severe vision loss occurred in 78 eyes (40%) of which 18 (9%) were due to glaucoma. This means only 1 in 4 eyes worsen due to progression of glaucoma after trabeculectomy.

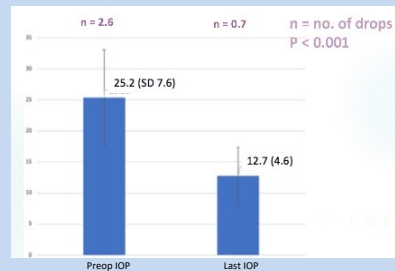


Figure 1: Change in IOP and number of drops between surgery and end of life

Conclusion

This study provides end of life data quantifying risk of vision loss in patients post-trabeculectomy. Most patients remain stable postoperatively and those who lose vision, do so primarily due to non-glaucoma age related causes. This information is useful for clinicians and patients about the lifetime value of trabeculectomy.

References:

- 1) Kulkarni BB, Leighton P, King AJ. Exploring patients' expectations and preferences of glaucoma surgery outcomes to facilitate healthcare delivery and inform future glaucoma research. Br J Ophthalmol. 2019.
 - 2) Heijl A, Bengtsson B, Hyman L, Leske MC, Early Manifest Glaucoma Trial G. Natural history of open-angle glaucoma. Ophthalmology. 2009;116(12):2271-6.
- RC conducted data collection, analysis and designed the poster. AJK planned and provided feedback for this study.