Outcomes of KDB goniotomy and Phacoemulsification Surgery in a District General Hospital

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Introduction

Prevalence of glaucoma is estimated to be 2.1% in adults over the age of 40[1]. Concomitant minimally invasive glaucoma surgery (MIGS) and cataract surgery has been shown to have better clinical outcomes than non-concomitant surgeries. New advancements in MIGS include Kahook Dual Blade (KDB) goniotomy alongside more conventional procedures such as IStent or trabectome surgery. Recent comparative studies have shown phacoemulsification with KDB goniotomy show effective long term Intraocular pressure (IOP) reduction compared to IStent procedures[2,3]. However, no such studies have been carried out in the United Kingdom (UK).

This poster looks at the outcomes from a series of cases of phacoemulsification with KDB goniotomy for treatment of glaucoma with cataract in a district general hospital in the United Kingdom.

Methods

A retrospective analysis was performed on all cases of Phacoemulsification with KDB goniotomy were identified between 1st January 2019 to 16th May 2021 in a District General hospital. Pre and post procedural Intraocular pressure, visual acuity and medication regimes were recorded pre-procedure and post-procedure at 1 week and 4-6 weeks follow up was obtained from clinic letters and notes. IOP, visual acuity and medication regime was recorded at each interval. Data was analysed using R statistical software[5] using paired T tests to assess significance.

Results

Data was obtained from 24 eyes (10/24 left eye) of 20 patients (10/20 female). Patients were diagnosed as advanced or end stage glaucoma with disc/cup ratio >0.7 (mean = 0.91) and used 2 IOP lowering medications prior to surgery. Average IOP of the eye prior to surgery was 21.2mmHg (19.79–22.61 95% CI). Average visual acuity prior t o procedure was 6/9.68. Post-operative complications included anterior uveitis (n=5), blepharitis (n=1), drug reactions (n=1) and cornea oedema (n=1). These complications resolved after 6 weeks of surgery.

On average, reduction in IOP at was insignificant at 1 week (17.83mmHg (16.14-19.52 95% CI), p= 0.18 fig 1a) but significant at 4-6 weeks (17.23mmHg (16.07-18.39),p= <0.01 fig 1b), Differences in visual acuity were insignificant at 1 week and 4-6 weeks follow up (p>0.1). IOP medication was significantly reduced at 1 week (n=1.71, p=0.04) but not at 4-6 weeks (n=1.95, p= 0.18).

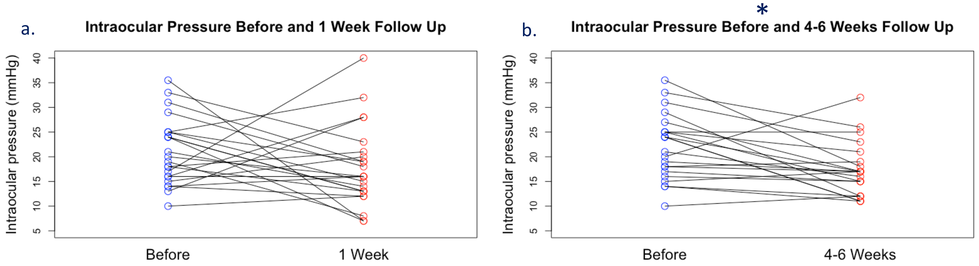


Fig 1. Dot plots showing IOP comparisons at 1 week (a, n=23) and 4-6 weeks (b, n=22), *p<0.05

Discussion and Conclusions

There is initial efficacy in the IOP lowering effect of KDB goniotomy with phacoemulsification at one month follow up. The initial insignificance of IOP reduction at one week follow up may be due to a premature reduction of glaucoma medications but that at a later follow up once established on glaucoma medication is re-established. We have changed our policy informed patients who have end stage glaucoma not to stop glaucoma eye drops after surgery. Insignificance in IOP reduction at one week may also be accounted for by hyphaema, inflammation intra-operative use of Kenalog or post operative use of steroids. Post-operative anterior uveitis which is seen to a degree in all patients but can persist for weeks after. This is due to stripping of trabecular meshwork which caused severe anterior uveitis. All these cases resolved after 6 weeks of intense topical steroid drops. The vision did not improve in a significant proportion of cases because the vision was poor due to end stage glaucoma and cataract surgery could not improve it.

In conclusion, this poster examining a small number of patients shows promise that phacoemulsification with KDB goniotomy could be a treatment for glaucoma and cataract in the future.

References

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