A comparative study of surgical outcomes of excisional goniotomy using the Kahook Dual Blade (KDB) combined with phacoemulsification (KDB-phaco group) in mild glaucoma vs standalone KDB group in severe glaucoma after failed glaucoma surgeries.

Nishanthini, Karuppiah[1] MD, Christoph, Kranemann[1] MD,FRCSC, Roccatti- Ortiz, Diego[1], MD, Catherine, M. Birt[1], MA, MD,FRCSC,

[1]Department of Ophthalmology and Vision Science

Method: In this study, a retrospective chart review was performed involving 10 eyes in KDB- phaco vs 10 eyes in KDB group. The outcome measures included mean IOP reduction, mean reduction in IOP lowering medications and adverse effects. Surgical success was defined as IOP reduction of at least 20% from baseline at 6 months, and /or reduction of at least 1 glaucoma medication.

Results: Statistically significant mean IOP and mean number of IOP medication reductions from baseline were achieved at all points in both groups. At 3 months, mean IOP decreased significantly from 29.5 ±3.5 to 15.1 ±2.5 ($p<0.001$) and from 21.8 ±2.9 to 11.5 ±2.2 ($p<0.001$) in the KDB and phaco-KDB groups, respectively. The number of IOP lowering agents decreased from a baseline of 3.9±1.2 to 0.62± 0.39($p<0.001$) at 1 month followed by a slight increase to 0.87±1.2 at 3months in the KDB group whereas in the phaco-KDB group, medications reduced from 1.6±1.1 to 0.23 ±0..4($p<0.001$) at 1 month and remained unchanged at 3 months. The common complications on day 1 were corneal edema, which was significantly greater in the KDB group at 72.7% vs 37.5% in phaco-KDB group ($p<0.001$)and hyphema which was 54.5% in KDB group vs 37.5% in phaco-KDB group. All the complications resolved spontaneously in 1-2 weeks with no adverse effects. Surgical success is yet to be calculated after a follow up of 6 months.

Conclusion: KDB achieved a statistically significant IOP and medication burden reduction in both groups. The most common complication reported in both groups was corneal edema which was significantly greater in the KDB group. No severe complications were reported. Although its efficacy decreases over time, its cost effectiveness and favorable safety profile makes this procedure a potentially useful primary adjunctive in high risk eyes.