



Stratification of Phaco-Trabectome Surgery Results Using A Glaucoma Severity Index



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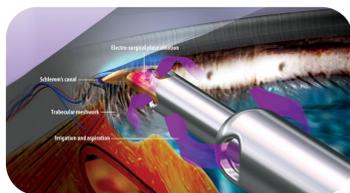
Purpose

To stratify the outcomes of phacoemulsification combined with trabectome surgery (AIT-Phaco) using a glaucoma severity index (GI) based on preoperative IOP, number of preoperative medications (meds), and visual field (VF) damage .

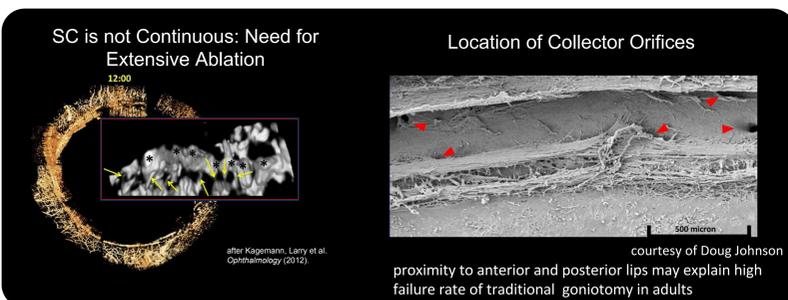
Patients and Methods

Only subjects with phaco-trabectome were included while eyes with other concurrent surgery or follow up less than 12 months were excluded. All eyes underwent trabectome surgery first followed by phacoemulsification and lens implantation. A glaucoma index was created to capture the severity of glaucoma. VF was separated into: mild (1 point), moderate (2 points), and advanced (3 points). Meds was divided into groups with values 1 to 4: ≤ 1 , 2, 3, or ≥ 4 . Baseline IOP was divided into: < 20 mmHg (1 point), 20-29 mmHg (2 points), > 30 mmHg (3 points). GI was then defined as $VF * meds * IOP$ and separated into: < 3 (Group 1), 3-5 (Group 2), 6-11 (Group 3), ≥ 12 (Group 4). Linear regression was used to determine association between GI and IOP after 1 year. Success was defined as $IOP \leq 21$ mmHg or 20% IOP reduction from baseline in any two consecutive visits after 3 months and no secondary glaucoma surgery.

Key Steps of Surgical Technique



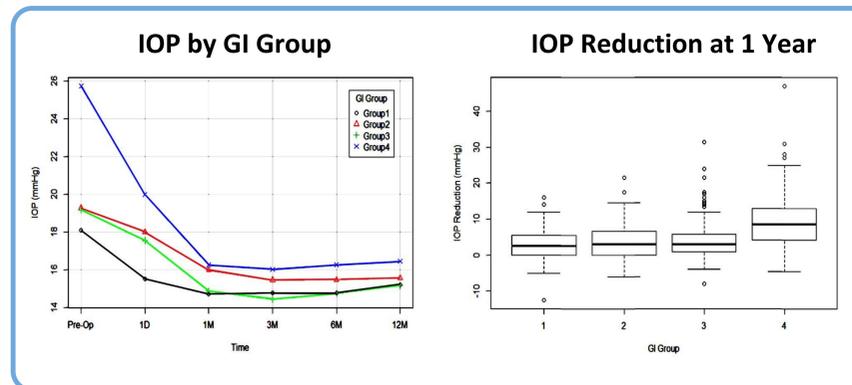
- 1. Visualization**
 - excellent microscope (xenon, large tilt)
 - no visco at start
 - hypotony, identify
- 2. Technique**
 - anterior, flared incision
 - no outward push, near 180° ablation
 - trabectome first, then phacoemulsification
- 3. Reducing hyphema**
 - viscoelastic tamponade: after ablation + after phaco
 - intracameral dexamethasone, pressurize well



Results

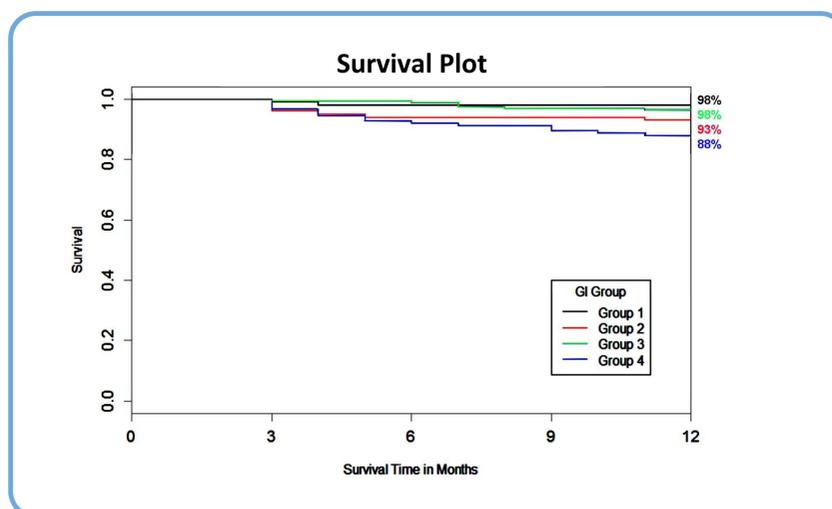
498 cases were analyzed. Linear regression showed that IOP reduction was associated with GI group after adjusting for age, diagnosis, and visual acuity (LogMar).

Mean IOP reduction after one year for GI groups 1 to 4 was 2.9 ± 4.4 , 3.6 ± 5.0 , 3.9 ± 5.3 , and 9.2 ± 7.6 mmHg, respectively. A higher GI was associated with a higher preoperative IOP while postoperative IOPs were similar.

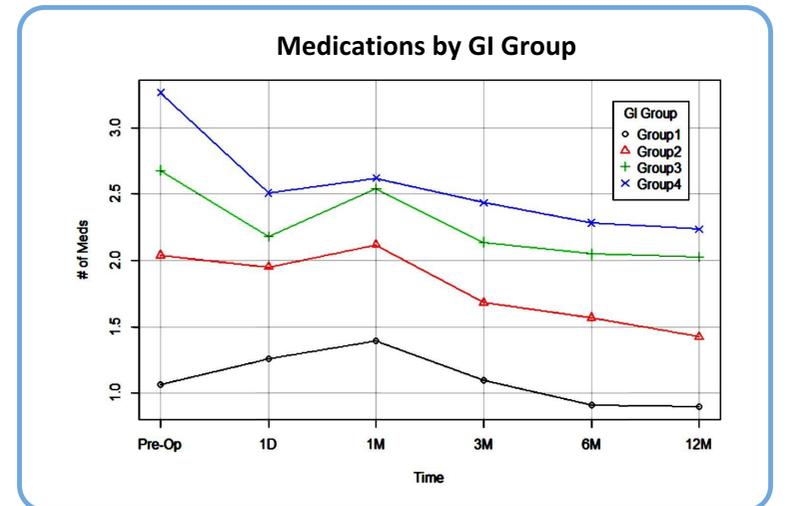


Patients in a higher GI group are expected to have a greater IOP reduction by 1.7 ± 0.2 mmHg than those in a lower GI group. Therefore, a larger absolute reduction of intraocular pressure (IOP) was seen.

Log-rank test suggested statistically significant difference in survival distributions between GI groups.



There was an overall decrease in the number of medications in all groups.



Discussion

AIT-Phaco had a mixed indication of a visually significant cataract and the need to lower IOP or an interest in lowering the number of glaucoma medications. A substantial pressure reduction was seen in patients with more advanced glaucoma which suggests that the trabecular meshwork is the primary impediment to outflow and its ablation benefits those eyes relatively more than in mild glaucoma. Higher GI groups are expected to have a greater reduction of IOP.

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Disclosures

NAL: trabectome trainer

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