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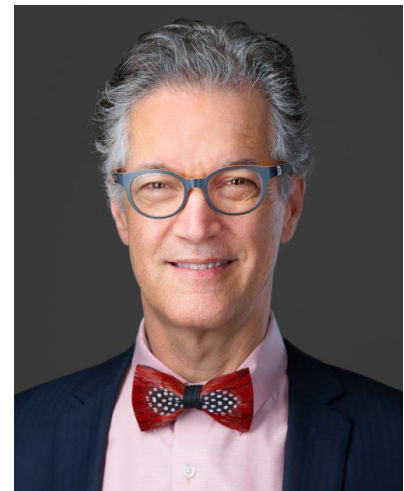
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## Endothelial Cell Density And Loss Following Ab-Interno Canaloplasty In Patients With Mild-Moderate Glaucoma As Compared To Severe Glaucoma

**Purpose:** To evaluate endothelial cell density and IOP reduction of ab-interno canaloplasty using the iTrack (Nova Eye Inc., Fremont, USA) combined with cataract surgery over 12 months in patients with mild-moderate glaucoma as compared to severe glaucoma and in controlled vs uncontrolled.

**Setting:** Prospective, multicenter registry study in the USA.

**Methods:** Patients undergoing ab-interno canaloplasty combined with cataract surgery were recruited. Specular microscopy was performed preoperatively and at 6, 12 and 24 months postoperatively. Standard metrics for glaucoma surgery follow-up were also measured including visual acuity, intraocular pressure, visual fields, optic nerve optical coherence tomography (OCT) and glaucoma medication use. Endothelial cell density and loss (ECD and ECL) were analyzed at each time point and eyes were categorized between baseline mild to moderate versus severe glaucoma and baseline controlled IOP with medications ( $\leq 18$ mmHg) versus uncontrolled ( $> 18$ mmHg).



**Results:** 77 eyes of 46 patients (mean age:  $74.7 \pm 6.8$ ) were recruited. There was no difference in ECD between the mild-moderate and severe groups at baseline ( $2292 \pm 395$  and  $2329 \pm 285$  respectively;  $p=0.7$ ), 12 months ( $2236 \pm 382$  and  $2215 \pm 293$ ;  $p=0.8$ ), or in terms of ECL ( $76 \pm 161$  and  $91 \pm 151$ ;  $p=0.7$ ). Likewise, there was no difference in ECD between the IOP controlled and uncontrolled groups at baseline ( $2305 \pm 372$  vs  $2302 \pm 354$ , respectively;  $p=0.97$ ) and 12 months ( $2241 \pm 371$  vs  $2212 \pm 334$ ;  $p=0.74$ ). Baseline IOP (mmHg) in the mild-moderate group and in the severe group was  $17.9 \pm 3.3$  and  $17.5 \pm 3.6$  respectively and was reduced to  $15.0 \pm 2.9$  and  $14.4 \pm 2.9$  at 12 months.

**Conclusion:** Ab-interno canaloplasty performed in conjunction with cataract surgery causes no significant change in endothelial cell density across all grades of glaucoma severity or baseline IOP up to 12 months postoperatively.

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