Canaloplasty Effectiveness Correlated with Viscoelastic Volume Delivered in Schlemm's Canal

Paper

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Purpose: To investigate the effectiveness and correlation of pressurized ophthalmic viscoelastic device (OVD) volume delivered during ab-interno canaloplasty to reduce IOP in glaucomatous eyes.

Method: Eyes with glaucoma diagnosis and with ≥270° microcatheter circumnavigation of Schlemm's canal were collated from multicenter cloud-based database (iTGDR, part of the International Glaucoma Surgery Registry). All patients underwent ab-interno canaloplasty via iTrack or iTrack Advance (Nova Eye Inc). Outcomes were defined as complete success: lower IOP, less meds; qualified success: lower IOP, same meds or same IOP, less meds; failure: final IOP or meds increased. Eyes were stratified based on OVD used (Healon; Healon Pro; Healon GV) and by amount of microboluses delivered (25-39; 40-59; 60-80). All eyes were included for safety data; for success results, only eyes with at least 12M follow-up.

Results: 376 eyes have been enrolled at baseline, 157 had at least 12-month follow up. Mean OVD volume delivered was 116.7±26.7µl or 46.7±10.7 microboluses (range: 25–175 µl or 10–70 microboluses). Complete success was 39.3%, 63% and 50% in the groups 25–39, 40–59 and 60–80 microboluses respectively. Qualified success was 26.8%, 16% and 35% and failure was 33.9%, 21% and 15% respectively. When stratified by OVD type, the group 40–59 microboluses returned the highest percentage of complete success in each OVD used. IOP spikes at day 1 were 9.1% for Healon, 10.5% for Healon Pro and 13.3% for Healon GV.

Conclusions: Findings suggest that 40–59 microboluses or 100–148 µl of OVD delivered in Schlemm's canal result in the best outcomes for lowering IOP and medications.

Disclosures: The authors have no financial and proprietary interests to disclose about the product(s) mentioned in this abstract. They are consultants to Nova Eye Medical

Sunday, April 27
Minimally Invasive Glaucoma Surgery (MIGS)
4:05 PM - 4:10 PM
LACC - Meeting Room Level 2, 513