Purpose: Cataract and glaucoma are the leading causes of blindness worldwide. Techniques for cataract surgery have undergone significant refinements with excellent visual outcomes enjoyed by our patients.

This study aimed to compare the three-month-efficacy and safety of glaucoma surgery using CO2 LASER-assisted sclerectomy surgery (Phaco-CCLASS) and Cairns trabeculectomy (Phaco-TRAB), combined with phacoemulsification and posterior chamber intraocular lens implantation, in patients with cataract and open angle glaucoma.

Methods: Retrospective case series including consecutive patients with primary and pseudoexfoliation open angle glaucoma, elected for filtration and cataract surgery between January 2016 and March 2017. The best corrected visual acuity (BCVA), intraocular pressure (IOP) and number of antiglaucoma medications were documented at baseline and at all postoperative clinic visits (1 and 3 weeks and 1, 2 and 3 months). All intra- and postoperative complications were registered. Complete success was defined as an intraocular pressure (IOP) ranging from 5-19 mmHg, with a minimal reduction of 30% with no medications. Qualified success was defined with the same criteria with and without medications.

Results: Sixteen eyes from 16 patients were submitted to Phaco-CCLASS (n=10) or Phaco-TRAB (n=6). One case of shallow anterior chamber was registered on the Phaco-TRAB group vs. no immediate complications on the Phaco-CCLASS group. On the follow-up, two goniopunctures were required on the Phaco-CCLASS group vs. no needlings on the Phaco-TRAB group. At the 3rd month visit, a mean IOP reduction of 36.9% (vs. 40.1%) with a mean reduction of 2.8 medications (vs. 2.5) were registered on the Phaco-CCLASS group. The complete success rate was 50% on both groups and the qualified success rate 80% (vs. 83%) on the Phaco-CCLASS group.

Conclusions: We present a preliminary study comparing glaucoma and cataract combined surgery using CO2 LASER-assisted sclerectomy vs. trabeculectomy. The preliminary results provide evidence of a similar efficacy profile of both techniques but with no perioperative complications recorded on the Phaco-CCLASS group.