Clinical results of CO₂ Laser Assisted Sclerectomy Surgery (CLASS) and Ologen implant compared to Trabeculectomy and Ologen implant in patients with refractory open-angle glaucoma

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Purpose: To compare outcomes, efficacy and safety of CO₂ Laser Assisted Sclerectomy (CLASS) combined with Phaco and ologen implant versus to Trabeculectomy combined with Phaco and ologen implant in open-angle glaucoma

Methods: This is an analytic retrospective study collected from 88 operated eyes, with 1-year follow-up. We compared the results of two surgical techniques; Phaco combined with Trabeculectomy and Orogen was performed between 2013-2014 and Phaco combined with CO₂ Laser Assisted Sclerectomy (CLASS) with Ologen performed between 2015-2016. We included in the study all patients diagnosed with open-angle glaucoma. We measured the IOP pre-operatively, at 1, 3, 6, 9 months and at 1 year. BCVA and reduction of drugs were also measured pre-operatively, 1, 9 months and at 1 year. Postoperative complication is described in the year of follow-up. Complete success was defined as the decrease in IOP less than 18 mmHg without medication and the qualified success was defined as the decrease in IOP less than 18 mmHg with or without medication at 1 year post-operatively.

Phacoemulsification + CO₂ Laser Assisted Sclerectomy (CLASS)+ Ologen

Results: 47 eyes included in the trabeculectomy group and 37 eyes in the CLASS group. Both groups were followed for 1 year. In the trabeculectomy group, the mean±SD of the pre-op IOP was 19.11±9.30 with decrease at 1 year to 11.91±1.66. The mean ± SD pre BCVA was 0.26±0.45 at 1 year it was 0.39±0.61. The mean ± SD pre-op antiglaucomatous drugs was 3.02±0.7 at 1 year it was 1.47±1.08. Postoperative complications were atheralma 4%, Hemorrhagic Detachment 2%, Choroid Detachment 2%. 5% of the 47 eyes needed another surgery to reduce IOP (Endocyclophotocoagulation or Baerveldt implant). The qualified success rate was 100%, and the complete 30.8% The CLASS group Pre-op IOP mean±SD was 22.73±9.21 and at 1 year was 12.46±2.20. The mean±SD Pre-op BCVA was 0.26±0.31 and at 1 year 0.10±0.18. The mean±SD of Pre-op antiglaucomatous drugs was 3.51±0.76 and at 1 year reduced to 0.51±0.65. The main early postoperative was transient ocular hypertension on 4% of patients, which was treated with acetazolamide orally and was resolved in all cases. At 1 year post operative we had to perform gonipuncture in 18% of the eyes, needling in 12% and iridectomy in 5%. The qualified success rate was 97.2%, and the complete was 53.8%.

Conclusion: Our study demonstrated that CO₂ Laser-Assisted Sclerectomy Surgery (CLASS) is a technique that allows an excellent reduction of IOP and medications as well as maintaining better visual acuity with lower rates of postoperative complications than conventional Trabeculectomy.