

Phaco-ECP vs Phaco alone in Primary angle closure glaucoma - a RCT

Purpose: Comparative evaluation of phacoemulsification (phaco) alone versus phaco combined with endoscopic cyclophotocoagulation (phacoECP) in PACG.

Methods : A prospective randomised clinical trial in which 30 consecutive PACG patients uncontrolled on maximal hypotensive therapy, meeting all inclusion criteria were recruited. Patients were randomized into 2 groups and underwent phacoECP Group 1 or Phaco alone- Group 2. The pre-operative and post-operative intraocular pressure (IOP), angle parameters and visual acuity were recorded at one week, 1 month, 3, 6 and 12 months. Complete success (primary outcome) was defined as IOP \leq 18 mmHg without any additional medications at the last follow up.

Results : The average age of patients was 58.5 \pm 7.29 years and 56.5 \pm 9.17 years in Group 1&2 respectively, p=0.39. Axial length in group 1 was 22.27 \pm 0.61mm and group 2 was 22.63 \pm 0.94mm (p=0.07), ACD in group 1 was 2.49 \pm 0.08mm and group 2 was 2.23 \pm 0.07mm (p=0.01); lens thickness in group 1 was 4.67 \pm 0.06mm and group 2 was 4.51 \pm 0.07mm (p=0.12) and CCT in group 1 was 553.68 \pm 6.42 μ m and group 2 was 530.17 \pm 5.65 μ m (p=0.009).
Lens vault

The mean preoperative IOP was 24.54 \pm 9.61 mmHg and 34.17 \pm 0.91mmHg, which significantly reduced postoperatively IOP to 15.22 \pm 1.787mmHg and 14.46 \pm 1.66 at 12 months (p < 0.05) in Group 1&2 respectively). Significant widening of the angle was noted at 3 months with an increase as compared to baseline values in AOD500 nasally: in Group 1 (0.244 \pm 0.0768mm Vs 0.4023 \pm 0.213mm) and Group 2 (0.22 \pm 0.06mm Vs 0.45 \pm 0.20mm); AOD500 temporally: in Group 1 (0.23 \pm 0.05mm Vs 0.46 \pm 0.19mm) and Group 2 (0.24 \pm 0.08mm Vs 0.46 \pm 0.19mm); TISA500 at nasally: in Group 1 (0.077 \pm 0.02mm Vs 0.107 \pm 0.06 mm) and Group 2 (0.07 \pm 0.02mm Vs 0.15 \pm 0.07mm); TISA500 at temporally: in Group 1 (0.075 \pm 0.026mm Vs 0.099 \pm 0.05mm) and Group 2 (0.068 \pm 0.029mm Vs 0.15 \pm 0.068mm) all p<0.05.

A significant improvement in logMAR BCVA were noted in both the groups post-operatively (p<0.05)– Group 1 (0.27 \pm 0.12 to 0.07 \pm 0.10) and

Group 2 (0.29 ± 0.09 to 0.22 ± 0.16) respectively. There was a significant reduction in the number of ocular hypotensive medications post-operatively – Group 1 (4.17 ± 0.41 to 0.17 ± 0.41 ; $p=0.024$) and Group 2 (4.44 ± 0.53 to 1.11 ± 0.93 ; $p=0.007$) respectively.

Conclusions: Both phaco or phacoECP is associated with a significant reduction in IOP, widening of the anterior chamber angle and a reduced need for ocular hypotensive medications in PACG eyes.