

# Ten-Year Clinical Outcomes of Acute Primary Angle Closure Randomized to Receive Early Phacoemulsification Versus Laser Peripheral Iridotomy

Poemen P Chan (1,2) , Fang Y Tang (1) , Dexter Y Leung (1,3) , Thomas C Lam (1,2) , Nafees Baig (1,4,3) , Clement C Tham (1,2,5)

1 Department of Ophthalmology & Visual Sciences, The Chinese University of Hong Kong.

2 Hong Kong Eye Hospital.

3 Department of Ophthalmology, Hong Kong Sanatorium & Hospital, Hong Kong, Hong Kong SAR.

4 Department of Ophthalmology, Caritas Medical Centre.

5 Department of Ophthalmology and Visual Sciences, Prince of Wales Hospital, Shatin.

**PURPOSE:** To compare the 10-year clinical outcomes of eyes with acute primary angle closure (APAC) randomized to receive either early phacoemulsification or laser peripheral iridotomy (LPI) .

**METHODS:** Sixty-two APAC patients, who underwent either early phacoemulsification (phaco group) or laser peripheral iridotomy (LPI group) in a previous randomized controlled trial, were invited for assessment 10 years after the interventions. The results of the 2 groups were compared.

**RESULTS:** Forty of 62 patients (64.5%; 19 in phaco group and 21 from LPI group) were examined. None of them underwent additional glaucoma procedure but 15 (71.4%) patients in the LPI group received lens extraction before this assessment. The mean follow-up duration was  $10.7 \pm 0.7$  years. The phaco group used less medication ( $0.16 \pm 0.37$  vs.  $0.76 \pm 1.09$  bottle per eye,  $P=0.028$ ) , had less extensive anterior synechiae ( $120.0 \pm 116.12$  vs.  $244.3 \pm 139.8$  degree,  $P=0.010$ ) , and greater mean Shaffer gonioscopy grading ( $1.79 \pm 0.84$  vs.  $1.40 \pm 0.87$ ;  $P=0.021$ ) than the LPI group. Five eyes had persistent intraocular pressure elevation of  $>21$  mm Hg in 2 consecutive visits and 4 eyes had blindness (best-corrected visual acuity worse than 6/60 and/or central visual field of  $<10^\circ$ ).  
**CONCLUSION:** At 10 years, APAC eyes that underwent early phacoemulsification required less medication, less peripheral anterior synechiae, lower incidence of intraocular pressure elevation and a lower incidence of blindness compared with APAC eyes that underwent initial LPI.

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REVIEW by Karl Mercieca

This is an interesting retrospective study based on a previous RCT on the treatment of APAC and the ongoing question of should a PI be done before the phaco.

The paper was chosen because EAGLE so far has told us about short-term outcomes and it is of interest to learn what data are available for longer-term outcomes. EAGLE also did not quite look at APAC but rather

people with PAC and PACG.

The strength of this paper lies in the fact that it assessed the 10-year results of that were recruited in a carefully designed RCT with patients who had undergone a standard protocol of ophthalmological assessment 10 years after initial randomization. The study also took into account the contralateral non-APAC eyes for the overall evaluation of patients' visual impairment.

Weaknesses include the retrospective nature of the second analysis with no outcome analysis being available for intermediate time points was and a presumed variability in management between the original study period and the 10-year visit. The small sample size and significant patient drop-out are another downside with a possible selection bias towards younger and more motivated patients.