

# Clear lens extraction for primary angle closure: how clear are we?

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*Comment on:* Azuara-Blanco A, Burr J, Ramsay C, *et al.* Effectiveness of early lens extraction for the treatment of primary angle-closure glaucoma (EAGLE): a randomised controlled trial. *Lancet* 2016;388:1389-1397.

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Azuara-Blanco *et al.* (1) in their multicentric “EAGLE” study have done a remarkable work in comparing efficacy of clear lens extraction (CLE) *vs.* laser peripheral iridotomy (LPI) in 155 eyes having newly diagnosed primary angle closure (PAC) with ocular hypertension (IOP  $\geq$ 30 mmHg) and 263 eyes with early to moderate primary angle closure glaucoma (PACG). The authors reported better quality of life scores and a mean intraocular pressure lower by 1 mmHg in eyes which underwent CLE as compared to LPI at 36 months follow-up. The conclusion of the study was that CLE has a greater efficacy and is more cost effective as compared to the current standard of care (LPI followed by topical therapy) and should therefore be considered as the first line therapy in management of PAC disease (PAC and PACG).

However, there are several issues which need to be addressed before this conclusion can be adopted as the standard of care:

- (I) The authors have clubbed PAC and PACG together for the study outcomes which do not seem to be appropriate. The outcome of each disease subset should have been separately reported and eyes with PACG further sub-classified into those with early or moderate disease;
- (II) The major drawback of the study is that gonioscopy data is missing for more than 50% of the study subjects. Additionally, it is very surprising to see that there was no significant difference in the degree of angle closure between CLE *vs.* LPI as one would have expected CLE to open the anterior

chamber angle and reduce synechial closure as previously reported in imaging studies (2);

- (III) Another cause for concern is the serious complications such as posterior capsule rupture, vitreous loss, macular hole and corneal oedema reported in the CLE group (1). These complications were reported from some of the best ophthalmic centres of the world when surgery was conducted by experts. Eyes with angle closure disease have multiple surgical risk factors like poorly dilating pupil, shallow anterior chamber and lower corneal endothelial counts making these eyes more prone to complications (3). Poor visual outcomes arising in eyes with 20/20 vision if surgery is done by non-expert surgeons could seriously compromise the quality of life of the patients and raise medico-legal issues;
- (IV) The authors have not reported the loss of near visual acuity. For an emmetropic or myopic phakic patient with good distance vision and functional near vision, the sudden and complete loss of accommodation post CLE can be quite disabling. Hypermetropic patients would be more suitable for CLE and multifocal IOLs may be considered especially in eyes with no optic nerve damage (PAC);
- (V) The current public health systems are not able to cope with the backlog of cataract blindness. By 2020, 21 million people worldwide will be suffering from PACG and more than double that

would be the figure for PAC (4,5). If CLE has to be performed for such a large population, it will overwhelm the health care services.

At this point it would be prudent, to reserve CLE for PAC eyes with ocular hypertension post laser iridotomy especially if the IOP is not controlled on a single topical medication or the patient is not compliant with therapy/ cannot afford therapy or suffers from a drug allergy.

We cannot change our preferred practice patterns with results of one RCT and we require more evidence in support for CLE before it can be adopted as the standard of care for PAC or PACG.

The risk *vs.* benefit ratio has to be carefully weighed before placing CLE on top of the chart in management options of PAC disease. Giving the green light for removal of clear lenses in all eyes with PAC(G) has the potential to cause more harm than benefit, especially in developing countries where manual small incision cataract surgery with a conjunctival incision is the most commonly performed mode of lens removal. In conclusion, one must not forget the primary rule for physicians laid down by Hippocrates—*Primum non nocere* (first do no harm).

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### Footnote

*Conflicts of Interest:* The author has no conflicts of interest to declare.

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