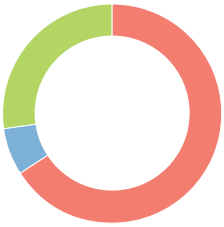
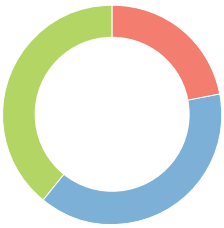
The results* of the last survey

1. Do you prefer hydrophobic or hydrophilic intraocular lenses for routine cataract surgery?



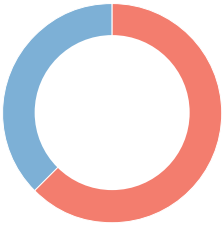
66% Hydrophobic
7% Hydrophilic
27% No preference

2. Do you believe blue blocking IOLs are of benefit to patients?



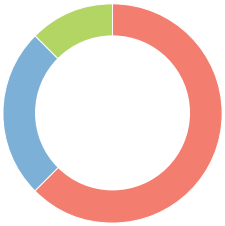
22% Yes
39% No
39% Unsure

3. When undertaking a YAG laser capsulotomy do you make your capsulotomy cruciate or circular?



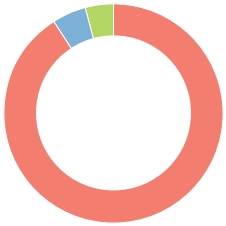
62.5% Cruciate
37.5% Circular

4. When faced with an asymptomatic patient with potentially occludable drainage angles on gonioscopy – grade 1 and 360 degrees / no trabecular meshwork seen – do you recommend YAG laser peripheral iridotomy?



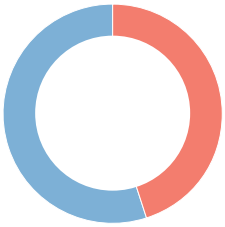
62.5% Yes 25% No 12.5% Unsure

5. When faced with a symptomatic (evening haloes and occasional eye ache) patient with potentially occludable drainage angles on gonioscopy – grade 1 and 360 degrees / no trabecular meshwork seen – do you recommend YAG laser peripheral iridotomy?



91% Yes 5% No 4% Unsure

6. When faced with a 55-year-old patient with narrow angles, patent peripheral iridotomies, no significant cataract and persistently raised IOPs of 28mmHg with early disc compromise, would you recommend drop therapy or lens extraction?



45% Drop therapy 55% Lens extraction and IOL implant

*Please be aware that this data does not form part of a peer reviewed research study. The information therein should not be relied upon for clinical purposes but instead used as a guide for clinical practice and reflection. The sample size for the April 24 survey was: 56 respondents.

When I was in my training and even in my early years as a consultant, I did not fully understand the difference between different lenses. When asked my preference of hydrophilic versus hydrophobic intraocular lenses (IOLs) I really did not have any opinion at all and simply used what my unit used without completely understanding the nature of the lens. It turns out that it was a hydrophobic acrylic IOL and ever since those years I have continued to favour them. Two thirds of you agree that they are your preferred IOL choice with only 7% opting for a hydrophilic and 27% with no preference.

Hydrophobic acrylic IOLs were introduced in 1993, with the most recognisable probably being the AcrySof IOL. They are composed of crosslinked copolymers of acrylic esters and other acrylic ester co-monomers, with a carbon backbone and ester side groups. Single and three-piece lenses can be folded and implanted through small incisions while maintaining their original shape.

Long-term studies have demonstrated that patients implanted with hydrophobic acrylic IOLs have a lower rate of, and less dense, posterior capsule opacification (PCO), and were less likely to require YAG laser capsulotomy than patients implanted with hydrophilic acrylic IOLs [1]. It is thought that this is due to the tendency of hydrophobic acrylic IOLs to adhere to the posterior lens capsule through fibronectin bindings, leading to decreased space for lens epithelial cell migration to occur in between the IOL and posterior capsule [1,2]. Another theory is that the water content of the IOL makes it harder to maintain a true 'sharp' square edge profile. One of the commonly known side-effects of hydrophobic acrylic IOLs are the glistenings that are noticeable [3], however it is still debated as to whether these glistenings have any impact on visual quality [4–6].

Hydrophilic acrylic IOLs are newer and consist of a methacrylate backbone of PMMA with additional hydroxyl groups introduced in the side chains [7]. The addition of hydroxyethylmethacrylate (HEMA), a material used in the manufacturing of contact lenses, poly(2-HEMA), or poly-HEMA allows the IOL to be folded thereby facilitating implantation through modern small incisions [7,8].

Hydrophilic IOLs have a high water content of 18–34%, leading to superior biocompatibility with lower rates of glare, a lower refractive index of 1.40–1.43 and an increased IOL thickness [7]. There are also issues of how quickly the IOL unfolds and surgeon preference.

The next question relates to blue-blocking (yellow) IOLs and whether there is benefit from using them. While all modern IOLs attenuate the transmission of ultra-violet (UV) light, some IOLs, called blue-blocking or blue-light filtering IOLs, also reduce short-wavelength visible light transmission. The basis of the rationale is that cell culture and animal studies suggest that short-wavelength visible light can induce retinal photoxicity and therefore the blue-light filtering IOLs may offer some element of retinal protection and potentially prevent the development and progression of age-related macular degeneration (AMD). A Cochrane Database Systemic review sought to address the evidence base and concluded that, "Based upon current, best-available research evidence, it is unclear whether blue-light filtering IOLs preserve macular health or alter risks associated with the development and progression of AMD, or both. Further research is required to fully understand the effects of blue-light filtering IOLs for providing protection to macular health and function" [9].

So, it seems the jury is out, and you could argue that if it does no harm and even a theoretical benefit it is worthwhile however my practice is not to use such IOLs.

The next question regards technique for YAG laser capsulotomy and finds that two thirds of you undertake a cruciate capsulotomy while one third did a circular one. Up until approximately four years ago I used to undertake a circular capsulotomy. It was highly satisfying seeing the central capsule fall away leaving an immediate clear gap. The problem with this approach is that you are likely to leave the patient with a floater which can be troublesome. If you create a complete circle of free capsule it can roll into a scroll which can be

visually significant. This issue is more prevalent in younger patients who have potentially less syneritic vitreous. When undertaking a cruciate capsulotomy, the edges fold back and retract away without the formation of free capsule remnants.

The next three questions relate to a common clinical scenario. Patients are often referred in with potentially occludable angles and the clinician is faced with a dilemma as to how to manage them. When faced with a patient who is entirely asymptomatic but has clinically occludable angles almost two thirds of you undertake YAG peripheral iridotomies (PIs). This increases dramatically to 91% when the patient is symptomatic. The Royal College of Ophthalmologists released some Clinical guidelines: The Management of Angle-Closure Glaucoma. In primary angle-closure suspects they recommended PI for such patients if they have additional risk factors such as an 'only eye'; a family history of significant angle-closure disease; high hypermetropia; diabetes or another condition necessitating regular pupil dilation; use of antidepressants or medication with an anticholinergic action; and those people either living or working in remote locations (such as foreign aid workers, armed forces stationed overseas or oil rig workers), where accessing emergency ophthalmic care is not possible. Laser PI is not advised for most people who are primary angle-closure suspects without additional risk factors.

The final question addresses a patient who has raised pressures and compromised optic discs and therefore has glaucoma. The 2016 EAGLE randomised control trial has really offered us sound guidance as to how to deal with such patients. It enrolled patients with either primary angle-closure glaucoma (regardless of IOP) or primary angle-closure disease with a IOP >/= 30mmHg and randomised these participants to receive either clear lens phacoemulsification or laser iridotomy. This trial showed that clear lens phacoemulsification was superior to laser iridotomy in terms of metrics of disease control, the economic measures, and patient reported outcomes. Clear lens phaco resulted in better IOP control when compared to laser iridotomy. After three years, IOP was 1mmHg lower in the phaco group but with less medications (the rates of being off medication were 60% vs. 20% in the two groups) and a smaller number of glaucoma surgeries (0.5% vs. 11% in the phaco and laser PI group, respectively). Phaco was cost-effective, showing cost savings in economic modelling. Quality of life remained stable in the phaco group but dropped in the LPI group. More than half of respondents opted for phaco in accordance with this study while 45% elected for drop therapy.

The case I described had already had peripheral iridotomies but what if he had not? One of the issues I face in my medico-legal work is the delay to surgery. If someone is listed for surgery and then develops acute angle-closure with visual loss while they are waiting, is there a breach of duty? How long can we leave these patients to wait? Watch out for the next survey which will ask this precise question.

References

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Our next survey

1. A 55-year-old patient has narrow, potentially occludable angles, no significant cataract, and persistently raised IOPs of 28mmHg with early disc compromise, and normal vision in each eye. How would you initially manage?
   - ❑ Peripheral iridotomy
   - ❑ Drop therapy
   - ❑ List direct for lens extraction / cataract surgery
   - ❑ Peripheral iridotomy and list for lens extraction / cataract surgery
   - ❑ Drop therapy and list for lens extraction / cataract surgery
2. The same patient is listed direct for lens extraction / cataract surgery. He is on a waiting list and has so far waited four months for his surgery. He develops acute angle closure in one eye and his vision is reduced from 6/6 to 6/18 despite treatment. Is there a breach of duty?
   - ❑ Yes ❑ No
3. Was his harm avoidable?
   - ❑ Yes ❑ No
4. Was the delay to surgery too long?
   - ❑ Yes ❑ No
5. If you feel that delays to surgery can be deemed to be a breach of duty, in this scenario (where vision is lost while waiting for clear lens extraction without a PI), what is an acceptable delay to surgery? I.e. Beyond which time is there an argument that the delay was too long and that materially contributed to the visual loss?
   - ❑ Less than 2 weeks ❑ Less than 3 months
   - ❑ Less than 1 month ❑ Less than 4 months
   - ❑ Less than 2 months ❑ Less than 6 months
6. The same patient as described in question 1 had no issues and attends for his surgery three months after listing. His IOP is found to be 38mmHg and his optic disc has gone from a 0.6 cup to a 0.8 cup with a significant reduction in visual field. Is there a breach of duty?
   - ❑ Yes ❑ No
7. If there is likely to be a delay to surgery / lens extraction, do you think a patient should have a peripheral iridotomy?
   - ❑ Yes ❑ No

Complete the next survey online here:
www.eyenews.uk.com/survey
Deadline 1 July 2024

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