The debate over iris/angle-supported phakic intraocular lenses (PIOLs) versus posterior chamber (PC) PIOLs is not as clear-cut as many believe and more data is needed on the latest results, delegates attending the XXXV United Kingdom & Ireland Society of Cataract & Refractive Surgeons (UKISCRS) Annual Congress heard.

Presenting in favour of iris/angle-supported PIOLs, Jan Venter MD, London, said large-scale studies have shown these PIOLs have a far lower incidence of cataracts compared to PC PIOLs like the implantable Collamer lens (ICL).

“The average incidence of cataracts after surgery within 10 years is 25 per cent so that was my main concern with [iCL],” he said.

A major advantage of an iris/angle fixed lens is that it can be examined from end to end under the slit lamp throughout the patient’s life, while a lens inserted into the posterior chamber cannot. Discussing the structures in contact with iris/angle fixed PIOLs, he pointed out the posterior surface of the lens is concave and cannot touch the crystalline lens (0.5mm away), the maximum height optic in the centre is less than 1.0mm, while the haptic of the lens in the periphery is 0.18mm and there is a safe distance from the endothelium (at least 1.5mm). With an iris fixed lens, the vessels of the iris are not fenestrated, they are located in more cellular parts of the stroma and are invested in more cellular adventitia, plus the integrity of vascular supply is maintained, as shown in fluorescein angiographic studies. “There is also no friction between the iris claw and anterior iris surface with an iris fixed lens, and post-mortem studies have shown no sign of inflammation,” he said adding that this can be an issue with PC PIOLs.

Reporting the results of a meta-analysis of cataract development in 6,338 post PIOL surgery eyes (Chen LF; Chang YJ; Kuo IC; Rajagopal R; Azar DT; J Cataract Refract Surg 2008 Jul;34(7):1181 200), Dr Venter said 4.35 per cent were noted to have new onset or pre-existing progressive cataracts. Of these, 1.29 per cent were in the anterior chamber, 1.11 per cent were in iris-fixated, while 9.60 per cent were posterior chamber lenses.

With regards to endothelial cell loss, he said there was very little difference between iris/angle PIOLs and PC PIOLs in follow-up review studies. A European multicentre study (Budo, 2000) showed 9.6 per cent loss at three years, while with PC IOls at five years there was a 12.5 per cent loss (study by Henry F Edelhauser). Dr Venter said he preferred using an iris/angle fixed lens as it has the longest history (dating back to 1986), ‘one size fits all’ in that you can do myopia, hyperopia and astigmatism, it is easy to re-position and is reversible, and also has excellent centration. “The iris claw lens has proven itself for a long time; it has been implanted in more than 240,000 eyes over 25 years. Other lenses must surmount many difficult problems before they can become a serious alternative,” he concluded.

The benefits of PC PIOLs Arguing in favour of PC PIOLs (specifically the ICL version) as the best choice, Bruce Allan MD, FRCS, Moorfields Eye Hospital, London, focused on patient quality of life. “Quality-of-life instruments are not included often enough in trials on refractive surgery. Probably the only outcome that really matters is what the patient feels after treatment,” he told delegates.

Citing the results of a comparison study (Leong A, Rubin GS, Allan BD. Quality of life in high myopia: implantable Collamer lens implantation versus contact lens (CL) wear. Ophthalmology 2009;116(2):275-80), he confirmed the quality-of-life impact of refractive correction scores were significantly higher (P<0.001) in ICL recipients (3.67+/-.450) than in contact lens wearers (4.42+/-.507). However, correcting high myopia, using whatever method, makes a huge difference to patients’ quality of life, he noted.

Promoting the value of systematic reviews, Dr Allan reminded delegates that studies in refractive surgery are dealing with a technology that is constantly in evolution, so they are always going to be behind. “Part of the point of doing a systematic review is to say where the holes in the evidence are,” he said.

The debate about LASIK versus PIOLs isn’t clear-cut and a major trial in the area is needed, Dr Allan suggested. He said that the choice now for a lot of surgeons is between the Cachet lens (an anterior chamber angle-supported, hydrophobic acrylic lens) and the ICL. The take-home message is that studies show the endothelial cell loss from ICL implantation is equivalent to phacoemulsification; about 10 per cent at four years in FDA studies, he stated. The cell loss rates that are published for the Cachet lens to date are relatively good, admitted Dr Allan, but he was sceptical that this will last. He reminded delegates that other anterior chamber lenses did well initially but were taken off the market after sudden crashes in endothelial cell count.

“For me that’s the clinching argument in terms of which PIOL to use,” he said.

Touching on the issue of cataract rates in this cohort, he contended that the problem can often be with the patient and the eye itself (older patients, higher myopia) rather than the actual lens and that newer versions of the ICL have been associated with much lower rates of cataract, with the V4c, featuring centreflow technology, offering particular promise. The V4c ICL aims to maintain normal aqueous circulation with no peripheral iridectomy and this may cut down the risk of cataract formation. Concluding his arguments, Dr Allan said that an ICL doesn’t alter the appearance of the eye, has great refractive range and good safety results.