ECRONICON OPEN ACCESS

OPHTHALMOLOGY
Editorial

IOL- Monofocal to Multifocal

M Hafizur Rahman*

Department of Ophthalmology, Ad-din Medical College, Bangladesh

***Corresponding Author:** M Hafizur Rahman, Department of Ophthalmology, Ad-din Medical College, Bangladesh.

Received: July 02, 2015; **Published:** July 10, 2015

59 years ago when the first IOL was implanted in the human eye, a revolution started in the field of Ophthalmology. Since then we have come a long way in developing newer generation intraocular lenses keeping pace with the development in the cataract surgery procedures like Phacoemulsification.

The current technology for cataract surgery involves the IOL which is either non foldable or foldable. A lot of development has taken palace as per as material and design of the IOL is concerned. This has helped in getting better visual outcomes for the cataract patients. These IOLs used extensively so far have been monofocal IOLs. This implies that the power of the lens inserted in each eye is such that one can see distance without glasses but near addition is required for performing any work at near. This can be incapacitating. A long felt requirement has been for an IOL that can focus on distance as well as near objects. Moreover the common monofocal IOLs are similar to the older natural lens of the eye which fails to compensate for the aberration due to the cornea, a problem not seen in young natural lens. Availability of hydrophobic acrylic square edge IOLs in low and minus power ensure the risk of PCO development in very high myopic patients.

Today there are aspheric IOLs available in the market which resemble the young natural lens of the eye and compensates for the corneal aberration thus leading to sharper, clear vision even in low light conditions. These IOLs demonstrates lower chromatic aberration because of the highest Abbe number scored by its material. The material is devoid of glistening and calcification.

The ease and comfort with single piece IOL is undoubted. This specially designed 360 square edge IOL provides 3 point capsular bag fixation for long term stability and centration. The treated lens surface prevents unwanted adherence of haptic to optic surface of IOL which is sometimes experienced with other similar single piece IOL.

The development of the multifocal IOLs is also a major technological advancement as it has made it possible for cataract patients to have both appropriate distances as well as near vision after cataract surgery. This would help to eliminate the need for glasses or reduce dependence on glasses. The multifocal lens incorporates placing diffractive concentric rings on the optical surface of the lens. These break up light falling on each ring into two parts, one focused for distance vision and other one focused for near vision. Couple with technology that corrects optical imperfections (aberrations) in the eye, which develop with age, the lens gives a superior focus of light on the retina.

Patient selection and counseling for multifocal IOLs is very important. By understanding the life style and requirements of the patient, one can suggest and plan this IOL in elderly persons with a strong reading habit. For a person who has to do frequent night driving, monofocal aspheric is suggested. However in a very small population of cataract patients (5%), the pre-existing structure of eye produces some refractive errors like cylindrical number, which cannot be corrected by only multifocal lenses. Therefore a person may feel more comfortable with the use of the appropriate cylindrical powers occasionally in order to get sharper vision. More recently cylindrical power is incorporated with multifocal lens which provides enhanced image quality and full range of vision-near, distance and everywhere in between. So this technology is essentially spoken to reduced dependence on glasses [1].

These IOLs work in a manner that at any given time when one focus is being used, the other focus becomes so blurred that it becomes imperceptible. Therefore at any given time the brain visualizes only one image either for distance or for near. These newer generation IOLs unfolds a plethora of lifestyle changes.

With these IOLs we hope to make such complaints a history these IOLs would offer a very viable choice to those patients who have been facing such problems in their active, day to day, professional and home life.

Bibliography

1. Bhasin P. "New Generation IOL technologies-Its Benefits to Cataract Patients". Ready Reckoner in Ophthalmology. *All India ophthalmology Society* (2010): 647-648.

Volume 2 Issue 1 July 2015