IOLs in India: How and where they are used

A wide variety of IOL types are now available in India.

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In India, implanting an intraocular lens (IOL) became standard practice for cataract surgery in the late 1990s. The government supported this by providing grants for patients operated on during outreach eye camps.

According to the recent Indian National Blindness & Visual Impairment Survey 2015-2019, the majority (94.3%) of cataract operations were performed using intraocular lenses (IOLs). The ease of access to IOLs seem to have improved the cataract surgical coverage (CSC): at best-corrected visual acuity (BCVA) levels of <3/60, <6/60, and <6/18, the CSC was 93.2%, 89.0%, and 74.0%, respectively.[1]

In the 1990s, monofocal three piece or single piece polymethylmethacrylate (PMMA) IOL or foldable silicone/acrylic IOLs were the standard IOLs available. Since then, advances in IOL technology and rising patient expectations have led to a wide variety of IOL models, with varying visual outcomes and costs.

A wide range of cost-effective, locally manufactured IOLs are available in India, alongside more expensive imported IOLs from other countries. Based on the current data, nearly 30% of patients are operated as a result of outreach camps conducted by government or non-governmental organisations.[2] These patients typically receive MSICS with implantation of single or three-piece PMMA IOLs. These IOLs are locally manufactured, widely available, and and cost around USD 3–4 each.

Walk-in patients at government hospitals usually receive MSICS with a PMMA IOL at no cost. At eye hospitals owned by non-governmental organisations (NGOs), the same procedure costs USD 12–50. In some Indian states, for patients living below the poverty line, operations in government, NGO, or private eye hospitals are reimbursed through the government insurance scheme (Ayushman Bharat). The scheme pays around USD 100 per phacoemulsification operation with a monofocal foldable hydrophobic IOL, or USD 50 for MSICS with a PMMA IOL.

In private hospitals, where patients pay for their own operation, phacoemulsification with a foldable IOL costs around USD 150–250 for locally manufactured monofocal foldable IOLs and more than USD 500 for imported aspheric hydrophobic foldable IOLs. The locally manufactured foldables cost around USD 25–30 while the imported foldables cost USD 80–90.

In our experience, about 85% of patients who have MSICS with rigid PMMA IOL achieve uncorrected Snellen visual acuity (UCVA) of 6/18 or better. Many of them also have reasonable near sight due to some myopic astigmatic error postoperatively. Nearly 25% of these patients have near vision of N8 or better. After phacoemulsification with a foldable IOL, more than 80% of the patients achieve 6/12 or better UCVA for distance, but require spectacle correction for near sight.[3]

Operations using **advanced monofocals** are usually performed for private patients, particularly those with personal health insurance. These IOLs cost around USD 500–600.

While the locally manufactured **toric IOL** cost around USD 70–80, imported ones cost around USD 200–225. About 1–2% of patients end up requiring re-rotation of the IOL postoperatively to achieve optimal results.[3] Toric IOLs are implanted in about 12–20% of paying patients at Aravind.[4]

Multifocal and extended depth-of-focus (EDOF) IOLs cost around USD 500–600. At Aravind, the uptake of multifocal or EDOF IOL surgery is around 5% of paying patients.

Table 1 Intraocular lens (IOL) types commonly used at Aravind Eye Care System

IOL GROUPS	IOL OPTIONS
MONOFOCAL	PMMA
	I- VISION
	AUROFLEX
	AUROVUE
	AUROVUE EV GOLD
	ACRYLIC (Alcon, JNJ, Hoya)
	ASPHERIC (Alcon, JNJ, Hoya)
MONOFOCAL TORIC	AUROVUE TORIC
	ACRYSOF TORIC
	TECNIS TORIC
	HOYA TORIC
Advanced MONOFOCAL	EYHANCE
	CLAREON
	ESSENCE
Advanced MONOFOCAL TORIC	EYHANCE TORIC
	CLAREON TORIC
EDOF	VIVID
	VIVITY
EDOF TORIC	VIVITY TORIC
MULTI FOCAL	AUROVUE DFINE
	SYNERGY
	PANOPTIX
MULTIFOCAL TORIC	EYECRYL TORIC
	SYNERGY TORIC
	PANOPTIX TORIC

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