Technology Guidance

Presbyopia-correcting intraocular lenses

for treating patients with cataract

Technology Guidance from the MOH Medical Technology Advisory Committee

Guidance Recommendations

The Ministry of Health's Medical Technology Advisory Committee has not recommended subsidy for presbyopia-correcting intraocular lenses (IOLs) for the treatment of patients with cataract.

Funding status

Presbyopia-correcting IOLs are not recommended for subsidy in patients with the abovementioned indication.

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Factors considered to inform the recommendations

Technology evaluation

1.1. The MOH Medical Technology Advisory Committee ("the Committee") considered the evidence presented for the technology evaluation of presbyopia-correcting IOLs for the treatment of patients with cataracts. The Agency for Care Effectiveness (ACE) conducted the evaluation in consultation with clinical experts from public healthcare institutions. Published clinical and economic evidence for presbyopia-correcting IOLs was considered in line with its registered indication.

1.2. The evidence was used to inform the Committee's deliberations around five core decision-making criteria:

- Clinical need of patients and nature of the condition;
- Overall benefit of the technology for the patient and/or the system;
- Cost-effectiveness (value for money), which considers the incremental benefit and cost of the technology compared to existing alternatives;
- Estimated annual technology cost and the number of patients likely to benefit from the technology; and
- Organisational feasibility, which covers the potential impact of adopting the technology, especially barriers for diffusion.

1.3. Additional factors, including social and value judgments, may also inform the Committee's deliberations.

Clinical need

2.1. Cataract is characterised by progressive loss of clarity of the natural crystalline ocular lens, leading to gradual loss of vision, reduced contrast sensitivity, and loss of depth perception. Cataract develops with ageing, and its risk factors include diabetes mellitus, smoking, high alcohol intake, excessive UV-B light exposure, and familial history. The prevalence of cataract in Singapore is estimated to be 80% in people over 60 years of age and 95% in those over 70 years of age.

2.2. Symptomatic cataract is treated primarily with surgical IOL implantation. Different IOLs and surgical techniques are considered according to individual patient needs and eye condition. Monofocal IOLs, with or without astigmatism correction, are considered standard of care. This option can usually achieve good distance vision, with an expected post-surgical dependence on eyeglasses for near vision tasks such as reading.

2.3. Presbyopia-correcting IOLs have multiple points of focus to achieve good distance and near vision, and to reduce dependence on eyeglasses. Presbyopia-correcting IOLs

are considered premium implants.

Overall benefit of technology

3.1. The Committee noted that in the treatment of patients with cataracts, the main comparator for presbyopia-correcting IOLs were monofocal IOLs.

3.2. The Committee noted the evidence base comprising five health technology assessment (HTA) reports. Presbyopia-correcting IOLs were found to be safe with no serious adverse events reported. The Committee noted the safety profile of presbyopia-correcting IOLs was comparable to monofocal IOLs. However, glare and halos were significantly more common in patients implanted with presbyopia-correcting IOLs.

3.3. The Committee noted that, compared to monofocal IOLs, presbyopia-correcting IOLs showed similar visual acuity but poorer contrast sensitivity and dysphotopsia (i.e. visual symptoms such as abnormal halos of light). Although there was no difference in dependence on spectacles for distance vision between the two types of IOLs, a lower proportion of patients with presbyopia-correcting IOLs depended on spectacles for near vision when compared to monofocal IOLs.

Cost effectiveness

4.1. The Committee considered the cost-effectiveness of presbyopia-correcting IOLs based on two published, overseas cost-effectiveness analyses. No local cost-effectiveness analysis was identified.

4.2. The Committee found that presbyopia-correcting IOLs showed mixed cost-effectiveness results. Presbyopia-correcting IOLs were mostly dominated (i.e. higher cost, less effective) by monofocal IOLs, or reported incremental cost-effectiveness ratios (ICERs) of up to US$100K per quality-adjusted life year gained. The ICERs were mostly sensitive to the cost of IOLs and proportion of patients requiring visual correction.

4.3. The Committee agreed that presbyopia-correcting IOLs were unlikely to be cost-effective when compared to monofocal IOLs in Singapore, as they had similar clinical benefits but additional costs.

Estimated annual technology cost

5.1. The Committee noted that the estimated annual cost impact to the public healthcare system was less than SG$1 million, based on the projection of about 500 patients with cataract in Singapore who would benefit from subsidised presbyopia-correcting IOLs each year.

Organisational feasibility

6.1. No other organisational feasibility issues were identified.

Additional considerations

7.1. The Committee noted that published HTA reports from Canada (The Canadian Agency for Drugs and Technology in Health) and UK (The National Institute for Health and Care Excellence) concluded against general use of presbyopia-correcting IOLs and suggested that such IOLs should be considered only for carefully selected patients, taking into consideration their clinical conditions, values, and desired outcomes. There are also alternatives to presbyopia correction that do not involve IOLs.

Recommendations

8.1. Based on available evidence, the Committee recommended not subsidising presbyopia-correcting IOLs because they are unlikely to be cost-effective compared to monofocal IOLs (similar clinical benefits but higher cost), and reference agencies recommend against their general use.