Optical Coherence Tomography for the Calculation of Intraocular Lens Power: Clinical and Cost-Effectiveness and Guidelines
References:


Acknowledgments:

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About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada’s health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.
Research Questions

1. What is the clinical effectiveness of optical coherence tomography for the calculation of intraocular lens power prior to cataract surgery?
2. What is the cost-effectiveness of optical coherence tomography for the calculation of intraocular lens power prior to cataract surgery?
3. What are the evidence-based guidelines regarding devices for the calculation of intraocular lens power prior to cataract surgery?

Key Findings

No relevant studies were identified regarding the clinical effectiveness, cost-effectiveness or evidence-based guidelines of optical coherence tomography for the calculation of intraocular lens power prior to cataract surgery.

Methods

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2017, Issue 5), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. Methodological filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic studies and guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2012 and May 31, 2017. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

<table>
<thead>
<tr>
<th>Population</th>
<th>Adult patients undergoing cataract surgery</th>
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<tbody>
<tr>
<td>Intervention</td>
<td>Optical Coherence Tomography (e.g., Carl Zeiss IOLMaster 700, Carl Zeiss IOLMaster 500)</td>
</tr>
<tr>
<td>Comparator</td>
<td>Ophthalmic ultrasound (e.g., Alcon OcuScan RxP)</td>
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<tr>
<td>Outcomes</td>
<td>Clinical effectiveness (ability to determine IOL power to avoid glasses after surgery), cost-effectiveness, guidelines (which device is best for which population)</td>
</tr>
<tr>
<td>Study Designs</td>
<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic evaluations and guidelines</td>
</tr>
</tbody>
</table>
Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, economic evaluations, and evidence-based guidelines.

No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, cost-effectiveness studies, or evidence-based guidelines were identified regarding the clinical effectiveness of optical coherence tomography for the calculation of intraocular lens power prior to cataract surgery.

References of potential interest are provided in the appendix.

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses
No literature identified.

Randomized Controlled Trials
No literature identified.

Non-Randomized Studies
No literature identified.

Economic Evaluations
No literature identified.

Guidelines and Recommendations
No literature identified.
Appendix — Further Information

Randomized controlled trials

Optical partial coherence interferometry versus ultrasound – model of device not specified


Non-Randomized Studies

Optical partial coherence interferometry versus ultrasound


Optical partial coherence interferometry – After laser surgery


Optical partial coherence interferometry – Non-comparative

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