
DATE: 24 November 2014

RESEARCH QUESTIONS

1. What is the clinical effectiveness of corneal collagen cross-linking for patients with keratoconus and other corneal thinning disorders?

2. What is the cost-effectiveness of corneal collagen cross-linking for patients with keratoconus and other corneal thinning disorders?

KEY FINDINGS

One systematic review and meta-analysis, one randomized controlled trial, and 10 non-randomized studies were identified regarding the clinical effectiveness of corneal collagen cross-linking for patients with keratoconus and other corneal thinning disorders. No relevant cost-effectiveness literature was identified.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2014, Issue 11), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2013 and November 19, 2014. Internet links were provided, where available.

SELECTION CRITERIA

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

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Table 1: Selection Criteria

<table>
<thead>
<tr>
<th>Population</th>
<th>Patients with keratoconus and other corneal thinning disorders (e.g., keratectasia, pellucid marginal degeneration)</th>
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<tbody>
<tr>
<td>Intervention</td>
<td>Corneal collagen cross-linking with riboflavin and ultraviolet-A radiation</td>
</tr>
<tr>
<td>Comparator</td>
<td>Alternate treatments for keratoconus, e.g., contact lenses, corneal implants or other surgical interventions, placebo</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Improved vision, improved corneal strength and/or stabilization, corneal thickness, corneal curvature, side effects, cost, cost-effectiveness</td>
</tr>
<tr>
<td>Study Designs</td>
<td>Health technology assessment reports, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic evaluations</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.

One systematic review and meta-analysis, one randomized controlled trial, and 10 non-randomized studies were identified regarding the clinical effectiveness of corneal collagen cross-linking for patients with keratoconus and other corneal thinning disorders. No relevant health technology assessment reports, economic evaluations, or evidence-based guidelines were identified.

Additional references of potential interest are provided in the appendix.

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses


Randomized Controlled Trials


Non-Randomized Studies


Economic Evaluations
No literature identified.
Guidelines and Recommendations
No literature identified.

PREPARED BY:
Canadian Agency for Drugs and Technologies in Health
Tel: 1-866-898-8439
www.cadth.ca
APPENDIX – FURTHER INFORMATION:

Systematic Reviews and Meta-analyses - Unclear Comparator


Guidelines and Recommendations


Additional References