TITLE: Excimer Laser and Stenting in Patients with Distal Peripheral Arterial Disease: Clinical Effectiveness, Safety, and Guidelines

DATE: 05 January 2015

RESEARCH QUESTIONS

1. What is the clinical effectiveness of, and safety regarding, the use of an excimer laser and stenting in adult patients with distal peripheral arterial disease?

2. What are the evidence-based guidelines regarding the use of excimer laser and stenting in adult patients with distal peripheral arterial disease?

KEY FINDINGS

One systematic review and seven non-randomized studies were identified regarding the clinical effectiveness of, and safety regarding, the use of an excimer laser and stenting in adult patients with distal peripheral arterial disease.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2014, Issue 12), 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, 2004 and December 17, 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.

Disclaimer: The Rapid Response Service is an information service for those involved in planning and providing health care in Canada. Rapid responses are based on a limited literature search and are not comprehensive, systematic reviews. The intent is to provide a list of sources of the best evidence on the topic that CADTH could identify using all reasonable efforts within the time allowed. Rapid responses should be considered along with other types of information and health care considerations. The information included in this response is not intended to replace professional medical advice, nor should it be construed as a recommendation for or against the use of a particular health technology. Readers are also cautioned that a lack of good quality evidence does not necessarily mean a lack of effectiveness particularly in the case of new and emerging health technologies, for which little information can be found, but which may in future prove to be effective. While CADTH has taken care in the preparation of the report to ensure that its contents are accurate, complete and up to date, CADTH does not make any guarantee to that effect. CADTH is not liable for any loss or damages resulting from use of the information in the report.

Copyright: This report contains CADTH copyright material and may contain material in which a third party owns copyright. This report may be used for the purposes of research or private study only. It may not be copied, posted on a web site, redistributed by email or stored on an electronic system without the prior written permission of CADTH or applicable copyright owner.

Links: This report may contain links to other information available on the websites of third parties on the Internet. CADTH does not have control over the content of such sites. Use of third party sites is governed by the owners’ own terms and conditions.
Table 1: Selection Criteria

<table>
<thead>
<tr>
<th>Population</th>
<th>Adult patients with distal peripheral arterial disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>Excimer laser and stents</td>
</tr>
<tr>
<td>Comparator</td>
<td>Angioplasty and stenting by an interventional radiologist (standard intervention) None</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Clinical effectiveness (including, but not limited to, restenosis rates and clinical benefits) Safety (harms) Guidelines</td>
</tr>
<tr>
<td>Study Designs</td>
<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized, evidence-based 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, and evidence-based guidelines.

One systematic review and seven non-randomized studies were identified regarding the clinical effectiveness of, and safety regarding, the use of an excimer laser and stenting in adult patients with distal peripheral arterial disease. No health technology assessments, meta-analyses, or randomized controlled trials were identified. In addition, no evidence-based guidelines were identified regarding excimer lasers and stenting in adult patients with distal peripheral arterial disease.

Additional references of potential interest are provided in the appendix.

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses


Randomized Controlled Trials
No literature identified.

Non-Randomized Studies


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:

Health Technology Assessments – Not Specific to Distal Peripheral Arterial Disease


Randomized Controlled Trials - Peripheral Arterial Disease (Femoropopliteal Arteries or Superficial Femoral Arteries)


Non-Randomized Studies – Peripheral Arterial Disease (Femoropopliteal Arteries, Superficial Femoral Arteries, or Iliac Artery)


adjunctive balloon angioplasty and heparin-coated self-expanding stent grafts for the
treatment of femoropopliteal artery in-stent restenosis: twelve-month results from the
PubMed: PM22422738

17. Yeo KK, Malik U, Laird JR. Outcomes following treatment of femoropopliteal in-stent
PubMed: PM21567880

recanalization of femoropopliteal lesions and 1-year patency: results of the CELLO
PubMed: PM19995111

transpopliteal recanalization of chronic superficial femoral artery occlusion after failed re-
PubMed: PM19842727

significance of distal embolization during percutaneous interventions involving the
PubMed: PM18154991

experience with directed laser atherectomy using the CLiRpath photoablation atherectomy
system and bias sheath in superficial femoral artery lesions. J Endovasc Ther. 2007
PubMed: PM17723018

22. Stoner MC, deFreitas DJ, Phade SV, Parker FM, Bogey WM, Powell S. Mid-term results
PubMed: PM17600661

Percutaneous laser-assisted recanalization of long chronic iliac artery occlusions: primary
PubMed: PM15830197

Guidelines and Recommendations – Not Specific to Distal Arteries

24. Lower limb peripheral arterial disease: diagnosis and management [Internet]. London:
National Institute for Health and Clinical Excellence (NICE); 2012. [cited 2014 Dec 23].
(NICE Clinical Guideline 147). Available from:
Review Articles – Limited to Articles Published 2009 to Present


Specific to Femoropopliteal Arteries


Specific to Infrainguinal Arteries


Additional References


