TITLE: Intervertebral Disc Biacuplasty for Back Pain: Clinical and Cost-Effectiveness

DATE: 25 July 2011

RESEARCH QUESTIONS

1. What is the clinical effectiveness of performing intervertebral disc biacuplasty for the treatment of back pain?

2. What is the cost-effectiveness of performing intervertebral disc biacuplasty for the treatment of back pain?

KEY MESSAGE

The findings of the identified studies were inconsistent; therefore, no conclusions regarding the effectiveness of intervertebral disc biacuplasty for back pain can be made. No literature was identified regarding the cost-effectiveness of performing intervertebral disc biacuplasty for back pain.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2011, Issue 6), 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 October 1, 2008 and July 8, 2011. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.
This Rapid Response report is an update to a previous report prepared by CADTH in October 2008 that can be found at: http://www.cadth.ca/media/pdf/htis/Intervertebral%20Disc%20Biacuplasty%20for%20Back%20Pain%20Clinical%20and%20Cost-Effectiveness.pdf.

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 (RCTs), non-randomized studies, and economic evaluations.

The literature search identified two systematic reviews, one randomized controlled trial, and two non-randomized studies. No relevant health technology assessments, meta-analyses, or economic evaluations were identified. Additional literature that may be of interest is located in the appendix.

OVERALL SUMMARY OF FINDINGS

Two systematic reviews were identified regarding the use of thermal annular procedures to treat low back pain. The first systematic review evaluated the effectiveness of thermal annular procedures in reducing low back pain in patients with intradiscal disorders. The review included RCTs and observational studies. One pilot study was identified in the systematic review of intervertebral disc biacuplasty. The authors felt there was minimal evidence supporting the use of intervertebral disc biacuplasty and could make no clear conclusion regarding its effectiveness in reducing low back pain. The second systematic review assessed the benefits and harms of non-surgical interventional therapies for low back and radicular pain. Searches were conducted to identify RCTs and systematic reviews for various non-surgical interventional therapies for low back and radicular pain. The authors found evidence that percutaneous intradiscal radiofrequency thermocoagulation is not an effective treatment for low back pain.

One RCT was identified assessing the long-term effect and safety of percutaneous intradiscal radiofrequency thermocoagulation (PIRFT) with the discTRODE probe in patients with chronic low back pain. The primary endpoint, change in pain intensity, did not show any difference between active and sham treatments after 6 months. After 12 months, there was an overall statistically significant reduction from baseline pain; however, no difference was seen between active and sham patient groups. The authors found no evidence for a benefit PIRFT treatment in low back pain and therefore, did not recommend intra-annular thermal therapy with the discTRODE probe.

Two non-randomized studies were identified regarding the effectiveness of biacuplasty for back pain. The first non-randomized study investigated the efficacy and safety of TransDiscal Biacuplasty for patients with chronic discogenic pain. The authors concluded that TransDiscal Biacuplasty is an effective and safe method to treat low back pain based on patient improvement in their visual analogue and Oswestry Disability scores compared to the initial values. The second non-randomized study conducted a prospective audit of outcomes in eight patients with chronic back pain. Clinical assessments occurred before treatment and at one, two, three, and six months after treatment. The only statistically significant improvement was in group pain scores at the one month margin; pain scores increased again by 3 months and remained constant until 6 months. The authors did not make any clear conclusions.
REFERENCES SUMMARIZED

Systematic Reviews and Meta-analyses


Randomized Controlled Trials


Non-Randomized Studies


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APPENDIX – FURTHER INFORMATION:

Case studies


Review articles


Additional references

