HEALTH EVIDENCE REVIEW COMMISSION (HERC)

COVERAGE GUIDANCE: LUMBAR DISCOGRAPHY

Initial HERC approval 08/09/2012
Reaffirmed 11/13/2014

This coverage guidance was created under HERC's 2012 coverage guidance process and does not include strength of recommendation, a GRADE-informed framework or coverage guidance development framework.

As a part of the normal evidence review process, the Health Technology Assessment Subcommittee reviewed new evidence in September, 2014 (see Appendix A) and one review and one protocol were identified in the trusted sources. They determined that this guidance is supported by the updated literature scan. However, the guidance's recommendation language has been altered to be consistent with that of more recent guidances.

HERC Coverage Guidance

Lumbar discography is not recommended for coverage for patients with low back pain and uncomplicated lumbar degenerative disc disease.

RATIONALE FOR GUIDANCE DEVELOPMENT

The HERC selects topics for guideline development or technology assessment based on the following principles:

- Represents a significant burden of disease
- Represents important uncertainty with regard to efficacy or harms
- Represents important variation or controversy in clinical care
- Represents high costs, significant economic impact
- Topic is of high public interest

Coverage guidance development follows to translate the evidence review to a policy decision. Coverage guidance may be based on an evidence-based guideline developed by the Evidence-based Guideline Subcommittee or a health technology assessment developed by the Heath Technology Assessment Subcommittee. In addition, coverage guidance may utilize an existing evidence report produced by one of HERC's trusted sources, generally within the last three years.

EVIDENCE SOURCES

Washington State Health Care Authority Health Technology Assessment Program. (2007). *Spinal fusion and discography for chronic low back pain and uncomplicated lumbar degenerative disc disease.* Olympia, WA: Health Technology Assessment Program. Retrieved from http://www.hta.hca.wa.gov/discography.html

The summary of evidence in this document is derived directly from this evidence source, and portions are extracted verbatim.

SUMMARY OF EVIDENCE

Clinical background

Low back pain was the most common cause of disability in persons younger than 45 in the U.S. in 2005. It causes the most loss of productivity of any medical condition. In the U.S., an estimated range of 8-56% of the population experiences lower back pain every year, and the lifetime incidence rate is reportedly between 65% and 80%. 2.4 million people are disabled because of low back pain, 1.2 million of them chronically. Most patients improve within weeks; only 5-10% of people with low back pain develop chronic back pain.

The degeneration of intervertebral discs can be associated with back pain and sciatica. Discs at any level can degenerate and cause pain, but this most often occurs at cervical and lumbar levels. Typical imaging findings suggestive of discogenic pain include disc space collapse, endplate sclerosis, vacuum disc phenomenon on plain films and dehydration, high intensity zones and endplate edema on MRI.

Chronic low back pain with degenerative disc disease is typically managed conservatively for at least six months before surgery is considered. When conservative treatments fail, discectomy and/or spinal fusion may be considered. The role of discography in selection of patients as surgical candidates is controversial. Discography is a diagnostic procedure in which contrast material is injected into the nucleus pulposus of a lumbar disc. The general intent is to determine whether the disc itself is the source of pain. This diagnostic test has been used to justify the need for surgical intervention involving discectomy and lumbar fusion.

Discography yields two types of results: pain provocation (whether the patient's typical pain was reproduced by the injection), and morphology (whether the dye images an abnormal pattern in the disc, often based on CT scan). Controversy exists about the relative importance of these two test results. One major concern about discography is the rate of false positive results (reportedly 25% using the most stringent criteria).

EVIDENCE REVIEW

The evidence is insufficient to permit conclusions about the reliability of discography for patients with chronic low back pain and uncomplicated lumbar degenerative disc disease[1]. Two studies reported on test-retest reliability and inter-rater reliability, specifically, whether a given discogram is judged to have the same morphology grade by the same reader at different times (i.e., test-retest) or by different readers (i.e., inter- rater). Notably, neither study performed two discography exams on the same disc to determine whether the results were consistent between discography injections. Also, neither study investigated the reliability of patients' reports of pain provocation or similarity to their typical pain.

Because of low quality and heterogeneous results from three studies (n = 330 patients), the evidence was insufficient to permit conclusions about the use of discography to predict fusion outcomes in patients with chronic low back pain and uncomplicated lumbar degenerative disc disease. All three studies used a different definition of a positive discography test, assessed different surgical outcomes and had qualitatively different results (one found no difference between groups, one did, and the third had insufficient numbers to detect a significant difference).

The evidence was insufficient to permit conclusions about how fusion outcomes compare in patients who do or do not receive discography (no evidence of acceptable quality was identified).

Overall summary

The evidence is insufficient to permit conclusions about the reliability of discography or its ability to predict outcomes in patients with chronic low back pain and uncomplicated lumbar degenerative disc disease who are candidates for spinal fusion.

Procedure

Discography

Diagnoses

Degenerative disc disease

[1] For a study to be included in this evidence report, at least 80% of the patients could not have any of the following medical conditions: radiculopathy, functional neurologic deficits (motor weakness or EMG findings of radiculopathy), spondylolisthesis (>Grade 1), isthmic spondylolysis, primary neurogenic claudication associated with stenosis, fracture, tumor, infection, inflammatory disease, degenerative disease associated with significant deformity.

APPLICABLE CODES

CODES	DESCRIPTION
ICD-9 Diagnosis Codes	
722.5	Degeneration of thoracic or lumbar intervertebral disc
722.6	Degeneration of intervertebral disc, site unspecified
722.70	Intervertebral disc disorder with myelopathy, unspecified region
722.73	Intervertebral disc disorder with myelopathy, lumbar region
722.90	Other and unspecified disc disorder, unspecified region
722.93	Other and unspecified disc disorder, lumbar region
CD-9 Volume 3 (Procedure Codes)	
87.21	Contrast myelogram
CPT Codes	
62290	Injection procedure for discography, each level; lumbar
72295	Discography, lumbar, radiological supervision and interpretation
HCPCS Level II Codes	
None	

Note: Inclusion on this list does not guarantee coverage

APPENDIX A

Scanning results

One review and one protocol were identified in the core sources that were published after the date of the WA HTA report. Summary results and/or conclusions are presented below.

Hayes. (2010). *Discography for diagnosis of low back pain*. Lansdale, PA: Hayes.

Authors' conclusions

The available evidence indicates that lumbar discography can result in high false-positive rates in identifying pain-producing discs, although pressure-controlled injection and strict classification of results can reduce the false-positive rate to ≤ 10%. When surgical outcome was used as the reference standard, some studies found a high degree of correlation between discography findings and degree of pain relief following surgery, while others failed to find any contribution of discography to surgical outcome. Inconsistencies among studies may relate to the variable results of these surgical approaches and/or to differences in discography protocol. In the only study comparing discography with an alternate diagnostic approach, outcome after spinal fusion was worse in patients undergoing discography than in patients undergoing discoblock (intradiscal anesthesia) but the source of pain differed in the discography and discoblock

groups. Therefore, available data do not clearly establish the efficacy of lumbar discography or the comparable value of lumbar discography relative to other

methods in identifying the source of low back pain or determining surgical candidacy and do not clarify whether a positive discogram is sufficient to warrant surgery, particularly when using updated standards for defining positive discograms. Data do suggest that lumbar discography, as currently performed, is not commonly associated with serious adverse effects.

Based on available data, the following Hayes Ratings are assigned:

C – For lumbar discography using pressure-controlled injection and updated criteria for positive discograms in patients with chronic severe low back pain who are potential candidates for spinal surgery, when conservative care has failed, and other diagnostic tests have not clearly confirmed a suspected disc as the source of pain.

D – For lumbar discography in patients who have a contraindication to the procedure. This Rating reflects concerns regarding the safety of this procedure in these patients.

Chou, R., Qaseem, A., Snow, V., Casey, D., Cross, J. T., Shekelle, P., et al. (2007). Diagnosis and treatment of low back pain: a joint clinical practice guideline from the American College of Physicians and the American Pain Society. Annals of internal medicine, 147(7), 478-491. Retrieved from http://www.annals.org/content/147/7/478.long

This guideline is in the process of being updated, with an anticipated publication date in 2015.

Summary

The recently published evidence does not contradict the current coverage guidance recommendations.