

Is Your Back Pain Caused by Herniated Disc? Single Test Can't Tell

February 17 2010, By Patricia McAdams

While lower back pain ranks as a common cause of disability in the United States, determining what causes a person's back pain is often challenging. A new Cochrane review on diagnosing back pain finds that no single diagnostic test is good at discriminating between patients who have a herniated disc and patients who do not, according to lead author Danielle van der Windt.

Having accurate diagnostic information is important for clinicians to discuss the potential cause of [pain](#) with patients and make better decisions about pain management, said Van der Windt, an epidemiologist at the Arthritis Research Campaign at the National Primary Care Centre at Keele University in Staffordshire, England.

“The straight leg-raising test, for example, is often used in clinical practice, but results are positive in many individuals who do not have a disc herniation, or negative in those who do,” Van der Windt said. “Clinicians need a combination of questions about the patient's history and diagnostic tests that can help them reassure patients or inform them about the next step in the process.

“The consequences of inadequate testing can certainly be that patients may be unnecessarily referred for imaging studies (CT, MRI or other scan), or patients who should be scanned are referred too late or not at all,” she said. “This means that there may be some people who could have benefited from early surgery, though this proportion will be small, given that many patients respond well to conservative treatment.”

This review appears in the current issue of The Cochrane Library, a publication of The Cochrane Collaboration, an international organization that evaluates research in all aspects of health care. Systematic reviews draw evidence-based conclusions about medical practice after considering both the content and quality of existing trials on a topic.

Healthy discs are spongy cushions of cartilage that fill the spaces between vertebrae in the spine. They act as shock absorbers for the spine and allow flexibility. A herniated disc can occur when a disc incurs damage because of trauma or stress and bulges outside of its normal position to press on a nerve. This can result in pain that radiates down to the lower leg — also called sciatica.

In other conditions, including osteoporosis and similar aging disorders, bony structures could press on nerves, causing this pain.

Van der Windt and her colleagues throughout Europe, New Zealand and North America conducted an extensive search of the evidence. Ultimately, the team focused on 19 studies that included about 8,000 participants.

Even so, Van der Windt said she was disappointed at the lack of good research. Many of the biggest studies date back to the 1960s and 1970s. Moreover, while being able to diagnose a herniated disc is desirable at a patient's first contact with a clinician, only a single study occurred in a primary care setting. Almost all study participants were surgical patients.

“We want to know a lot more about how to diagnose a herniated disc as early as possible,” she said. “We need to have studies of patients visiting their primary care practitioners, rather than patients who have already been through many tests and processes.”

A study from the Netherlands pops out as among the most useful in this

review, Van der Windt said. This was the only investigation conducted in a primary care setting. Researchers asked patients many questions about their pain and did an extensive physical exam. Then all patients received an MRI scan. A radiologist, who was unaware of the results of the physical exam, read the scan.

“Based on their investigation, this group determined the set of questions and tests that best identified patients with a herniated disc,” said Van der Windt.

“The Dutch study had a good design, but it dates back to 2002 and includes only 300 people. We really need more of these studies to make sure that this series of tests and questions is the one to go for, and helps clinicians when making decisions in the management of back pain,” she said.

Lawrence Kurz M.D., an orthopedic spinal surgeon at Beaumont Hospital in Royal Oak, Mich., agreed with the results of this review: No one test is specific and sensitive enough to be used as the sole guide for making an accurate diagnosis of disc herniation as the cause of sciatica.

“The financial ramifications of these findings are astounding,” he said. “Theoretical health care cost-cutting proposals, which would restrict diagnostic MRI scans to being performed only on patients with a single positive physical examination test, will fail miserably in cutting costs.”

More information: Van der Windt DAWM, et al. Physical examination for lumbar radiculopathy due to disc herniation in patients with low-back pain. Cochrane Database of Systematic Reviews 2010, Issue 2.

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