

Costly diagnostic MRI tests unnecessary for many back pain patients

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(Medical Xpress) -- Johns Hopkins-led research suggests that routine MRI imaging does nothing to improve the treatment of patients who need injections of steroids into their spinal columns to relieve pain. Moreover, MRI plays only a small role in a doctor's decision to give these epidural steroid injections (ESIs), the most common procedure performed at pain clinics in the United States.

With greater focus on runaway health care costs, the study's findings, appearing online in the *Archives of Internal Medicine*, highlight one element of the problem: the indiscriminate use of an expensive imaging tool that shows little clinical benefit.

"Our results suggest that MRI is unlikely to avert a procedure, diminish complications or improve outcomes," says study leader Steven P. Cohen, M.D., an associate professor of anesthesiology and critical care medicine at the Johns Hopkins University School of Medicine. "Considering how frequently these epidural injections are performed, not routinely ordering an MRI before giving one may save significant time and resources."

Cohen adds that, "if we're trying to cut back on unnecessary medical costs, we should stop routinely doing MRIs on almost everyone who comes to us needing ESIs." A single MRI costs roughly \$1,500.

The [patients](#) in Cohen's study were all treated at one of several pain clinics in the [United States](#) for sciatica, a condition in which the roots of

the sciatic nerve that branches out from the bottom of the spinal column is pinched or compressed, causing severe pain and tingling in the lower back that shoots down the leg. The most common treatment in the United States and worldwide is an epidural steroid injection, which puts cortisone directly into the outermost part of the spinal canal in the lower back, delivering its anti-inflammatory benefits as close as possible to the source of pain.

Cohen and his colleagues treated 132 patients split into two groups. Both groups received MRIs, but the treating doctor only reviewed the films in one group. The first group received epidural [steroids](#) with the placement of the needle based solely on a physical exam and how and where the patient described his or her pain. The doctors who examined these patients did not review the MRI before giving the injections, but a physician not involved in the exams or treatments later did. In the second group, physicians determined treatment based on both an examination and imaging results, looking at the MRI to determine where to place the needle and whether to give an injection at all.

After three months, researchers reported no difference in how patients in both groups said they felt. In the group whose doctors didn't see the MRI, 23 (35 percent) reported "overall success" after three months. In the group whose doctors saw the MRI results before administering an injection, 24 (41%) reported a positive outcome.

In the first group, whose doctors were not privy to the MRI results, the independent evaluator agreed with the treating doctor in 66 percent of patients. In 18 of the other 22 cases, the independent evaluator believed an ESI was warranted, only in a different location along the bottom of the spine. Cohen says this discrepancy probably didn't change the outcome because research has shown that the steroid medication reaches across many levels as long as it is injected in the general vicinity. In every case, the doctor opted for some type of injection.

In the second group, the treating doctor — who had the benefit of seeing the MRI results — decided not to perform an epidural steroid injection in only five cases, only to have three of those patients get an ESI within the following six months anyway.

All in all, Cohen says, the treatment barely varied whether or not MRI was used to guide decision-making.

Cohen says that part of the problem in using MRI to diagnose lower back pain is that there is not a good correlation between abnormal findings and symptoms.

“If you look at 100 middle-aged people who have never had back pain, two-thirds of them would have abnormalities on MRI,” he says. “This makes it difficult to use imaging to guide injections.”

People who complain about back and leg pain but have a normal finding on an MRI — and who go on to get an ESI anyway — may not get relief because the pain may have originated somewhere besides the spine. Patients with abnormal MRIs who get ESI also may not receive benefit because their abnormal findings have nothing to do with their [pain](#). In these cases, the abnormal findings are what doctors call a “red herring”.

Overall, Cohen emphasizes, ESIs are not a magic bullet. Many studies affirm that they provide only short-term benefit to only a subset of people who get them.

Other Hopkins researchers involved with this study include Paul J. Christo, M.D., M.B.A.; Michael A. Erdek, M.D.; and David Cornblath, M.D.

Provided by Johns Hopkins University

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