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Need steroids? Maybe not for lower back pain: Analysis suggests saline shots may do just as well

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New research from Johns Hopkins suggests that it may not be the steroids in spinal shots that provide relief from lower back pain, but the mere introduction of any of a number of fluids, such as anesthetics and saline, to the space around the spinal cord.

For decades, epidural steroid injections have been the most common nonsurgical treatment for lower back pain even though extensive research shows mixed results. Placebo-controlled studies have found benefit only 60 percent of the time and it remains unclear whether the epidural steroids provide long-term pain control or reduce the need for surgery. Meanwhile, experts warn, steroids are a less-than-ideal treatment for some as they can raise blood sugar in diabetic back patients, slow wound healing in those who need surgery and accelerate bone disease in older women.

In a bid to lend some clarity, Johns Hopkins anesthesiologist Steven P. Cohen, M.D., and his colleagues reviewed dozens of published studies on the subject. As expected, they found that epidural steroid shots were more than twice as likely to bring relief as injections of steroids, saline or a local anesthetic like Lidocaine into muscle near the spinal canal. What was less expected, they report in the October issue of the journal *Anesthesiology*, was that epidural injections of any kind were also twice as good as intramuscular injections of steroids.

"Just injecting liquid into the epidural space appears to work," says Cohen, a professor of anesthesiology and critical care medicine at the Johns Hopkins University School of Medicine. "This shows us that most of the relief may not be from the steroid, which everyone worries about."

Cohen says concerns increased in 2012 when more than 740 people in 20 states became ill with fungal meningitis and 55 people died after getting epidural injections of contaminated steroids made by a compounding pharmacy. Although better oversight might allay that concern, Cohen notes that patients can only get a limited number of steroid injections each year, even if their pain returns.

Cohen and Mark C. Bicket, M.D., an anesthesiology and critical care medicine chief resident at The Johns Hopkins Hospital, say it is too soon to recommend that patients stop receiving epidural steroids, but add that their analysis also suggests that smaller steroid doses can be just as beneficial. Larger studies are needed, they say, to determine whether steroid alternatives can be just as helpful for back pain patients.

"Our evidence does support the notion that, for now, reducing the amount of steroids for patients at risk may be advisable," says Bicket, the study's first author.

Spinal pain is a leading cause of disability in the industrialized world, with lifetime prevalence for lower back pain ranging from 50 to 80 percent. Epidural steroid injections have been the standard treatment for debilitating back pain for over 50 years.

The Johns Hopkins review covered medical records of 3,641 patients from 43 studies conducted through October 2012. The studies compared epidural steroid injections to other sorts of epidural and intramuscular injections.

Cohen says his new analysis suggests that decades of mixed results of research on epidural steroid injections may have been due to the use of saline or anesthetic injections as the comparison "placebo" treatment. "It's likely that those studies were actually comparing two treatments, rather than placebo versus treatment," he says. "Researchers may be wasting millions of dollars and precious time on such studies."

Charlie H. Brown IV, M.D., and Anita Gupta, D.O., of Johns Hopkins also contributed to this research.

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