

Noninvasive procedure is superior to steroid injection for painful knee osteoarthritis

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For patients with osteoarthritis of the knee, a minimally invasive procedure called cooled radiofrequency ablation (CRFA) provides better pain reduction and functional improvement compared to steroid injection of the knee, concludes a study in *Regional Anesthesia & Pain Medicine*.

"This study demonstrates that CRFA is an effective long-term therapeutic option for managing pain, and improving physical function and quality of life, for [patients](#) suffering from painful [knee](#) osteoarthritis when compared with intra-articular [steroid injection](#)," according to the clinical trial report by Leonardo Kapural, MD, PhD, of the Center for Clinical Research, Winston-Salem, N.C., and colleagues.

Most Patients Get Lasting Relief of Knee Osteoarthritis Pain with CRFA

Knee osteoarthritis is a common and painful condition in older adults. Knee replacement surgery is an established option for patients with advanced osteoarthritis, but is not appropriate for all patients because of age or health status. Even patients who have knee replacement may have ongoing pain, despite a mechanically satisfactory prosthesis. Intra-articular (within the joint) steroid injection is commonly performed, but provides only short-term pain relief. In addition, steroids may have adverse effects on cartilage over time

Dr. Kapural and colleagues evaluated CRFA as an alternative to steroid injection in 151 patients with chronic pain from knee osteoarthritis. The patients had had [knee pain](#) for an average of about ten years, with many previous treatments. They were randomly assigned to undergo CRFA or steroid injection.

The noninvasive CRFA procedure uses radiofrequency energy to interrupt pain transmission by a specific nerve (genicular nerve) of the knee. Before the procedure, a local anesthetic nerve block is performed to confirm that numbing the genicular nerve reduces the patient's knee pain. Cooled radiofrequency ablation is performed on an outpatient basis, with local anesthesia and minimal sedation.

Patients undergoing CRFA had significant and lasting reduction in pain scores. From an initial pain score of about 7 on a 10-point scale, pain ratings at one month were about 3 in the CRFA group versus 4 in the steroid group.

With further follow-up, pain scores remained lower in the CRFA group while increasing toward the pre-treatment level in the steroid group. At six months, 74 percent of patients assigned to CRFA had at least a one-half reduction in [pain scores](#), compared to 16 percent of those undergoing steroid injection.

Forty percent of patients in the CRFA group rated their knee function "satisfactory" at six months' follow-up, compared to just three percent of the steroid group. Ninety-one percent of the CRFA group felt their overall health had improved, compared to 24 percent in the steroid group.

Patients undergoing CRFA had greater reduction in the use of conventional, non-opioid pain medications. There was no significant difference in opioids, which were used by a minority of patients in both groups. There were no serious treatment-related adverse events in either group.

The results suggest that CRFA provides "clinically meaningful" pain reduction and functional improvement in patients with knee OA, with better and longer-lasting improvement than steroid

injection. Dr. Kapural and colleagues plan longer follow-up to assess outcomes at one year and beyond. They note that pain may return as the treated nerve regenerates; if so, repeating the CRFA procedure is a "reasonable and sensible" option.

The authors note some limitations of their study, including the fact that the results weren't assessed in "blinded" fashion. They also suggest more focused studies to see if CRFA can reduce the need for opioid pain medications. Dr. Kapural and coauthors conclude, "Nonetheless, the findings of this study indicate that CRFA for genicular nerve ablation is superior to a single corticosteroid [injection](#) in osteoarthritic subjects for management of knee [pain](#)."

More information: Tim Davis et al. Prospective, Multicenter, Randomized, Crossover Clinical Trial Comparing the Safety and Effectiveness of Cooled Radiofrequency Ablation With Corticosteroid Injection in the Management of Knee Pain From Osteoarthritis, *Regional Anesthesia and Pain Medicine* (2017). [DOI: 10.1097/AAP.0000000000000690](#)

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