NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Interventional procedures consultation document

Radiofrequency denervation for osteoarthritic knee pain

Osteoarthritis can develop in the knee when cartilage covering the ends of the bones becomes worn. This can cause pain and difficulty walking. In this procedure, a needle and probe are used to apply heat (radiofrequency) energy to damage the nerves (denervation) in the knee. The aim is to reduce pain, improve joint function, and delay knee replacement.

NICE is looking at radiofrequency denervation for osteoarthritic knee pain.

NICE's interventional procedures advisory committee met to consider the evidence and the opinions of professional experts with knowledge of the procedure.

This document contains the draft guidance for consultation. Your views are welcome, particularly:

- comments on the draft recommendations
- information about factual inaccuracies
- additional relevant evidence, with references if possible.

NICE is committed to promoting equality of opportunity, eliminating unlawful discrimination and fostering good relations between people with particular protected characteristics and others.

This is not NICE's final guidance on this procedure. The draft guidance may change after this consultation.

After consultation ends, the committee will:

- meet again to consider the consultation comments, review the evidence and make appropriate changes to the draft guidance
- prepare a second draft, which will go through a resolution process before the final guidance is agreed.

Please note that we reserve the right to summarise and edit comments received during consultation or not to publish them at all if, in the reasonable opinion of NICE, there are a lot of comments or if publishing the comments would be unlawful or otherwise inappropriate.

Closing date for comments: 1 March 2023

Target date for publication of guidance: June 2023

1 Draft recommendations

1.1 Radiofrequency denervation for osteoarthritic knee pain may be used if standard arrangements are in place for clinical governance, consent and audit. Find out what standard arrangements mean on the NICE interventional procedures guidance page.

1.2 The procedure should only be done by clinicians with specific training and experience in this procedure.

Why the committee made these recommendations

There is good evidence to show that this procedure relieves pain in the short term. There are no major safety concerns, and the complications, including numbness, are well recognised.

2 The condition, current treatments and procedure

The condition

2.1 Osteoarthritis is characterised by localised loss of cartilage, remodelling of adjacent bone and associated inflammation. Knees are one of the most affected joints, with pain being a significant symptom.

Current treatments

2.2 Various treatments are available for pain caused by knee osteoarthritis, including non-pharmacological (such as physiotherapy), pharmacological (such as analgesics and intra-articular corticosteroids) and surgical approaches (such as knee arthroplasty). When non-pharmacological and pharmacological interventions do not work or symptoms are severe, surgery may be needed.

The procedure

2.3 This procedure is often done in 2 stages. Both are done under fluoroscopic or ultrasound guidance. First, to assess suitability for radiofrequency denervation, people are given a diagnostic block by injecting a local anaesthetic to the target nerves. If the diagnostic block relieves the pain, the person is a candidate for radiofrequency denervation.

2.4 A probe is introduced to the treatment site. Several targets have been described, including the genicular nerves, the saphenous nerve, and the articular cavity. Radiofrequency energy is used to denervate the target nerves. The radiofrequency energy can be delivered as conventional radiofrequency, cooled radiofrequency, or pulsed radiofrequency. The aim is to reduce pain and delay the need for knee arthroplasty.

3 Committee considerations

The evidence

3.1 NICE did a rapid review of the published literature on the efficacy and safety of this procedure. This comprised a comprehensive literature search and detailed review of the evidence from 9 sources, which was discussed by the committee. The evidence included 1 systematic review and network meta-analysis, 2 systematic reviews and meta-analyses, 1 randomised controlled trial, 1 long-term cohort study that was a single-arm extension of a randomised controlled trial, 1 cohort study, 1 narrative review, and 2 case reports. The evidence is presented in the summary of key evidence section in the interventional procedures overview. Other relevant literature is in the appendix of the overview.

3.2 The professional experts and the committee considered the key efficacy outcomes to be: pain relief, and improvements in quality of life, mobility and ability to exercise.

3.3 The professional experts and the committee considered the key safety outcomes to be: pain, infection, numbness, and damage to adjacent structures.

3.4 Patient commentary was sought but none was received.

Committee comments

3.5 The committee was informed that this procedure uses X-ray screening to identify the nerves and in some centres ultrasound has replaced X-ray.

3.6 The committee was informed that small volumes of local anaesthetic are used as a diagnostic procedure to identify the nerves.

3.7 The committee was informed that the typical duration of pain relief is less than 2 years and there is no long-term effect because of nerve regrowth.

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Chair, interventional procedures advisory committee
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