

# Percutaneous intradiscal radiofrequency thermocoagulation for lower back pain

## 1 Guidance

- 1.1 Current evidence on the safety and efficacy of percutaneous intradiscal radiofrequency thermocoagulation for lower back pain does not appear adequate to support the use of this procedure without special arrangements for consent and for audit or research.
- 1.2 Clinicians wishing to undertake percutaneous intradiscal radiofrequency thermocoagulation for lower back pain should take the following actions.
  - Inform the clinical governance leads in their Trusts.
  - Ensure that patients understand the uncertainty about the procedure's efficacy and provide them with clear written information. Use of the Institute's *Information for the Public* is recommended.
  - Audit and review clinical outcomes of all patients having percutaneous intradiscal radiofrequency thermocoagulation for lower back pain.
- 1.3 Further research will be useful in reducing the current uncertainty and clinicians are encouraged to collect longer-term follow-up data. The Institute may review the procedure upon publication of further evidence.

## 2 The procedure

### 2.1 Indications

- 2.1.1 Chronic back pain is a common condition that affects a considerable proportion of the population. In most individuals, the pain resolves spontaneously within several months. However, for some people, the pain persists despite specific causes of back pain, such as herniated discs, osteoporosis and fractures, being excluded. Increasingly, this pain is being attributed to degeneration of the intervertebral disc and referred to as discogenic back pain.
- 2.1.2 Typically, first-line treatment for chronic discogenic back pain is conservative, consisting of pharmacotherapy and/or a multidisciplinary programme that may include exercises, education and behavioural therapy. If the pain does not improve, patients may then choose to continue with conservative management or to undergo surgery (spinal fusion). Intradiscal radiofrequency thermocoagulation is used in patients with persistent lower back pain.

### 2.2 Outline of the procedure

- 2.2.1 Percutaneous intradiscal radiofrequency thermocoagulation is a procedure that allows the controlled delivery of heat to the intervertebral disc via an electrode or flexible catheter. Patients are sedated and local anaesthetic is administered over the affected disc. Under fluoroscopic guidance, a needle is inserted into the disc. The electrode or

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## This guidance is written in the following context:

This guidance represents the view of the Institute which was arrived at after careful consideration of the available evidence. Health professionals are expected to take it fully into account when exercising their clinical judgement. This guidance does not, however, override the individual responsibility of health professionals to make appropriate decisions in the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

flexible catheter is then introduced into the centre of the nucleus through the needle. Once in position, it is slowly heated and kept at the chosen temperature for a predetermined time.

## 2.3 Efficacy

- 2.3.1 In one uncontrolled study of 39 patients, there was a reported improvement in pain at a mean follow-up of 16 months. Two subsequent studies, including one randomised controlled trial of 28 patients comparing percutaneous intradiscal radiofrequency thermocoagulation with placebo, reported no statistically significant differences between preoperative pain levels and pain levels at final follow-up. All three studies were small, with short-term follow-up, and two were uncontrolled. For more details, refer to the Sources of evidence (see below right).
- 2.3.2 The natural history of this condition, the difficulty in assessing pain and the potential for a placebo effect all present problems when interpreting the evidence and trying to determine any benefit of this procedure.
- 2.3.3 The Specialist Advisors expressed uncertainty regarding the efficacy of this procedure. They considered that the current published evidence had not demonstrated benefit.

## 2.4 Safety

- 2.4.1 In the one randomised controlled trial of this procedure, the authors stated that no complications were observed during or after the procedure. It is difficult to know, however, whether this is because complications are uncommon or because complications were not systematically detected and reported in the available studies.
- 2.4.2 The Specialist Advisors did not report any particular safety concerns, but noted that potential adverse events included infection and nerve root damage.

## 2.5 Other comments

- 2.5.1 The evidence is based on small numbers of patients.
- 2.5.2 The efficacy evidence is difficult to interpret. It is unclear whether the improvements are the result of the procedure or the natural course of the condition.
- 2.5.3 High doses of thermal energy may be hazardous and should be used with particular caution.

## 3 Further information

- 3.1 The Institute has produced guidance on percutaneous intradiscal radiofrequency thermocoagulation for lower back pain ([www.nice.org.uk/IPG081guidance](http://www.nice.org.uk/IPG081guidance)).

Andrew Dillon  
Chief Executive  
August 2004

## Information for the Public

The Institute has produced information describing its guidance on this procedure for patients, carers and those with a wider interest in healthcare. It explains the nature of the procedure and the decision made, and has been written with patient consent in mind. This information is available, in English and Welsh, from [www.nice.org.uk/IPG083publicinfo](http://www.nice.org.uk/IPG083publicinfo)

## Sources of evidence

The evidence considered by the Interventional Procedures Advisory Committee is described in the following document.

*Interventional procedure overview of percutaneous intradiscal radiofrequency thermocoagulation for lower back pain*, April 2003

Available from: [www.nice.org.uk/ip181overview](http://www.nice.org.uk/ip181overview)

### Ordering information

Copies of this guidance can be obtained from the NHS Response Line by telephoning 0870 1555 455 and quoting reference number N0671. *Information for the Public* can be obtained by quoting reference number N0672 for the English version and N0673 for a version in English and Welsh.

The distribution list for this guidance is available on the NICE website at URL [www.nice.org.uk/IPG081distributionlist](http://www.nice.org.uk/IPG081distributionlist)

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