

# Cryotherapy for malignant endobronchial obstruction

Interventional procedures guidance

Published: 23 November 2005

[www.nice.org.uk/guidance/ipg142](http://www.nice.org.uk/guidance/ipg142)

## 1 Guidance

- 1.1 Current evidence on the safety and efficacy of cryotherapy for malignant endobronchial obstruction appears adequate to support the use of this procedure provided that the normal arrangements are in place for consent, audit and clinical governance.
- 1.2 Clinicians should ensure that patients fully understand that this is one of a variety of treatment options available. In addition, use of the Institute's [information for the public](#) is recommended.

## 2 The procedure

### 2.1 Indications

- 2.1.1 Lung cancer is often at an advanced stage when it is diagnosed, with low

survival rates. Patients can develop endobronchial lesions that obstruct the major airways, causing symptoms such as dyspnoea, cough, haemoptysis and postobstructive pneumonia. Bronchial obstruction may lead to gradual asphyxiation.

- 2.1.2 The aim of treatment in patients with malignant endobronchial obstruction is mainly palliative. Current treatment options include a variety of endobronchial therapies such as bronchoscopic resection, brachytherapy, laser ablation, photodynamic therapy and stenting. Externalbeam radiotherapy and chemotherapy may also be used for palliative treatment.

## 2.2 Outline of the procedure

- 2.2.1 General anaesthesia is usually used. A cryoprobe is inserted through a bronchoscope to reach the tumour; the probe diameter selected depends on the size and position of the tumour. After a period of freezing, the tumour is allowed to thaw until the probe separates from the tissue. The freeze/thaw cycle may be repeated two to three times in the same place. The probe is then moved to an adjacent area and the process is repeated until the whole tumour has been treated. Any resulting necrotic tumour material is then removed with forceps or using the cryoprobe. Further necrotic material may be expectorated during the following 24–48 hours. The procedure can be repeated if necessary.
- 2.2.2 Cryotherapy does not provide immediate relief of bronchial obstruction and is therefore not suitable for the emergency treatment of acute respiratory distress.

## 2.3 Efficacy

- 2.3.1 The main aim of the procedure in the studies was palliation of symptoms such as cough, dyspnoea and haemoptysis. In one case series of 521 patients, 86% (448/521) had improvement in one or more symptoms and quality of life scores were significantly improved. Dyspnoea improved in 59% (300/507) of patients. In two further studies, dyspnoea improved in 71% (12/17) and 81% (87/107) of patients. For more details, refer to the

Sources of evidence.

- 2.3.2 The Specialist Advisors did not express any major concerns about the efficacy of this procedure.

## 2.4 Safety

- 2.4.1 A large case series study reported in-hospital mortality of 1% (7/521), which was due to respiratory failure. This study also reported that 3% (16/521) of patients developed respiratory distress after the procedure.
- 2.4.2 A case series study of 27 patients reported one death due to myocardial ischaemia. Another study of 22 patients reported one cardiopulmonary arrest during the procedure. Two studies reported changes to the heart rhythm in 2% (12/521) and 11% (3/27) of patients. For more details, refer to the Sources of evidence.
- 2.4.3 The Specialist Advisors listed haemorrhage, fistula formation, cardiac arrhythmias, respiratory distress and infection as potential adverse effects.

## 3 Further information

- 3.1 The Institute has issued guidance on the [diagnosis and treatment of lung cancer](#). The Institute has also issued Interventional Procedures guidance on the use of [photodynamic therapy for advanced bronchial carcinoma](#) and [photodynamic therapy for localised inoperable endobronchial cancer](#).

Andrew Dillon  
Chief Executive  
November 2005

## Sources of evidence

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

'Interventional procedures overview of cryotherapy for malignant endobronchial obstruction', February 2005.

## Information for the public

NICE 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.

## 4 About this guidance

NICE interventional procedure guidance makes recommendations on the safety and efficacy of the procedure. It does not cover whether or not the NHS should fund a procedure. Funding decisions are taken by local NHS bodies after considering the clinical effectiveness of the procedure and whether it represents value for money for the NHS. It is for healthcare professionals and people using the NHS in England, Wales, Scotland and Northern Ireland, and is endorsed by Healthcare Improvement Scotland for implementation by NHSScotland.

This guidance was developed using the NICE [interventional procedure guidance](#) process.

We have produced a [summary of this guidance for patients and carers](#). Information about the evidence it is based on is also [available](#).

### Changes since publication

22 January 2012: minor maintenance.

### Your responsibility

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

Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to avoid unlawful discrimination and to have regard to promoting equality of opportunity. Nothing in this guidance should be interpreted in a way which would be inconsistent with compliance with those duties.

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# Endorsing organisation

This guidance has been endorsed by [Healthcare Improvement Scotland](#).