NICE National Institute for Health and Care Excellence

NICE guidance

Cryotherapy for malignant endobronchial obstruction

HealthTech guidance

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www.nice.org.uk/guidance/htg89

Your responsibility

This guidance represents the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take this guidance fully into account, and specifically any special arrangements relating to the introduction of new interventional procedures. The guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the Yellow Card Scheme.

Commissioners and/or providers have a responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties. Providers should ensure that governance structures are in place to review, authorise and monitor the introduction of new devices and procedures.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Contents

This guidance replaces IPG142.

1 Recommendations

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 NICE's information for the public is recommended.

2 Information about the procedure

Outline of the procedure

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 and 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 to 48 hours. The procedure can be repeated if necessary.

2.2 Cryotherapy does not provide immediate relief of bronchial obstruction and is therefore not suitable for the emergency treatment of acute respiratory distress.

3 Committee discussion

Indications

3.1 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.

3.2 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.

Efficacy

3.3 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 out of 521) had improvement in one or more symptoms and quality of life scores were significantly improved. Dyspnoea improved in 59% (300 out of 507) of patients. In two further studies, dyspnoea improved in 71% (12 out of 17) and 81% (87 out of 107) of patients. For more details, refer to the overview.

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

Safety

3.5 A large case series study reported in-hospital mortality of 1% (7 out of 521), which was due to respiratory failure. This study also reported that 3% (16 out of

521) of patients developed respiratory distress after the procedure.

3.6 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 out of 521) and 11% (3 out of 27) of patients. For more details, refer to the overview.

3.7 The Specialist Advisors listed haemorrhage, fistula formation, cardiac arrhythmias, respiratory distress and infection as potential adverse effects.

Sources of evidence

3.8 The evidence considered by the committee is in the overview.

Update information

Minor changes since publication

January 2026: Interventional procedures guidance 142 has been migrated to HealthTech guidance 89. The recommendations and accompanying content remain unchanged.

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Endorsing organisation

This guidance has been endorsed by Healthcare Improvement Scotland.