

# Photodynamic therapy for advanced bronchial carcinoma

## 1 Guidance

- 1.1 Current evidence on the safety and efficacy of photodynamic therapy for advanced bronchial carcinoma 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 These recommendations apply only to the use of this technique to treat advanced bronchial carcinoma. The Institute will consider photodynamic therapy for early bronchial carcinoma separately.

## 2 The procedure

### 2.1 Indications

- 2.1.1 This procedure is used to treat patients with inoperable non-small cell lung cancer, which has a poor prognosis.
- 2.1.2 Alternative treatments include debulking with biopsy forceps, radiotherapy and laser resection.

### 2.2 Outline of the procedure

- 2.2.1 Photodynamic therapy (PDT) for advanced bronchial carcinoma is a minimally invasive treatment, usually involving intravenous injection of a photosensitising agent, followed a few days later by photoradiation of the affected area through a

bronchoscope. This is intended to reduce the bulk of the tumour, therefore reducing symptoms caused, for example, by bronchial obstruction.

### 2.3 Efficacy

- 2.3.1 Three small randomised controlled trials (RCTs) were identified, in addition to non-randomised comparative studies and case series. The two largest randomised studies compared PDT with laser treatment; both studies reported that symptomatic improvement was similar for both treatments. One of these studies reported a mean increase in forced vital capacity of 0.47 litres in the PDT group, compared with a mean decrease of 0.06 litres in the laser group ( $p < 0.05$ ); and a mean increase in forced expiratory volume in 1 second of 0.35 litres for the PDT group, compared with 0.01 litres for the laser group ( $p < 0.05$ ). The other study reported median time to treatment failure to be 50 days for the PDT group and 38 days for the laser group, and average survival to be 265 days for the PDT group compared with 95 days for the laser group. For more details, refer to the Sources of evidence (see overleaf).
- 2.3.2 The Specialist Advisors noted that it was not clear whether tumour bulk reduction in a palliative setting was associated with gains in quality of life or survival. They also noted that careful patient selection is needed.

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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.

## 2.4 Safety

- 2.4.1 The largest RCT reported at least one adverse effect in 100% (14/14) of patients in the PDT group and 71% (12/17) of patients in the laser group. In this study, the most common adverse effects in the PDT group were bronchitis (29%, 4/14); photosensitisation (29%, 4/14); dyspnoea (21%, 3/14); and death (probably related to treatment; 7%, 1/14). For more details, refer to the Sources of evidence (see right).
- 2.4.2 The Specialist Advisors generally considered this procedure to be safe. They listed the main potential adverse events as skin photosensitivity, bleeding, necrosis/obstruction, late strictures, oesophago-bronchial fistula formation, and airway occlusion by exudates.

## 2.5 Other comments

- 2.5.1 The evidence for this procedure is based on small but good-quality RCTs. Further research or audits would be useful, including clinical and quality of life data.
- 2.5.2 It was noted that the role of this procedure in conjunction with other techniques is uncertain.

## 3 Further information

- 3.1 The Institute has issued guidance on chemotherapy drugs for lung cancer ([www.nice.org.uk/page.aspx?o=17338](http://www.nice.org.uk/page.aspx?o=17338)), and is currently developing a guideline for the diagnosis and treatment of lung cancer. For further information, visit the NICE website at [www.nice.org.uk](http://www.nice.org.uk)

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/IPG087publicinfo](http://www.nice.org.uk/IPG087publicinfo)

## Sources of evidence

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

*Interventional procedure overview of photodynamic therapy for advanced bronchial carcinoma*, March 2003

Available from: [www.nice.org.uk/ip100overview](http://www.nice.org.uk/ip100overview)

### Ordering information

Copies of this guidance can be obtained from the NHS Response Line by telephoning 0870 1555 455 and quoting reference number N0683. *Information for the Public* can be obtained by quoting reference number N0684 for the English version and N0685 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/IPG087distributionlist](http://www.nice.org.uk/IPG087distributionlist)

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