NICE National Institute for Health and Care Excellence

NICE guidance

Photodynamic therapy for advanced bronchial carcinoma

HealthTech guidance
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This guidance replaces IPG87.

1 Recommendations

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.

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2 The procedure

2.1 Indications and current treatments

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 2 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, see the overview.

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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.

2.4 Safety

2.4.1 The largest RCT reported at least 1 adverse effect in 100% (14 out of 14) of patients in the PDT group and 71% (12 out of 17) of patients in the laser group. In this study, the most common adverse effects in the PDT group were bronchitis (29%, 4 out of 14); photosensitisation (29%, 4 out of 14); dyspnoea (21%, 3 out of 14); and death (probably related to treatment; 7%, 1 out of 14). For more details, see the overview.

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.

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3 Further information

Sources of evidence

The evidence considered by the committee is in the overview.

Information for patients

The Institute has produced information for the public on this procedure. It explains the nature of the procedure and the decision made, and has been written with patient consent in mind.

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Update information

Minor changes since publication

January 2026: Interventional procedures guidance 87 has been migrated to HealthTech guidance 54. The recommendations and accompanying content remain unchanged.

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Endorsing organisation

This guidance has been endorsed by Healthcare Improvement Scotland.

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