

Interstitial laser therapy for breast cancer

1 Guidance

- 1.1 Current evidence on the safety and efficacy of interstitial laser therapy for breast cancer does not appear adequate to support the routine use of this procedure. It is suitable for use only within good-quality research studies approved by a research ethics committee and with explicit patient consent.
- 1.2 Publication of safety and efficacy outcomes will be useful in reducing the current uncertainty. The Institute may review the procedure upon publication of further evidence.

2 The procedure

2.1 Indications

- 2.1.1 Interstitial laser therapy is used to treat small tumours of the breast. Standard treatments include lumpectomy or mastectomy (without preceding laser therapy), and minimally invasive techniques such as radiofrequency ablation or cryotherapy.

2.2 Outline of the procedure

- 2.2.1 Interstitial laser therapy is a minimally invasive technique for treating small breast cancers. After locating the tumour using stereotactic techniques or ultrasound, laser energy is delivered into the tumour via a needle probe. This destroys tumour tissue – the aim is to ablate the tumour entirely.

2.3 Efficacy

- 2.3.1 The evidence was limited to three small case series and one case report. One study of interstitial laser therapy followed by surgery reported that 98% (43/44) of patients were disease-free at follow-up. However, follow-up ranged from 2 to 26 months, and it was difficult to determine whether the results were attributable to the laser therapy or the surgery. This study also found no histological sign of laser damage in the tumours of 9% (4/44) of patients. For more details, refer to the Sources of evidence (see overleaf).
- 2.3.2 The Specialist Advisors noted that it was still uncertain whether the procedure could achieve thermal ablation of all malignant tissue. They also noted that there were no data comparing outcomes of the procedure with those of wide excision and radiotherapy.

2.4 Safety

- 2.4.1 The following complications were reported in the identified studies: small skin burns 11% (4/35); necrosis of non-tumour tissue caused by incorrectly placed laser 10% (2/20); pain sufficient to stop treatment 7% (3/44); gaseous rupture of tumour 3% (1/35); and haemorrhage 2% (1/44). For more details, refer to the Sources of evidence (see overleaf).
- 2.4.2 One Specialist Advisor considered that this procedure should not be used outside a clinical trial; another listed the potential adverse effects of the procedure as necrosis, haemorrhage, and liquefaction caused by overheating of the tissue.

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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.

Interventional procedures guidance is for health professionals and people using the NHS in England, Wales and Scotland.

3 Further information

- 3.1 The Institute has published technology appraisals on the use of the following drugs for breast cancer: temozolomide, capecitabine, taxanes, trastuzumab and vinorelbine. For further information, visit the NICE website at www.nice.org.uk
- 3.2 The Institute issued cancer service guidance called *Improving Outcomes in Breast Cancer* in August 2002 (www.nice.org.uk/page.aspx?o=36017) and is developing a clinical guideline on breast cancer, called *Breast cancer: diagnosis and treatment*. The expected date of issue of this guideline is September 2007 (www.nice.org.uk/page.aspx?o=98536).

Andrew Dillon
Chief Executive
September 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/IPG089publicinfo

Sources of evidence

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

Interventional procedures overview of interstitial laser therapy for breast cancer, March 2003

Available from: www.nice.org.uk/ip037overview

Ordering information

Copies of this guidance can be obtained from the NHS Response Line by telephoning 0870 1555 455 and quoting reference number N0696. *Information for the Public* can be obtained by quoting reference number N0697 for the English version and N0698 for a version in English and Welsh.

The distribution list for this guidance is available on the NICE website at www.nice.org.uk/IPG089distributionlist

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MidCity Place, 71 High Holborn, London WC1V 6NA, website: www.nice.org.uk