NICE National Institute for Health and Care Excellence

NICE guidance

Interstitial laser therapy for breast cancer

HealthTech guidance
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www.nice.org.uk/guidance/htg55

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 IPG89.

1 Recommendations

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. NICE may review the procedure on 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 3 small case series and 1 case report. One study of interstitial laser therapy followed by surgery reported that 98% (43 out of 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 out of 44) of patients. For more details, see the overview.

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 out of 35); necrosis of non-tumour tissue caused by incorrectly placed laser 10% (2 out of 20); pain sufficient to stop treatment 7% (3 out of 44); gaseous rupture of tumour 3% (1 out of 35); and haemorrhage 2% (1 out of 44). For more details, see the overview.

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.

3 Further information

Sources of evidence

The evidence considered by the committee is in the overview.

Information for patients

NICE has produced information for the public on this procedure. It explains the nature of the procedure and the guidance issued by NICE, and has been written with patient consent in mind.

Update information

Minor changes since publication

January 2026: Interventional procedures guidance 89 has been migrated to HealthTech guidance 55. The recommendations and accompanying content remain unchanged.

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Endorsing organisation

This guidance has been endorsed by Healthcare Improvement Scotland.