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Understanding NICE guidance

Information for people who use NHS services

National Institute for Health and Clinical Excellence

Treating lung cancer with radiofrequency energy probes passed through the skin into the tumour

NICE 'HealthTech guidance' advises the NHS on when and how new procedures can be used in clinical practice.

This leaflet is about when and how radiofrequency energy can be used in the NHS to treat people with lung cancer. It explains guidance (advice) from NICE (the National Institute for Health and Clinical Excellence).

This HealthTech guidance makes recommendations on the safety of a procedure and how well it works. An interventional procedure is a test, treatment or surgery that involves a cut or puncture of the skin, or an endoscope to look inside the body, or energy sources such as X-rays, heat or ultrasound. The guidance does not cover whether or not the NHS should fund a procedure. Decisions about funding are taken by local NHS bodies (primary care trusts and hospital trusts) after considering how well the procedure works and whether it represents value for money for the NHS.

This leaflet is written to help people who have been offered this procedure to decide whether to agree (consent) to it or not. It does not describe lung cancer or the procedure in detail – a member of your healthcare team should also give you full information and advice about these. The leaflet includes some questions you may want to ask your doctor to help you reach a decision. Some sources of further information and support are on page 7.

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What has NICE said?

This procedure appears to be effective in controlling tumours, but there is a small risk of complications. In particular, pneumothorax (an air leak into the chest cavity, that can cause the lung to collapse) may have serious implications for people with existing breathing difficulties.

This procedure can be offered routinely as a treatment option for people with lung cancer provided that doctors are sure that:

- the patient understands what is involved and agrees to the treatment, and
- the results of the procedure are monitored.

A team of healthcare professionals who are experienced in the management of lung cancer should decide which patients should have this procedure. The team should include a thoracic surgeon, a cancer specialist and a radiologist. The procedure should only be carried out by radiologists who regularly perform similar procedures.

NICE has encouraged further research into radiofrequency energy for primary and secondary lung cancers.

Treating lung cancer with radiofrequency energy

This procedure may not be the only possible treatment for lung cancer. Your healthcare team should talk to you about whether it is suitable for you and about any other treatment options available.

The medical name for this procedure is ‘percutaneous radiofrequency ablation for primary or secondary lung cancers’.

The procedure is not described in detail here – please talk to your specialist for a full description.

Primary lung cancer means that the lungs are the first site of cancer in the body. Secondary (or ‘metastatic’) lung cancer means that the original site of cancer is not the lungs, but it has spread from another part of the body to the lungs.

This procedure uses radiofrequency heat energy to destroy the cancer. It is done either using a local anaesthetic and sedation, or with the patient under a general anaesthetic. A special needle (or ‘probe’) is inserted through the skin into the tumour. The radiologist uses images (usually a type of scan called a CT scan) to help guide the needle into place. When it is in place, a radiofrequency electrical current is passed down the needle to apply heat and destroy the tumour tissue.

What does this mean for me?

NICE has said that this procedure is safe enough and works well enough for use in the NHS. If your doctor thinks radiofrequency energy is a suitable treatment option for you, he or she should still make sure you understand the benefits and risks before asking you to agree to it.

You may want to ask the questions below

- What does the procedure involve?
- What are the benefits I might get?
- How good are my chances of getting those benefits? Could having the procedure make me feel worse?
- Are there alternative procedures?
- What are the risks of the procedure?
- Are the risks minor or serious? How likely are they to happen?
- What care will I need after the procedure?
- What happens if something goes wrong?
- What may happen if I don't have the procedure?

You might decide to have this procedure, to have a different procedure, or not to have a procedure at all.

Summary of possible benefits and risks

Some of the benefits and risks seen in the studies considered by NICE are briefly described below. NICE looked at 15 separate studies and a review of 46 studies on this procedure.

How well does the procedure work?

A study of 100 patients with secondary (colorectal) lung tumours reported that patients survived an average of 36 months after the procedure, and that 30% of patients were still alive after 5 years. A review of 46 studies including a total of 1584 patients reported that an average of 59% were still alive after an average of 18 months.

A different study of 100 patients reported that patients with primary lung cancers survived an average of 27 months after the procedure and those with secondary lung cancer survived an average of 18 months.

The success of cancer treatments is often measured by how long it takes for the cancer to worsen or spread following the procedure. The medical name for this is 'time to progression'. A study of 153 patients reported an average time to progression of 45 months in patients with tumours of 3 cm or smaller. In these patients, 83%, 57% and 47% were progression-free at 1, 3 and 5 years after the procedure. In patients with larger tumours, 45%, 25% and 25% were progression-free at 1, 3 and 5 years, and average time to progression was 12 months. In a study of 78 patients with secondary (colorectal) lung tumours, the cancer had progressed in 10%, 21% and 21% of patients at 1, 3 and 5 years respectively.

In the study of 106 patients, no significant differences were found in patients' quality of life before and 12 months after the procedure (measured using questionnaires).

As well as looking at these studies, NICE also asked expert advisers for their views. These advisers are clinical specialists in this field of medicine. The advisers said that how well the procedure works should be measured by symptom improvement, quality of life, tumour control, progression-free and overall survival, breathing complications and the need for repeat procedures.

Risks and possible problems

In total, 8 deaths were reported following the procedure across 4 studies and 520 patients. Two deaths were in patients with a single lung. The causes of death included bleeding, worsening lung complications, congestive heart failure, respiratory failure, pneumothorax and pneumonia.

In a study of 493 procedures performed in 7 different hospitals, pneumothorax requiring the insertion of a chest tube for drainage was reported in less than 10% of patients in 4 hospitals and in 10–30% of patients in the other 3 hospitals. In 5 further studies, the rate of pneumothorax requiring chest tube drainage ranged from 10% (18/183) to 20% (27/137).

In the study of 493 procedures, excess fluid in the areas surrounding the lung (‘pleural effusion’) requiring drainage was reported in less than 10% of patients in 6 hospitals and more than 30% in 1 hospital. Three further studies reported pleural effusion in 2% (4/211), 3% (4/137) and 3% (3/100) of patients.

As well as looking at these studies, NICE also asked expert advisers for their views. These advisers are clinical specialists in this field of medicine. The advisers said that possible complications of the procedure include abscess and infection, blood clots in the lung, pain, damage to the internal structures of the chest, lung disease called

interstitial pneumonitis, which can be fatal, and death following the procedure.

More information about lung cancer

NHS Choices (www.nhs.uk) may be a good place to find out more. Your local patient advice and liaison service (usually known as PALS) may also be able to give you further information and support. For details of all NICE guidance on lung cancer, visit our website at www.nice.org.uk

About NICE

NICE produces guidance (advice) for the NHS about preventing, diagnosing and treating different medical conditions. The guidance is written by independent experts including healthcare professionals and people representing patients and carers. They consider how well an interventional procedure works and how safe it is, and ask the opinions of expert advisers. This guidance applies to the whole of the NHS in England, Wales, Scotland and Northern Ireland. Staff working in the NHS are expected to follow this guidance.

To find out more about NICE, its work and how it reaches decisions, see www.nice.org.uk/aboutguidance

This leaflet is about 'percutaneous radiofrequency ablation for primary or secondary lung cancers'. This leaflet and the full guidance aimed at healthcare professionals are available at www.nice.org.uk/guidance/HTG244

You can order printed copies of this leaflet from NICE publications (phone 0845 003 7783 or email publications@nice.org.uk and quote reference N2389). The NICE website has a screen reader service called Browsealoud, which allows you to listen to our guidance. Click on the Browsealoud logo on the NICE website to use this service.

We encourage voluntary organisations, NHS organisations and clinicians to use text from this booklet in their own information about this procedure.

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