

Treating renal 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 renal 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 renal 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.

What has NICE said?

The evidence shows that this procedure appears safe and effective in the short and medium term, so this procedure can be offered routinely as a treatment option for people with renal 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 and patients' progress is checked over the long term.

NICE has encouraged doctors to collect information about this procedure and how well it works in the long term.

In addition, NICE has said that a healthcare team specialising in cancer of the urinary system should decide which patients should have this procedure.

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

Treating renal cancer with radiofrequency energy

The medical name for this procedure is 'Percutaneous radiofrequency ablation for renal cancer'.

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

Renal cancer is cancer of the kidney. The usual treatment is surgery to remove some or all of the affected kidney, either by open or keyhole surgery. Other treatments that involve heat, microwaves and freezing have been developed to destroy the cancer cells without the need to remove parts of the kidney surgically.



This particular procedure uses heat energy delivered by radiofrequency to destroy the cancer. The procedure is done either using a local anaesthetic and sedation, or with the patient under a general anaesthetic. One or more needle electrodes (through which an electrical current passes) are inserted through the skin into the tumour. The surgeon uses images (like ultrasound) to guide them into place. When the electrodes are in place a radiofrequency electrical current is used to destroy the tumour.

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 it 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. NICE has also decided that more information should be collected about this procedure and how effective it is in the long term, so your doctor may ask you if details of your procedure can be used in this way.

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 operation?
- 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 an analysis of 47 studies and 13 other separate studies on this procedure.

How well does the procedure work?

The analysis of 47 studies looked at 1375 tumours treated with either radiofrequency or freezing. It showed that 100 out of 775 tumours treated with radiofrequency and 31 out of 600 tumours treated with freezing were still there 19 months after the procedure. The study also showed that 19 out of 775 tumours treated with radiofrequency and 6 out of 600 tumours treated with freezing had spread to other parts of the body. Another study of 233 patients (260 tumours) showed that 9 out of 81 tumours treated with radiofrequency and 3 out of 179 tumours treated with freezing were still there up to 3 years after the procedure.

Another study predicted that by 3 years after the procedure, 92% of patients would still be alive and that the cancer would not have returned.

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 success factors are whether the tumour has been destroyed, imaging checks (for example, ultrasound) at 2 and 5 years to confirm the tumour has not come back, and survival. The expert advisers noted that there is uncertainty about how well the procedure works in tumours over 4 cm in diameter.

Risks and possible problems

Bleeding was reported in 5 patients in a study of 85. A case report described 1 patient with life-threatening bleeding into their urine 42 hours after the procedure, requiring a further procedure.

A collection of blood (haematoma) near the kidney affected 10 patients in 3 studies involving 207 patients being treated with this procedure.

Narrowing of the tube (ureter) from the kidney to the bladder (ureteric stricture), meaning that urine cannot drain properly, was reported in 4 cases in 3 studies involving 286 patients.

A collection of fluid near the kidney resulting from a urine leak (urinoma) happened in 2 patients in 2 studies of 182 patients. Obstruction to part of the kidney that needed surgery to remove the kidney was reported in 1 case report.

Heat damage to the intestines (requiring open surgery) happened in 1 patient in a study of 97.

An abnormal passageway between the kidney and the intestines (a fistula) developed in 1 patient after 5 days.

Nerve damage affecting the muscles affected 3 patients in a study of 48 (1 developed persistent muscle problems in their side and 2 had sensation problems on the abdominal wall that resolved after 3 months).

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, in theory, problems could include bowel perforation, damage to the kidney, and abdominal pain due to nerve damage.



More information about renal 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 renal 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. Interventional procedures 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 renal cancer’. This leaflet and the full guidance aimed at healthcare professionals are available at www.nice.org.uk/guidance/HTG226

You can order printed copies of this leaflet from NICE publications (phone 0845 003 7783 or email publications@nice.org.uk and quote reference N2233). 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.



National Institute for Health and Clinical Excellence

National Institute for Health and Clinical Excellence

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

ISBN 978-1-4731-8192-2

N2233 1P Jul 10

© National Institute for Health and Clinical Excellence, 2010. All rights reserved. This material may be freely reproduced for educational and not-for-profit purposes. No reproduction by or for commercial organisations, or for commercial purposes, is allowed without the express written permission of NICE.



Corporate member of
Plain English Campaign.
Committed to clearer communication.

197