Kidney Cancer

The facts

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Dietary advice for kidney cancer patients

Travel insurance for people with kidney cancer

Kidney Cancer UK

Kidney Cancer Scotland

The kidneys are a pair of bean-shaped organs that are found towards the back of the upper part of the tummy (abdomen); one on either side of the backbone. The main function of the kidneys is to filter waste products from the blood, which are removed from the body in the urine. The urine is carried from the kidneys to the bladder through tubes called the ureter. It is stored in the bladder until it is passed out of the body during urination.

Kidney cancer (renal cancer) can develop in one or both kidneys. The most common form of kidney cancer is renal cell carcinoma (RCC), which accounts for about 90 percent of all cases of kidney cancer. Signs and symptoms of kidney cancer include blood in the urine (haematuria), pain in the lower back or flank, and a lump or mass in the area of the kidney.

Kidney tumours are usually diagnosed using ultrasound, CT or MRI scans; however, some tumours are found when a patient has a scan for another unrelated condition. Improvements in scanning technology and more frequent use of scans has resulted in kidney tumours being picked up earlier, leading to a better outlook for patients.

Surgical options to treat kidney cancer include removal of the whole kidney (nephrectomy), removal of part of the kidney (partial nephrectomy), or ablation techniques (see below). If the cancer is at an early stage, a cure can be achieved. Even some more advanced cancers can be cured if all the cancer can be removed. Nephrectomy, however, is a major operation so you need to be fit enough to cope and recover afterwards. That's why this treatment may not be possible for everyone.

Nephrectomy, however, is a major operation which requires you to be fit enough to undergo an anaesthetic and surgery, as well as recover afterwards.

Doctors have been researching less invasive ways of removing kidney tumours. These treatments can be used to remove small tumours (less than four cm in size) and for people who are unable to have surgery.

Removing part of a kidney is called a partial nephrectomy. It means that some working kidney is left behind. Specialist surgeons now treat many small tumours this way, if possible. Sometimes it is possible to use keyhole (laparoscopic) surgery to remove the kidney, or carry out a partial nephrectomy. In specialised centres, the use of robotic assisted laparoscopic surgery can be used. Laparoscopic nephrectomy can be carried out for patients for whom open surgery is not an option, for example elderly patients or patients with heart or lung disease.

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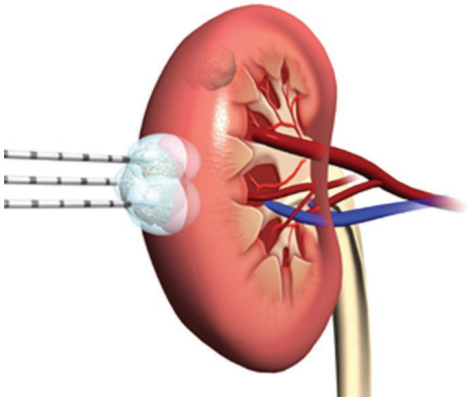

These treatments can be used to remove small tumours (less than four cm in size) and for people who are unable to have surgery. They may also be used to treat people with multiple kidney tumours or tumours in both kidneys (bilateral disease).

Cryotherapy (sometimes called cryoablation), radiofrequency ablation (RFA), microwave ablation and high intensity focussed ultrasound (HIFU) have all been tried for kidney tumours, and cryotherapy seems to be the most promising at the moment.

See the Causes, Symptoms and Diagnosis of Kidney Cancer and Surgical Treatments for Kidney Cancer fact sheets for more information about the kidney cancer causes, symptoms, diagnosis, surgery, staging and grading, and discussing treatment options.

When can cryotherapy be used?

Cryotherapy can be used to treat early stage (stage T1a) kidney tumours that are less than four cm in size. Because it is less invasive than other surgical procedures for kidney cancer, it can be used on older patients who are not well enough to have surgery. It can also be used to treat multiple small kidney tumours, and tumours in both kidneys (bilateral disease), which can be found in patients with an inherited condition called von Hippel-Lindau syndrome. In some cases, it can also be used to treat metastases (secondary tumours) in the kidneys. Cryotherapy helps to preserve normal functioning kidney tissue, so it is particularly suited to patients who have poor kidney function, or those who have had a previous nephrectomy on the opposite side.

What is cryotherapy?

Cryotherapy kills the cancer cells by freezing the tumour. The doctor inserts one or more fine needles or probes through the skin (percutaneous) and into the tumour. Argon gas or liquid nitrogen is passed through the needles under pressure to freeze the tumour. This creates a frozen area called an ice ball around the end of the needles, which kills the cancer cells. The tumour is then thawed and frozen again to include a margin of about one cm of healthy tissue in the ice ball to make sure that all the cancer cells have been frozen and destroyed. Regular CT scans are carried out during the procedure to ensure the needles are positioned correctly in the tumour and the entire tumour has been frozen. Additional freeze/thaw cycles may be repeated, if necessary. Cryotherapy can be done again if the cancer comes back, or if any of the tumour is left behind.

Cryotherapy procedures are usually carried out in the CT scanning department of the hospital. Because the kidneys move up and down as you breathe, cryotherapy is usually carried out under general anaesthetic, or sedation and local anaesthetic if a general anaesthetic is not suitable. The procedure typically takes about two to three hours. Cryotherapy can also be carried out during keyhole surgery. Your doctor or specialist nurse will be able to discuss which method is most suitable for you.

After the procedure

After the cryotherapy procedure, your nurse will encourage you to start walking about as soon as possible to help with your recovery. You may have a catheter to drain urine from your bladder, which is usually only needed for a few hours. If you are able to take fluids, you will be able to drink straight away and eat normally.

After the local or general anaesthetic wears off, the site of the treatment can be painful. You might need to take some painkillers for a few days after treatment. Some patients are able to go home on the same day as their treatment. However, your doctor might want you to stay in hospital overnight, particularly if you have had a general anaesthetic. After the procedure, the body quickly absorbs the dead tumour tissue. Most patients feel a little sore for a few days, but are able to get back to their normal daily activities within a week. It is very unusual to pass blood in the urine after a cryotherapy procedure.

Risks of cryotherapy

Even though cryotherapy is a less invasive procedure than nephrectomy, complications can still occur during the procedure. Your doctors and nurses will do everything possible to avoid any complications and to treat any side-effects that you might have.

Complications or side-effects after cryotherapy include pain, infection and bleeding. Bleeding can occur around the kidney and a few patients may even need a blood transfusion.

Very rarely 2 out of 100 patients, may experience injury to the bowel, surrounding organs or injury to the ureter, the tube that drains urine from the kidney to the bladder, this may require extensive surgery.

Other risks related to the cryotherapy procedure include damage to the chest, leading to air collecting between the membranes (pleura) covering the lungs (pneumothorax), leakage of urine, and temporary weakness caused by a nerve being damaged during the procedure. Very rare complications related to the anaesthesia and existing cardiovascular problems include heart attack, stroke, deep vein thrombosis in the leg, and thrombosis in the lung (pulmonary embolus).

However, in specialist centres that perform a lot of cryotherapy procedures, these complications are minimal and there have been no major complications in patients treated with percutaneous cryotherapy.

Cryotherapy carried out during keyhole surgery can also result in complications, although these are very rare. These include bowel injury, breathing difficulties and an abnormal heart rate.

Risks of cryotherapy

- Pain around the treatment site
- Infection
- Bleeding around the kidney
- Urine leakage
- Damage to the bowel and surrounding abdominal organs
- Blockage or damage to the ureter
- Pneumothorax
- Temporary weakness caused by nerve damage
- Complications due to anaesthesia and existing cardiovascular problems, including heart attack, stroke and thrombosis

Advantages of cryotherapy over other surgical procedures

The advantages and disadvantages of any surgical procedure vary from patient to patient. Some patients may be more suited to one type of procedure, while others will be more suited to another. The main advantages of cryotherapy over other surgical techniques are due to the less invasive nature of the procedure; there are no cuts made in the skin resulting in no scarring, recovery times are quicker, there is less time in hospital, there may be less pain, and the procedure is more cost efficient to the NHS. In addition, cryotherapy is better at preserving normal functioning kidney tissue than other surgical procedures.

However, it is yet to be proven whether cryotherapy is as reliable as other surgical techniques for treating kidney cancer, although the doctors who specialise in cryotherapy suggest that the cancer free survival and complications for cryotherapy are similar as for keyhole surgery. More clinical trials are needed to prove the effectiveness of cryotherapy for the treatment of kidney cancer.

Advantages of cryotherapy over keyhole surgery

- No cuts in the skin
- No scarring
- Quicker recovery times
- Less time in hospital
- Less pain
- Better at preserving normal functioning kidney tissue
- More cost efficient to the NHS

National Institute for Health and Care Excellence (NICE) has issued guidance for percutaneous cryoablation; however, this procedure is only available at a few specialist centres in the UK. Further research is needed to compare the long-term outcomes of cryotherapy with those of other treatments for kidney cancer.

Some patients may be more suited to one type of procedure, while others will be more suited to another.

Help our cause

We receive no government funding and are dependent on raising money from other sources. Contributions made to Kidney Cancer Scotland will stay in that country. Please include Gift Aid to your donation. You can download the Gift Aid form from our website or contact us on **01223 870 008.**

If you would like to make a donation, you can do so in the following ways:

1. Make a donation online by visiting **www.kcuk.org.uk/donate/**
2. Send a cheque made payable to **'Kidney Cancer UK'** or **'Kidney Cancer Scotland'** to: **Freepost KIDNEY CANCER UK** (no need to add our postal address)
3. Send a donation to our bank account with your name as a reference
   Kidney Cancer UK (Barclays)
   Sort code 20-17-35 Account 80098094
   Kidney Cancer Scotland (RBS)
   Sort code 83-20-22 Account 11896991
4. Make a credit or debit payment (except Diners) on the phone, by calling **01223 870 008.**
5. Make a legacy. Please contact us about the best way to do this.

If you would like to offer your support in other ways, we would be very pleased to hear from you.

Contact us

Kidney Cancer UK
01223 870 008
Monday – Friday 9-5pm

www.kcuk.org.uk

Kidney Cancer Scotland
0141 428 3494
Monday – Friday 9-5pm

www.kidneycancerscot.org

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KIDNEY CANCER CARELINE
Here to help

A dedicated **free** telephone helpline that provides support and encouragement to kidney cancer patients, their families and carers.

0300 102 0101
KIDNEY CANCER COUNSELLING
Here to support

The UK's first dedicated kidney cancer counselling service. Visit our website and search 'counselling' or call our **free** counselling service.

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