16

Kidney cancer

JASCAP

JEET ASSOCIATION FOR SUPPORT TO CANCER PATIENTS, MUMBAI, INDIA.

JASCAP
JEET ASSOCIATION FOR SUPPORT TO CANCER PATIENTS
c/o. Abhay Bhagat & Co., Office No.4, “Shilpa”, 7th.Road, Prabhat Colony,
Santacruz (East), Mumbai – 400 055
Tel.: 2617 7543, 2616 0007. Fax: 91-22-2618 6162
E-mail :pkrjascap@gmail.com & abhay@abhaybhagat.com

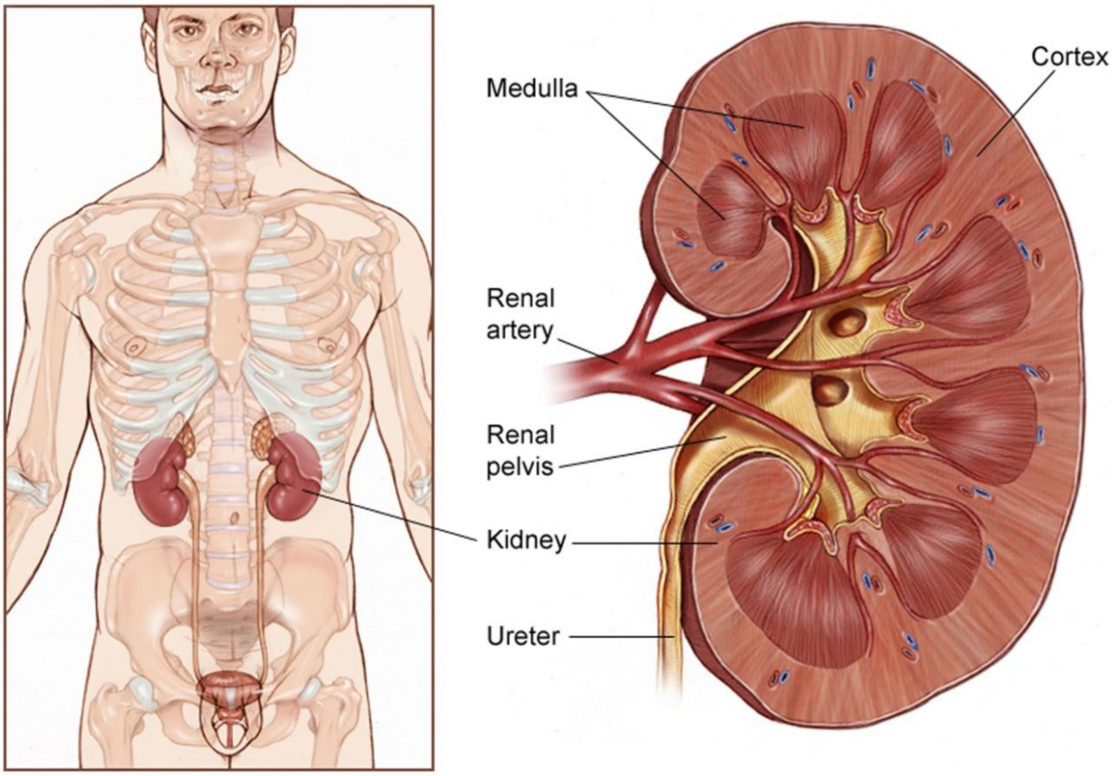
JASCAP is a charitable trust that provides information on various aspects of cancer. This can help the patient and his family to understand the disease and its treatment and thus cope with it better.

Registered under the Societies Registration Act, 1860 No.1359 / 1996 G.B.B.S.D., Mumbai and under the Bombay Public Trusts Act, 1950 No. 18751 (Mumbai). Donations to JASCAP qualify for deduction u/s 80G (1) of the Income Tax Act, 1961 vide Certificate No. DIT (E) / BC / 80G / 1383 / 96-97 dated 28.02.97 subsequently renewed.

Contact: Mr. Prabhakar K. Rao or Mrs. Neera P. Rao

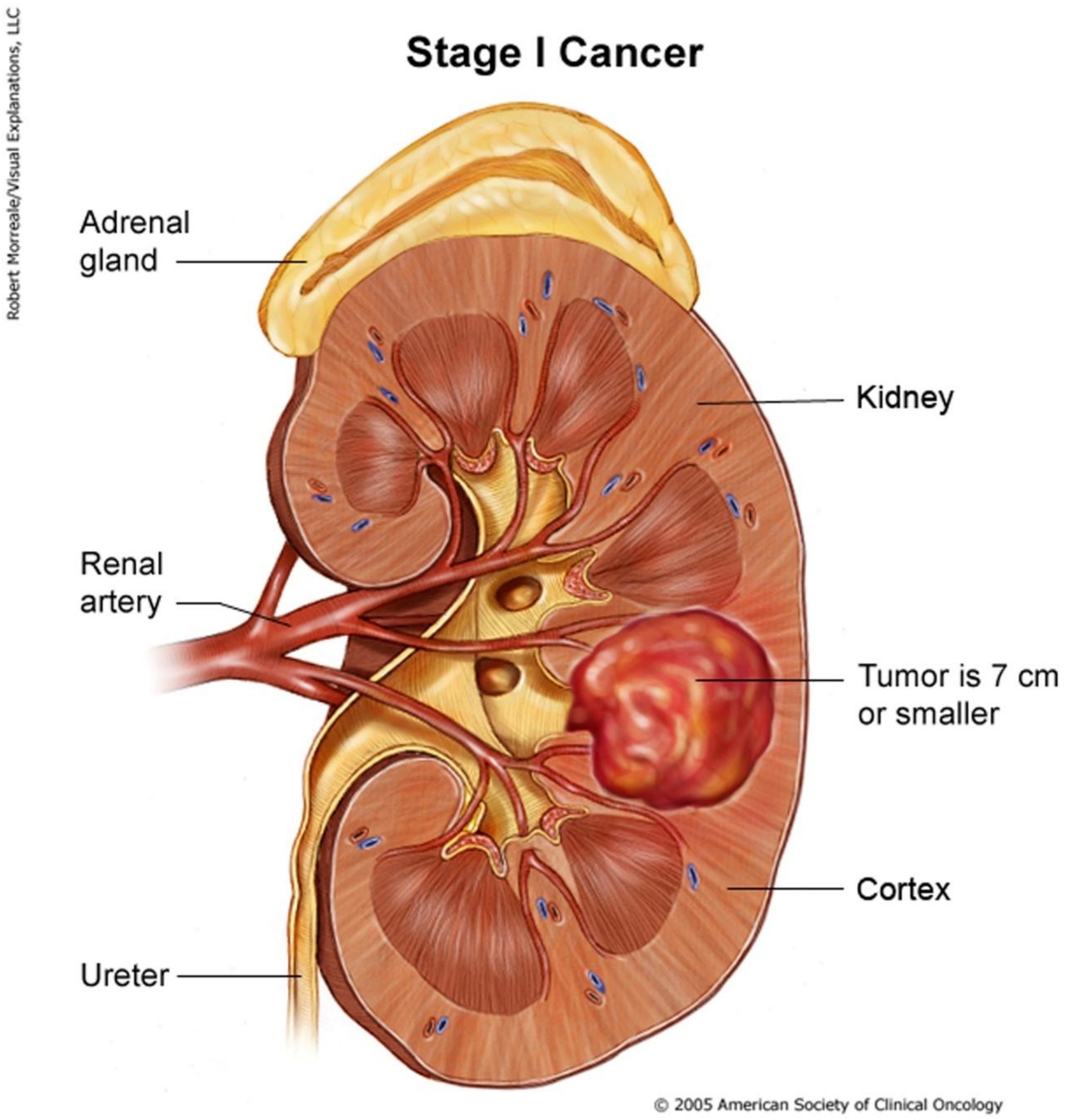
Donation suggested Rs.20.00

-
- This booklet is an adaptation of “understanding kidney cancer” produced by Cancerbackup and is reproduced with their kind permission.
- JASCAP gratefully acknowledges Cancerbackup’s permission to reproduce this booklet.

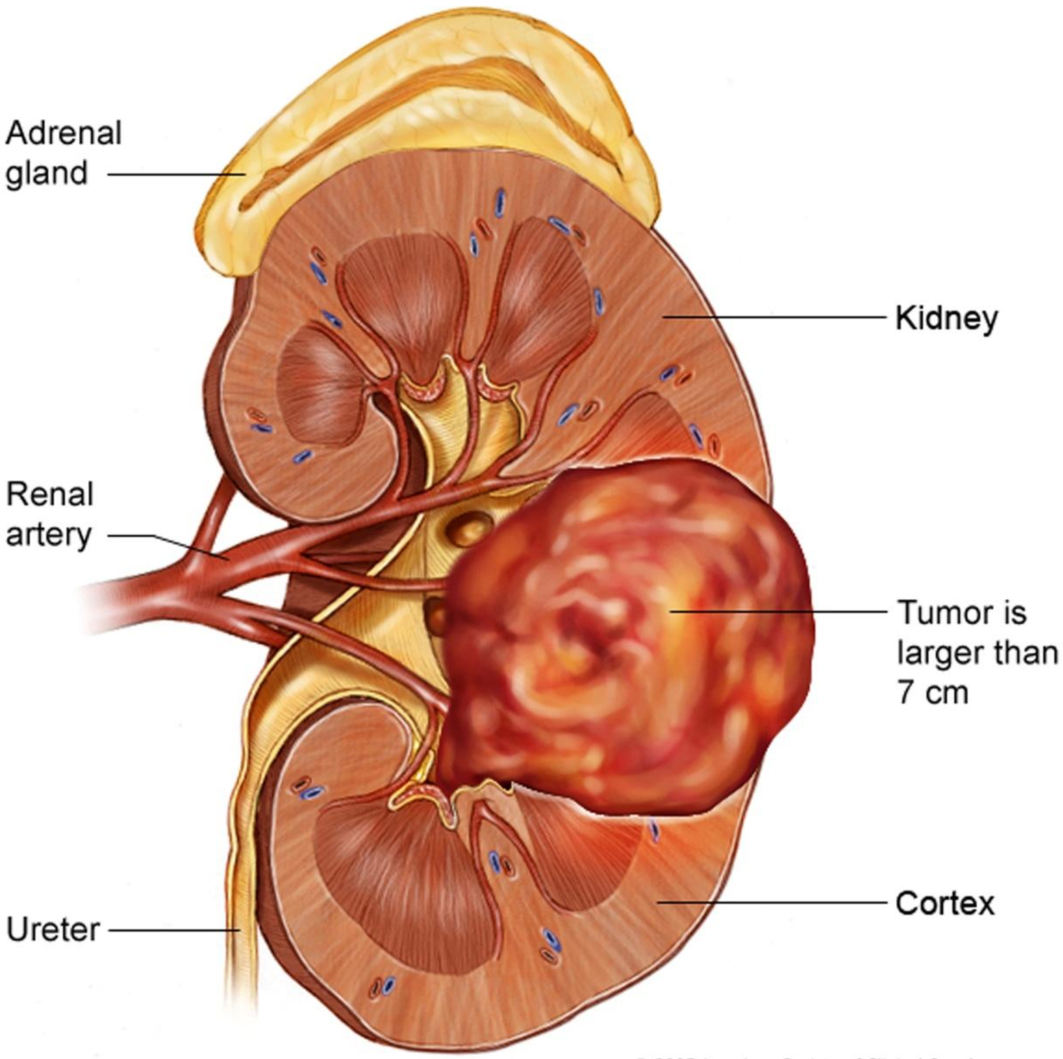


Robert Morreale/Visual Explanations, LLC

© 2004 American Society of Clinical Oncology

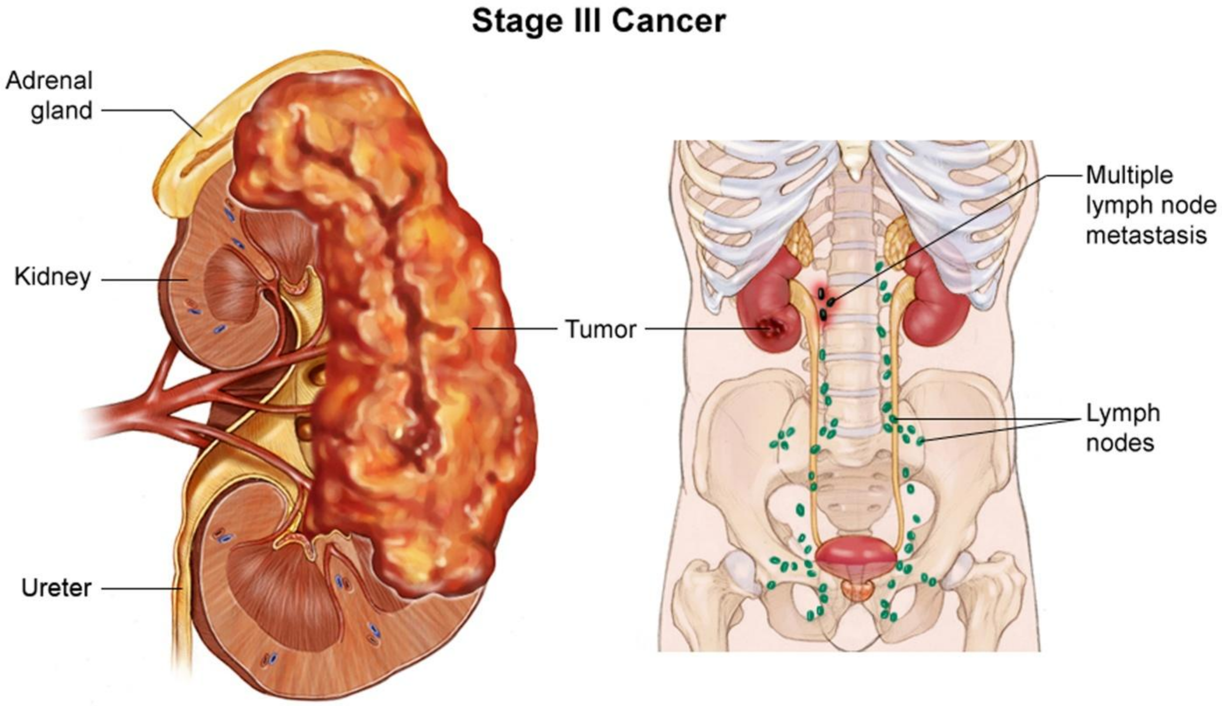

Robert Morreale/Visual Explanations, LLC
Stage I Cancer
Adrenal gland
Kidney
Renal artery
Tumor is 7 cm or smaller
Cortex
Ureter
© 2005 American Society of Clinical Oncology

Stage II Cancer



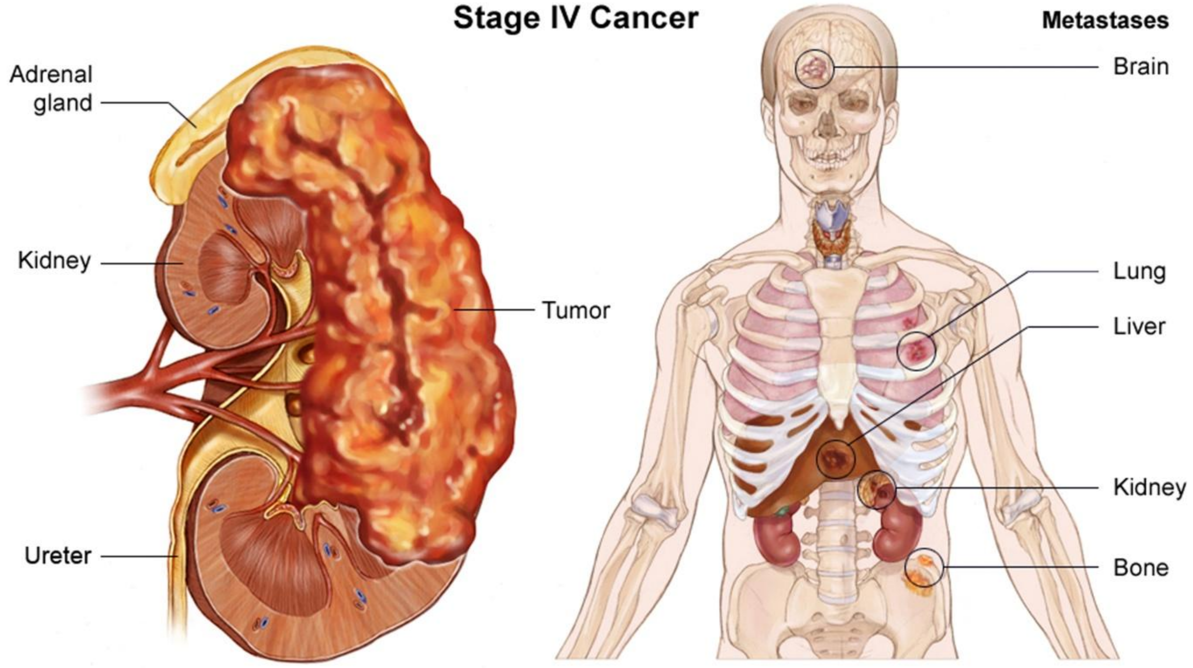
Robert Morreale/Visual Explanations, LLC

© 2005 American Society of Clinical Oncology



Stage III Cancer

Robert Morreale/Visual Explanations, LLC



Stage IV Cancer

Robert Morreale/Visual Explanations, LLC

Contents

About kidney cancer

- The kidneys
- What is cancer?
- Types of cancer
- Types of kidney cancer
- Causes
- Ureter & renal pelvis

Symptoms & diagnosis

- Symptoms
- Diagnosis
- Further tests
- Staging & grading

Treating kidney cancer

- Treatment overview
- Surgery
- Radiotherapy
- Biological treatments
- Targeted treatments
- Chemotherapy
- Hormonal treatment
- Newer treatments
- Research - clinical trials

Living with kidney cancer

- Follow up
- If the cancer comes back
- Living with and after cancer

***** JASCAP has a separate factsheet on this subject.***

Kidney cancer

About kidney cancer

The kidneys

Most people have two kidneys. They sit at the back of the body, one on each side, just underneath the ribcage. They filter the blood to remove waste products, which they convert into urine. Urine is carried from each kidney, through a tube called a **ureter** to the bladder, where it is stored.

When you are ready to pass urine, it leaves the bladder through a tube called the **urethra**. The urethra opens immediately in front of the vagina in women and at the tip of the penis in men.

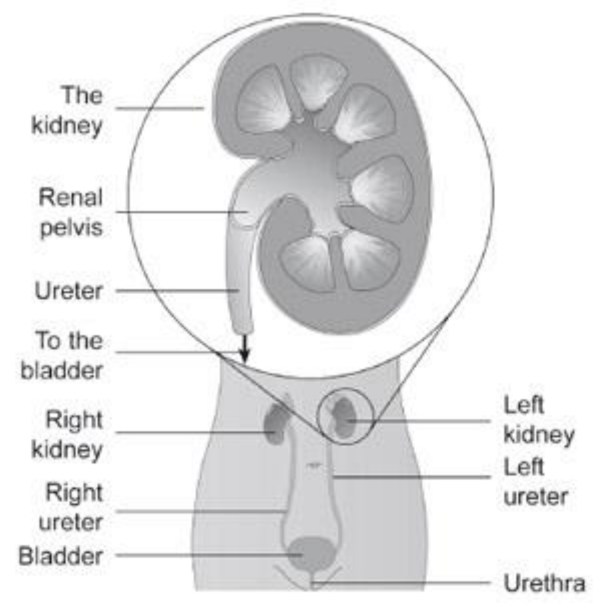
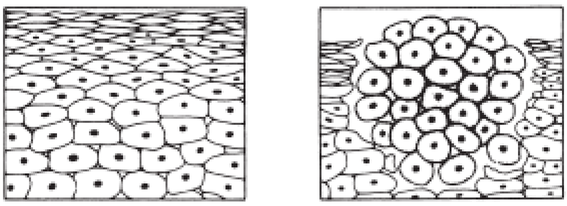


Diagram showing the structure of the kidneys

What is cancer?

The organs and tissues of the body are made up of tiny building blocks called cells. Cancer is a disease of these cells.

Cells in different parts of the body may look and work differently but most reproduce themselves in the same way. Cells are constantly becoming old and dying, and new cells are produced to replace them. Normally, cells divide in an orderly and controlled manner. If for some reason the process gets out of control, the cells carry on dividing, developing into a lump which is called a **tumour**.



Normal cells Cells forming a tumour

Tumours can be either **benign** or **malignant**. Cancer is the name given to a malignant tumour. Doctors can tell if a tumour is benign or malignant by examining a small sample of cells under a microscope. This is called a **biopsy**.

In a benign tumour the cells do not spread to other parts of the body and so are not cancerous. However, if they continue to grow at the original site, they may cause a problem by pressing on the surrounding organs.

A malignant tumour consists of cancer cells that have the ability to spread beyond the original area. If the tumour is left untreated, it may spread into and destroy surrounding tissue. Sometimes cells break away from the original (primary) cancer. They may spread to other organs in the body through the bloodstream or lymphatic system.

The lymphatic system is part of the immune system - the body's natural defence against infection and disease. It is a complex system made up of organs, such as bone marrow, the thymus, the spleen, and lymph nodes. The lymph nodes (or glands) throughout the body are connected by a network of tiny lymphatic ducts.

When the cancer cells reach a new area they may go on dividing and form a new tumour. This is known as a **secondary cancer** or **metastasis**.

It is important to realise that cancer is not a single disease with a single type of treatment. There are more than 200 different kinds of cancer, each with its own name and treatment.

Types of cancer

Carcinomas

The majority of cancers, about 85% (85 in a 100), are carcinomas. They start in the epithelium, which is the covering (or lining) of organs and of the body (the skin). The common forms of breast, lung, prostate and bowel cancer are all carcinomas.

Carcinomas are named after the type of epithelial cell that they started in and the part of the body that is affected. There are four different types of epithelial cells:

- squamous cells - that line different parts of the body, such as the mouth, gullet (oesophagus), and the airways
- adeno cells - form the lining of all the glands in the body and can be found in organs such as the stomach, ovaries, kidneys and prostate
- transitional cells - are only found in the lining of the bladder and parts of the urinary system
- basal cells - that are found in one of the layers of the skin.

A cancer that starts in squamous cells is called a squamous cell carcinoma. A cancer that starts in glandular cells is called an adenocarcinoma. Cancers that start in transitional cells are transitional cell carcinomas, and those that start in basal cells are basal cell carcinomas.

Leukaemias and lymphomas

These occur in the tissues where white blood cells (which fight infection in the body) are formed, i.e. the bone marrow and lymphatic system. Leukaemia and lymphoma are quite rare and make up about 6.5% (6.5 in 100) of all cancers.

Sarcomas

Sarcomas are very rare. They are a group of cancers that form in the connective or supportive tissues of the body such as muscle, bone and fatty tissue. They account for less than 1% (1 in 100) of cancers.

Sarcomas are split into two main types:

- bone sarcomas - that are found in the bones
- soft tissue sarcomas - that develop in the other supportive tissues of the body.

Others forms of cancer

Brain tumours and other very rare forms of cancer make up the remainder of cancers.

Types of kidney cancer

Each year, about 6200 people in the UK are diagnosed with kidney cancer. It affects more men than women and becomes more common as people get older. It is rare for people under 40 to get kidney cancer, but there is an uncommon type (Wilms' tumour, also known as nephroblastoma) that affects very young children.

Cancer of the kidney isn't infectious and can't be passed on to other people. Usually only one kidney is affected. It is rare for cancer to occur in the other kidney.

About 90% of kidney cancers are **renal cell cancers** (RCC). They are sometimes called renal adenocarcinoma. There are different subtypes of renal cell cancer which can be identified by looking at the cells under a microscope. The most common subtype is clear cell. Other, less common, types include papillary (or chromophilic), chromophobic, oncocytic, collecting duct and sarcomatoid.

There is a rarer type of kidney cancer, known as **transitional cell cancer** (TCC), which starts in the cells lining the central area of the kidney (the renal pelvis). The tests and treatment for transitional cell cancer are very different.

This booklet describes the tests and treatments for renal cell cancers. Our factsheet on cancer of the ureter and renal pelvis covers the treatment of transitional cell cancer.

Causes of kidney cancer

Doctors don't know exactly what causes kidney cancer and for many people the cause is never found, but a number of things are known to increase the risk of developing it.

Cigarette smoking This may increase the risk by as much as double for some people. The longer a person smokes for and the more cigarettes they smoke, the greater the risk.

Being overweight (obese) People who weigh at least a quarter (25%) more than is recommended for their height have a higher than average risk of getting kidney cancer.

Some **medical conditions**, such as having high blood pressure (hypertension) may increase the risk. People with advanced kidney disease, especially those who need to have dialysis, have a higher risk of developing kidney cancer.

Exposure to certain materials at work may affect a person's risk. Working with blast furnaces or coke-ovens, in the steel and coal industries has been linked to an increased risk of kidney cancer. Being exposed to cadmium, lead or asbestos at work may also increase risk.

Most kidney cancers aren't inherited but occasionally, two or more members of the same family develop kidney cancer. If this happens, other members of the family may have a higher than average risk of getting kidney cancer.

There are some rare conditions, such as **von Hippel-Lindau disease**, where an inherited faulty gene increases the risk of developing kidney cancer. Kidney cancers that develop because of inherited faulty genes have some differences from other kidney cancers. They are more likely to cause several tumours and to affect both kidneys. They are also more likely to happen at a younger age than other kidney cancers.

Symptoms & diagnosis

Symptoms of kidney cancer

Kidney cancers don't always cause symptoms. It is becoming increasingly common for kidney cancer to be diagnosed by chance when people are having scans done for some other reason. The kidney cancers found in this way are often small and because of this don't cause any symptoms.If there are symptoms, these may include:

- Blood in the urine. This is the most common symptom of kidney cancer. It may come and go, but, if you ever see blood in your urine you should always get it checked out.
- Painful spasms in the ureters or the bladder caused by blood clots.
- A lump in the area of the kidney.
- A dull pain in the side.
- A persistent high temperature, night-sweats, tiredness and weight loss.

Most people with these symptoms won't have kidney cancer. Other more common conditions such as an infection or stones in the bladder or kidneys are often the cause. But, if you develop any of these symptoms, it's important to get them checked by your doctor.

How kidney cancer is diagnosed

Usually, you begin by seeing your family doctor (GP). They will ask for a sample of your urine, and may also take a blood sample for testing. Depending on the results of these tests, your GP will refer you to a hospital for expert advice and treatment.

If you have blood in your urine (haematuria) you may be referred to a 'one stop' haematuria clinic. At this kind of clinic, all the tests needed to make a diagnosis can often be carried out at the same time and you can go home the same day. You may be asked not to eat or drink anything for up to eight hours before your appointment.

Further tests for kidney cancer

At the hospital the doctor will ask you about your symptoms and general health. You will also be asked if you have any other health problems. The doctor will examine you physically and arrange for some of the following tests:

IVU or IVP (intravenous urogram)

This test shows up anything unusual in the kidneys or urinary system. It is done in the hospital x-ray department and takes about an hour.

A dye is injected into a vein in your arm, and travels through the bloodstream to the kidneys. The doctor can watch on a screen how the dye passes through the kidneys and can pick up any problems.

The dye will probably make you feel hot and flushed for a few minutes but this feeling goes away after a short time.

Ultrasound scan

This test can be very helpful in diagnosing cancer of the kidney. It uses sound waves to build up a picture of the inside of the tummy (abdomen) including the kidneys. It is a painless test and only takes a few minutes. Once you are lying comfortably on your back, a gel is spread onto your abdomen. A small device, which produces sound waves, is rubbed over the area. The echoes are turned into a picture by a computer.

Ultrasound can be used to look for changes in the shape of the kidneys, which may suggest there is a cyst or tumour. It can also measure the size and position of a cancer.

CT scan

A CT (computerised tomography) scan takes a series of x-rays and puts these together to give a 3-D picture of the inside of your body. The scan is painless and takes between 10 and 30 minutes. It may be used to look for changes in the kidneys, to identify the exact site of the tumour, or to check for any spread of the disease. You may be asked not to eat or drink anything for several hours before your appointment.

Most people who have a CT scan are given a drink or injection of dye before the scan. This helps the doctor to see particular areas more clearly. People who are allergic to iodine or have asthma may be at higher risk of reacting to the dye. So, if you are allergic to iodine or have asthma, tell the doctor and the person doing the test before you have the injection or drink. After having the injection, most people feel hot and flushed but this only lasts for a few minutes. You will probably be able to go home as soon as the scan is over.

Cystoscopy

This test may be done if you have blood in your urine. It doesn't look at the kidneys but is used to check the bladder lining for signs of bleeding. It is usually done under local anaesthetic and takes about 20 minutes. A small, flexible, fibre-optic tube with a light at the end (cystoscope) is passed into the tube that leads to the bladder (urethra). This allows the doctor to look at the whole lining of the bladder and urethra.

You may have some soreness or mild pain when you pass urine for the first time after the test. However, there are not usually any other effects.

MRI scan Back to top

An MRI (magnetic resonance imaging) scan is similar to a CT scan but uses magnetism instead of x-rays to build up a detailed picture of areas of your body.

Having an MRI scan

During the test you will be asked to lie very still on a couch inside a long tube for about 30 minutes. It is painless but can be slightly uncomfortable, and some people feel a bit claustrophobic during the scan. It is also noisy, but you will be given earplugs or headphones. You may be able to take someone with you into the room to keep you company.

The scanner is a very powerful magnet, so you should remove any metal belongings before entering the room. People who have heart monitors, pacemakers or certain metallic surgical clips cannot have an MRI because of the magnetic fields.

Some people are given an injection of dye into a vein in the arm to show the kidneys better.

Image-guided biopsy

This may be done if you need to have a sample of tissue – a biopsy – taken from the kidney. A doctor uses an ultrasound or CT scanner to guide them to the area of kidney where the biopsy will be taken. This is known as an ultrasound- or CT-guided biopsy.

Before the scan, a local anaesthetic is injected to numb the area over the kidney. The kidney is then scanned to produce pictures on a screen. This helps the doctor to accurately guide a needle through the skin and into the kidney. The doctor draws a small sample of tissue into the needle before removing it. This sample will be sent to the laboratory to be examined under a microscope. You may need to stay in hospital for a few hours (or overnight) after this procedure.

Blood tests

You will usually have blood tests taken to assess your general health.

Chest x-ray

X-rays are often taken to check the health of your heart and lungs.

Waiting for your test results

It will probably take several days for the results of your tests to be ready, and this waiting period will obviously be an anxious time for you. It may help if you can talk things over with a relative or close friend. You could also contact one of the support organisations.

Staging and grading of kidney cancer

Staging

The stage of a cancer describes its size and whether it has spread. Once your doctors know the stage of the cancer, they can decide on the most appropriate treatment for you. The most commonly used staging system for kidney cancer is called the **TNM** system:

- **T** refers to the tumour size.
- **N** refers to whether lymph nodes are affected.
- **M** refers to whether the cancer has spread to other parts of the body (metastases)

Tumour size (T)

- **T1a** The cancer is smaller than 4cm in size and limited to the kidney
- **T1b** The cancer is between 4cm and 7cm in size and is limited to the kidney
- **T2** The cancer is larger than 7cm but is still limited to the kidney.
- **T3** The cancer is growing into the adrenal gland OR into the fat around the kidney but not beyond the fibrous tissue (Gerota's fascia) OR into one or both large blood vessels close to the kidney (renal artery and renal vein).
- **T4** The cancer has spread outside the fibrous envelope of tissue (Gerota's fascia) that surrounds the kidney.

Lymph nodes (N)

The N refers to whether the cancer cells have spread into the lymph nodes close to the kidney. There are three lymph node stages. These are:

- **N0** There are no cancer cells in any lymph nodes.
- **N1** There are cancer cells in one lymph node.
- **N2** There are cancer cells in two or more lymph nodes

If the cancer cells have spread to the lymph nodes, the nodes are said to be positive.

Metastases (M)

If the cancer cells have not spread, this is described as **M0**.

If cancer cells have spread to other parts of the body it is said to be M1. If kidney cancer spreads it is most likely to go to the bones, the lungs, the liver or the brain. If the cancer has spread it is called secondary or metastatic kidney cancer.

The T, N and M stages may be grouped together to give an overall stage for the cancer from 1–4.

- **Stage 1** The cancer is smaller than 7cm and is limited to the kidney. There is no spread to lymph nodes or other organs.
- **Stage 2** The cancer is larger than 7cm and is limited to the kidney. There is no spread to lymph nodes or distant organs.
- **Stage 3** The cancer has begun to spread outside the kidney. It may have spread into the adrenal gland, which sits on top of the kidney, OR to one of the large blood vessels close to the kidney (the renal vein or the vena cava) OR to only one lymph node OR into the fat that surrounds the kidney.
- **Stage 4** The cancer has grown through the fibrous tissue outside of the kidney, and/or has spread to two or more lymph nodes and/or has spread to other organs.

Grading

Grading refers to the appearance of the cancer cells under the microscope. The grade gives an idea of how the cancer may behave. The Fuhrman system is the most common grading system for kidney cancer. It goes from 1–4: the higher the number, the more abnormal the cells look. A grade 1 cancer will usually grow more slowly and be less likely to spread than a higher grade cancer such as a grade 4 cancer.

Treating kidney cancer

Treatment for kidney cancer

Surgery is the main treatment for cancer of the kidney. If all of the cancer can't be removed by surgery, other treatments may be used. These may include biological treatments, or targeted treatments. Occasionally chemotherapy, radiotherapy or hormonal treatment is used. In rare cases, cancer of the kidney will spontaneously improve without any treatment, but this is not usual.

Your doctors will plan your treatment by taking into account a number of factors, including your age and general health, the type and size of the tumour and whether it has spread.

How treatment is planned

In most hospitals, a team of specialists will meet to discuss and agree on the plan of treatment they feel is best for your situation. This **multidisciplinary team (MDT)** will normally include:

- a urologist (a surgeon who specialises in treating kidney cancers)
- an oncologist (a specialist in cancer treatments such as chemotherapy, radiotherapy and biological therapy)
- a nurse specialist, who gives information and support
- a radiologist, who helps to analyse scans and x-rays
- a pathologist, who advises on the type and extent of the cancer.

Other staff are also available to help you if necessary, such as

- dietitians
- physiotherapists
- occupational therapists
- psychologists and counsellors.

Your doctor will discuss with you what the best treatment is for your particular situation or they may offer you a choice of treatments. If you have to decide between treatments, make sure that you have enough information about each treatment option, so that you can decide which is right for you. You may find it helps to ask questions about what is involved with each treatment and the possible side effects they may cause.

If you have any questions about your treatment, don't be afraid to ask your doctor or the nurse looking after you. It often helps to make a list of the questions you want to ask and to take a close friend or relative with you to help you remember what is discussed.

Giving your consent

Before you have any treatment, your doctor will explain the aims of the treatment to you. They will usually ask you to sign a form saying that you give your permission (*consent*) for the hospital staff to give you the treatment.

No medical treatment can be given without your consent, and before you are asked to sign the form you should have been given full information about:

- the type and extent of the treatment you are advised to have
- the advantages and disadvantages of the treatment
- any possible other treatments that may be available
- any significant risks or side effects of the treatment.

If you do not understand what you have been told, let the staff know straight away so that they can explain again. Some cancer treatments are complex, so it is not unusual for people to need repeated explanations.

It is often a good idea to have a friend or relative with you when the treatment is explained, to help you remember the discussion more fully. You may also find it useful to write down a list of questions before you go to your appointment.

Patients often feel that the hospital staff are too busy to answer their questions, but it is important for you to be aware of how the treatment is likely to affect you. The staff should be willing to make time for you to ask questions.

You can always ask for more time to decide about the treatment if you feel that you can’t make a decision when it is first explained to you.

You are also free to choose not to have the treatment. If you are considering not having treatment it is essential to discuss this fully with your cancer specialist. The staff can explain what may happen if you do not have it. It is essential to tell a doctor, or the nurse in charge, so that they can record your decision in your medical notes. You do not have to give a reason for not wanting to have treatment, but it can be helpful to let the staff know your concerns so that they can give you the best advice.

Benefits and disadvantages of treatment

You may feel worried at the thought of having cancer treatment, because of the potential side effects that can occur. In this situation it is often helpful to get more information about what can be done to prevent or control side effects. The doctor who will be giving you the treatment will be able to answer your questions about this.

Treatment can be given for different reasons and the potential benefits will vary depending upon the individual situation.

Early-stage kidney cancer

In people with early-stage kidney cancer, surgery is usually done with the aim of curing the cancer. Occasionally, additional treatments are given to help reduce the risks of it coming back.

Advanced-stage kidney cancer

If the cancer is at a more advanced stage, treatment may only be able to control it. This may help you to live for longer or it may reduce your symptoms and improve your quality of life. However, for some people the treatment will have very little effect upon the cancer and they will get the side effects without any of the benefits. If you are having treatments you will be monitored closely for signs that it is working. This is so that treatment can be stopped if it isn’t helping you and is only causing side effects.

Treatment decisions

If you have been offered treatment with the aim of curing your cancer, the decision whether to accept it may not be a difficult one. But, if a cure isn’t possible and the treatment is being given to control the cancer for a period of time, it may be more difficult to decide whether to go ahead with treatment or not.

Making decisions about treatment in these circumstances is always difficult, and you may need to discuss things in detail with your doctor. If you choose not to have treatment for the cancer, you can still be given treatment to control any symptoms you may have. Treatment given in this situation is known as supportive care or palliative care.

Second opinion

Even though a number of cancer specialists work together as part of a team to decide on the most suitable treatment for you, you may want to have another medical opinion. Most doctors will be willing to refer you to another specialist for a second opinion if you feel that it will be helpful. This can take time to organise and may cause a delay in the start of your treatment, so you and your doctor need to be confident that it will give useful information.

If you go for a second opinion, it may be a good idea to take someone with you, and to have a list of questions ready so that you can make sure your concerns are covered during the discussion.

Surgery for kidney cancer

Surgery is often the only treatment that is needed. The most appropriate type of surgery for your situation will depend on the size of the cancer and whether or not it has spread, as well as your age and general health. It is important to discuss any operation fully with your surgeon before you have it.

Nephrectomy (removal of the kidney)

The most common type of surgery for kidney cancer is a nephrectomy. The surgeon removes all of the affected kidney and some surrounding tissue. This operation usually involves a cut (incision) made between the lower ribs on the side of the tumour. The surgeon may also remove some, or all, of the lymph nodes close to the kidney to check whether they contain cancer.

It is possible to live a completely normal life with just one kidney; it will do the work usually shared by two kidneys. But, removing a kidney is a big operation and so you need to be reasonably fit. This means that this type of surgery isn’t suitable for everyone. In some cases people who aren’t fit enough to have standard surgery may be able to have an operation using one of the newer surgical techniques that are being developed, such as keyhole surgery.

Partial nephrectomy

Instead of taking out all of the kidney, the surgeon will sometimes only remove the tumour and the part of the kidney surrounding it. This is called a partial nephrectomy or nephron-sparing surgery and it is usually only possible if the tumour is smaller than 4cm.

A partial nephrectomy may also be used if it is important to try to keep the affected kidney, for example if you have only one kidney or have kidney disease. It may also be used if you have an inherited form of kidney cancer that increases your risk of cancer developing in the other kidney.

Keyhole surgery

In some situations, it may be possible to have keyhole or laparoscopic surgery to remove some, or all of your kidney. In this type of surgery only small openings are made instead of one larger cut (incision). The surgeon uses a special instrument called a laparoscope to see and work inside the belly (abdomen).

The laparoscope is a thin tube with an eyepiece at one end and a light and a magnifying lens at the other. It is put into the abdomen through a small cut in the skin. Generally about three small cuts and one larger cut are needed for the operation. The larger cut is usually made close to the belly button and is used to remove the kidney.

The main advantage of this type of surgery is that it leaves a much smaller wound and so has a shorter recovery time. Keyhole surgery may be used for some people, who would not have been fit enough to have an operation otherwise.

The chances of curing kidney cancer appear to be as good with keyhole surgery as with bigger operations. However, the techniques haven’t been used for long enough to be absolutely sure of this.

Keyhole surgery should be carried out by surgeons with specialist training and experience in using laparoscopic techniques. So, if it is suitable for you, and you choose to have this type of surgery, you may need to travel to another hospital to have the operation.

Surgery when the cancer has spread

Secondary tumours (or metastases) can develop if cancer cells break away from the original tumour (the primary) and travel in the bloodstream or the lymphatic system. The cells may settle and begin to grow in a different part of the body, forming a new tumour.

If the cancer has already spread to other places in the body (metastatic or secondary cancer) it may still be worth having the kidney with the cancer removed. If the tumour in the kidney is causing symptoms such as pain or bleeding, or if it is affecting the balance of chemicals in your blood, taking it out may relieve this.

Although this operation will not usually be able to cure the cancer, it may help other treatments to work better and so may help you to live for longer. However, these possible advantages need to be weighed up against the effects of having a major operation. Deciding whether to go ahead with an operation in these circumstances can be very difficult. It is important that you discuss the advantages and disadvantages with your doctors when making up your mind.

Rarely, surgery may be used to remove small secondary tumours in another part of the body. This is very specialised surgery. It is generally only possible if the cancer has spread to a limited area – usually just to one place in the body. It is also important that you are fit and healthy enough to cope with the operation. Removing a secondary cancer may help to slow down and control the cancer for longer. Occasionally it may be used to try to cure the cancer.

Embolisation

If surgery to remove the kidney isn't possible because of your general health or because the tumour is too large, it may be possible to block off the blood supply to the tumour. This is called embolisation. A thin plastic tube (catheter) is put into a blood vessel in your groin. Then, using x-ray pictures as a guide, the surgeon threads the catheter upwards until the tip is in the artery that carries blood to the kidney. A substance is then injected through the catheter into the kidney. This will block the blood supply to the kidney and so cut off the supply of oxygen and nutrients to the tumour.

Embolisation is usually done to try to shrink the tumour and to help control symptoms such as bleeding.

After your operation

After your operation you will be encouraged to start moving about as soon as possible. This is an essential part of your recovery. If you have to stay in bed, the nurses will encourage you to do regular leg movements and deep-breathing exercises.

When you get back to the ward you will have a drip of fluid and salts going into your vein until you are able to eat and drink normally. You will probably have drainage tubes from the wound to stop any excess fluid collecting, and so help the wound to heal. The tubes will only be needed for a short time and will be taken out before you go home.

Usually you will have a small tube (catheter) draining urine from your bladder into a collecting bag. This will save you having to get up to pass urine. The catheter is usually removed after a couple of days.

You will be given painkilling drugs regularly, to control any pain. If you still have pain, it is important to let the ward nurse know. They can have the type or dose of painkillers changed to something that is more effective for you.

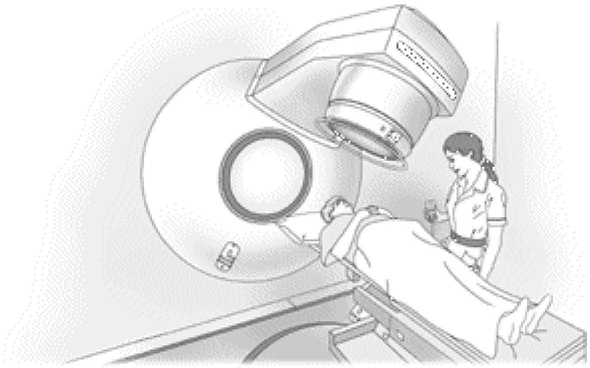
How long you need to stay in hospital after your operation will depend on the type of surgery you have had. The time can range from 4–10 days depending on the type of operation and on your general health and fitness. Many people like to know how soon they will be able to get back to doing normal things, like shopping, gardening, playing sport or going to work. This will vary depending on the surgery you have had and on you as a person. Your doctor or nurse will be able to advise you.

Before you leave hospital you will be given an appointment to attend an outpatient clinic for a check-up about six weeks after your surgery. This is a good time to discuss any problems you may have after your operation.

Radiotherapy for kidney cancer

Radiotherapy treats cancer by using high-energy x-rays, which destroy the cancer cells while doing as little harm as possible to normal cells. It is most often used to try to shrink the cancer if it is causing pain, or to treat cancer that has spread to the brain or the bones.

The treatment is given in the hospital radiotherapy department as an outpatient. Radiotherapy is often given in divided doses called fractions. When used to relieve symptoms, radiotherapy is usually given for a few minutes every day for a few days. Your doctor will discuss the treatment with you.



After positioning you will be left alone for a few minutes while treatment is given, but you can still talk to your radiographer via an intercom

Side effects

Radiotherapy can cause general side effects such as feeling sick (nausea), being sick (vomiting) and tiredness (fatigue). These effects are usually mild when the radiotherapy is given to relieve symptoms. The doctor who plans your radiotherapy (clinical oncologist) will be able to advise you about what to expect. Usually side effects disappear gradually once your course of treatment is over but it is important to let your doctor know if they continue.

Biological treatments for kidney cancer

Biological treatments work by encouraging the body's immune system to attack the cancer. They may be used to try to control locally advanced kidney cancer and kidney cancer that has spread to other parts of the body. For some people they may help to shrink the cancer or slow its growth.

Interferon alpha

Interferon is a type of immunotherapy for kidney cancer. It is a substance normally produced by the body to fight viral infections such as flu, but has a number of effects on the immune system. Interferon can be produced in the laboratory.

The type of interferon used to treat cancer of the kidney is called interferon alpha-2a (Roferon-A®). It is usually given three times a week by injection under the skin (subcutaneously). The injections may be slightly uncomfortable. You, or your relatives, can be taught to give the injections at home, and you can use either a pen-injection device or a pre-filled syringe, which makes it easier to do this. A free, home-nurse support service is available to help new patients with their first few injections. The nurses can also give advice on managing any side effects that may occur. Your GP, practice nurse or district nurse can also help if necessary.

In the first week or two of treatment, interferon often causes side effects similar to flu symptoms – especially chills, a high temperature, headaches, and aching in the back, joints and muscles. You may also feel tired, sick, and lose your appetite. Although these symptoms are uncomfortable at the time, they tend to become less severe as the treatment continues.

Aldesleukin

Another biological treatment sometimes used for cancer of the kidney is aldesleukin (Proleukin®). This is an artificial version of a protein called interleukin-2 (IL-2) that occurs naturally in the body and stimulates a type of blood cell (lymphocytes) to fight infection.

Aldesleukin is either given as an injection under the skin or by drip into a vein (intravenously). It is usually only given in specialist cancer centres. The most common side effects of aldesleukin include: a high temperature; headaches; feeling sick and being sick (nausea and vomiting); weight gain; low blood pressure; skin rashes and itching; loss of appetite; and diarrhoea. These side effects can be upsetting but are temporary and will disappear when the treatment has finished. It is important to tell your doctor or nurse if your side effects are severe. They will be able to treat some of the side effects.

Doctors are looking at aldesleukin to see how useful it is in treating cancer of the kidney. If this treatment might be appropriate for you, your hospital specialist may be able to refer you to one of the hospitals carrying out trials.

Targeted treatments for kidney cancer

Newer targeted treatments such as, sunitinib and sorafenib, have recently been developed. These treatments may be helpful for people with locally advanced and metastatic kidney cancer (stages 3 and 4). They are used to try to control the cancer by shrinking it or by slowing its growth. As they are quite new these treatments may not be widely available.

The National Institute for Health and Clinical Excellence (NICE) is an independent organisation that gives advice on which new drugs and treatments should be available on the NHS. NICE has recently published guidance on the use of sunitinib for people with advanced renal cell cancer. It recommends that sunitinib can be used as a first choice treatment for people with advanced or metastatic renal cell cancer if:

- they are able to have immunotherapy (such as interferon alpha) **and**
- they are fit enough to have the treatment (for example, able to do light housework or office work).

NICE is currently looking at how other drugs such as sorafenib, bevacizumab and temsirolimus can best be used to treat people with renal cell cancer. Guidance is expected to be published later this year.

The Scottish equivalent to NICE, the Scottish Medicines Consortium (SMC), has said sunitinib and sorafenib should not be made available to treat kidney cancer on the NHS in Scotland. This advice may change in the future depending on NICE guidance.

Sunitinib (Sutent®) may be used to treat people with locally advanced kidney cancer (stage 3) or kidney cancer that has spread to other areas of the body (stage 4). It is a type of drug called a multi-targeted kinase inhibitor. It is taken daily as a tablet and interferes with signals that tell cancer cells to grow. It also works by slowing the growth of new blood vessels within the tumour. Common side effects of sunitinib include skin changes – such as a rash, hair-thinning, raised blood pressure and tiredness.

Sorafenib (Nexavar®) may be used to treat people with stage 3 or stage 4 kidney cancer who are no longer being helped by treatment with interferon-alpha (IFN) or interleukin-2 (IL-2), or for whom these drugs are not suitable. It is a type of drug called a multikinase inhibitor and is taken daily as a tablet. It is designed to stop cancer cells from growing and to prevent the cancer from developing new blood vessels. Common side effects include diarrhoea, skin reactions, and tiredness.

Chemotherapy for kidney cancer

Chemotherapy is the use of anti-cancer (cytotoxic) drugs to destroy cancer cells. It works by disrupting the growth and division of cancer cells. The drugs may be taken as tablets or capsules or by injection into a vein (intravenously).

Chemotherapy is not as good at treating kidney cancer as some other treatments such as biological treatments. But you may be offered chemotherapy as part of a trial of new drugs, or in combination with a biological treatment. Fluorouracil (5FU) is one of the most commonly used chemotherapy drugs for treating renal cell kidney cancer. It is usually given in combination with interferon and aldesleukin.

Common side effects of chemotherapy drugs can include feeling more tired than usual and a temporary increase in your risk of infection. Other side effects may include feeling sick (nausea), vomiting and hair loss. Your doctor or nurse will tell you what problems, if any, to expect from your treatment.

Hormonal treatment for kidney cancer

Some people may be given the hormone progesterone to take daily as tablets. Progesterone treatment usually causes few side effects.

Any side effects are usually mild and can include an increased appetite and putting on weight. This treatment may reduce your sex drive. Fluid retention may also occur and you may notice that your feet and ankles become swollen. If this is a problem for you, it can be treated with drugs called diuretics.

Newer treatments for kidney cancer

Many new treatments are being tested for kidney cancer. They may be given to try to reduce the risk of cancer coming back after surgery (called adjuvant treatment), or to try to control kidney cancer that has spread. Because these treatments are still experimental they will usually only be available within clinical trials. If your doctor thinks there is a clinical trial which may be helpful for you, they can refer you to a specialist hospital where the trial is being run. You may have to travel a long way to the specialist hospital.

Immunotherapy

TroVax® is a vaccine that is being tested as a treatment for advanced kidney cancer. It is being tested with three treatments that are already used to treat kidney cancer: interferon, aldesleukin, and sunitinib.

A number of other vaccines are also being tested in clinical trials to see if they can help to stimulate the immune system to destroy kidney cancer.

Targeted treatments

Bevacizumab (Avastin®) is a type of treatment known as a monoclonal antibody and is given as a drip into a vein (intravenous infusion). It is being researched as a treatment for people with stage 3 or 4 kidney cancer when given in combination with interferon or aldesleukin. It works by blocking a special type of protein that can encourage cancer cells to make a new blood supply. This may help to slow the growth of the cancer.

Temsirolimus (Torisel®) is given as a drip into a vein (intravenous infusion). It blocks the function of a special protein (mTOR) that is found inside cells. The protein has an important role in regulating cell growth and survival. In clinical trials, temsirolimus has been used as a treatment for people who have advanced kidney cancer which has a higher risk of growing or spreading more quickly.

There are several other targeted therapies currently being developed. These may target either the cancer's ability to make its own blood supply (called angiogenesis), or the way in which the cancer cells respond to signals that affect their numbers, growth, or survival. Your doctor or specialist nurse can give you further information about newer treatments.

Research - clinical trials for kidney cancer

Cancer research trials are carried out to try to find new and better treatments for cancer. Trials that are carried out on patients are known as clinical trials. Clinical trials may be carried out to:

- test new treatments, such as new chemotherapy drugs, gene therapies or cancer vaccines
- look at new combinations of existing treatments, or change the way they are given, in order to make them more effective or to reduce side effects
- compare the effectiveness of drugs used for symptom control
- see which treatments are the most cost-effective
- find out how cancer treatments work.

Trials are the only reliable way to find out if a different operation or other treatment is better than those which are already available.

Taking part in a trial

You may be asked to take part in a treatment research trial. There can be many benefits in doing this. Trials help to improve knowledge about cancer and the development of new treatments. You will also be carefully monitored during and after the study. Usually, several hospitals around the country take part in these trials.

Blood and tumour samples

Many blood samples and bone marrow or tumour biopsies may be taken to help make the right diagnosis. You may be asked for permission to use some of your samples for research into cancer. If you are taking part in a trial you may also be asked to give other samples which may be frozen and stored for future use, when new research techniques become available. These samples will have your name removed from them (made anonymous) so you can't be identified.

The research may be carried out at the hospital where you are treated, or it may take place at another hospital. This type of research takes a long time, so you are unlikely to hear the results. The samples will, however, be used to increase knowledge about the causes of cancer and its treatment. This research will, hopefully, improve the outlook for future patients.

Living with kidney cancer

Follow-up after treatment for kidney cancer

After your treatment is completed, you may need to have regular check-ups at the hospital. Your doctor or specialist nurse will tell you how long you will need to have these for.

Many people find that they get very anxious in the time leading up to their appointments. This is natural and it may help to get support from family, friends or a support organisation during this time.

If you have any problems, or notice any new symptoms between follow-up appointments, let your doctor know as soon as possible.

For people whose treatment is over apart from regular check-ups, our section on adjusting to life after cancer treatment gives useful advice on how to keep healthy and adjust to life after cancer.

If kidney cancer comes back

In some cases, kidney cancer can come back after treatment. It may come back in the same area in which it first started (a local recurrence) or it may develop in a different part of the body (a metastasis or secondary cancer). If this happens, your doctor will explain the extent of the cancer and how it will be treated.

Learning that your cancer has come back can feel devastating. We have a section on coping with advanced cancer which you may find helpful. You may also find it helpful to contact our cancer support specialists.

Living with and after cancer

Emotional effects

Information on the emotions you might experience as a result of your cancer diagnosis, ways that you might manage them and other sources of support.

Relationships and communication

Advice on how to talk to other people, talking to children, relationships and sexuality.

Note: JASCAP has booklets on these subjects.

Questions you might like to ask your doctor

You can fill this in before you see the doctor or surgeon, and then use it to remind yourself of the questions you want to ask, and the answers you receive.

1. ______________________________

Answer ______________________________

____

2. ______________________________

Answer ______________________________

____

3. ______________________________

Answer ______________________________

____

4. ______________________________

Answer ______________________________

____

5. ______________________________

Answer ______________________________

____

JASCAP : We need your help

We hope that you found this booklet useful.

To help other patients and their families we need and intend to extend our Patient Information Services in many ways.

Our Trust depends on voluntary donations. Please send your donation by Cheque or D/D payable in Mumbai in favour of "JASCAP".

Note for Reader

This JASCAP booklet is not designed to provide medical advice or professional services and is intended to be for educational use only. The information provided through JASCAP is not a substitute for professional care and should not be used for diagnosing or treating a health problem or a disease. If you have, or suspect you may have, a health problem you should consult your doctor.

JASCAP

JEET ASSOCIATION FOR SUPPORT TO CANCER PATIENTS,
C/O ABHAY BHAGAT & CO., OFFICE NO.4, “SHILPA”,
7TH. ROAD, PRABHAT COLONY,
SANTACRUZ (East),
MUMBAI - 400 055.
PHONE: 91-22-2617 7543 & 91-22-2616 0007
FAX: 91-22-2618 6162,
e-mail: pkrjascap@gmail.com, abhay@abhaybhagat.com

AHMEDABAD: MR. D.K.GOSWAMY,
1002, LABH, SHUKAN TOWER,
NEAR JUDGES’ BUNGALOWS,
AHMEDABAD - 380 015.
PHONE : 91-79-6522 4287. Mob : 93270 10529
e-mail : dkgoswamy@sify.com

BANGALORE: MS. SUPRIYA GOPI,
“KSHITIJ”, 455, I CROSS,
HAL III STAGE,
BANGALORE – 560 075
PHONE : 91-80-2528 0309 .
e-mail : supriyakgopi@yahoo.co.in

HYDERABAD: MS. SUCHITA DINAKER & DR. M. DINAKER, M.D.,
FLAT NO. G4, 1ST. FLOOR, “STERLING ELEGANZA”,
STREET NO.5, NEHRUNAGAR,
SECUNDERABAD – 500 026.
PHONE : 91-40-2780 7295.
e-mail : suchitadinaker@yahoo.co.in