



Stereotactic Ablative Body Radiotherapy (SABR) for kidney cancer

This leaflet has been given to you to provide some written information about the treatment that is being planned for you, in addition to the explanations that you have received from your doctor. If you have any questions, please get in touch with the specialist radiographers (contact details can be found at the end of this leaflet).

Throughout your care there may be different health professionals who can guide and support you during and after treatment. To help you manage your care you will be allocated a 'key worker' during your treatment. Your key worker is a named person who can act as a point of contact. The key worker will be a member of the team who is currently involved in your care and may change during the course of your care as appropriate. The key worker will not provide all the care and support you need but will be able to put you in touch with the right people to help you or will help you to get the information you need.

The key worker will always be a trained health professional who may also have another role to play in your care. For example, it may be a clinical nurse specialist (CNS), radiographer, Macmillan nurse, doctor, community nurse, psychologist, physiotherapist, or social worker.

What is kidney cancer?

Renal cell carcinoma (RCC) is a kidney cancer that originates in the lining of the proximal convoluted tubule, a part of the very small tubes in the kidney that transport primary urine. RCC is the most common type of kidney cancer in adults, responsible for approximately 90–95% of cases.

What are the treatment options for kidney cancer?

The type of treatment depends on multiple factors and the individual, some of which include:

- The stage of renal cell carcinoma (organs and parts of the body affected/unaffected)
- Type of renal cell carcinoma
- Pre-existing or comorbid conditions
- Overall health and age of the person.

Every form of treatment has both risks and benefits; your health care professional will provide the best options that suit the individual circumstances.

Options include:

- Surgical removal (partial or complete nephrectomy)
- Ablative procedure (such as cryotherapy or radio-frequency ablation-RFA where the cancer cells are destroyed by freezing or heating)

- **Biological therapies** – medications that help stop the cancer growing or spreading
- **Embolisation** – a procedure to cut off the blood supply to the cancer
- **Radiotherapy** – Stereotactic ablative body radiotherapy (SABR) using CyberKnife or a linear accelerator radiotherapy machine. CyberKnife and a linear accelerator are described below.

You may have a combination of these treatments

Your team of doctors (surgeons and oncologists) will decide which treatment or combination of treatments is right for you based on the size and shape of your cancer. Your doctor will discuss the options with you in clinic. Occasionally, we may recommend starting the radiotherapy planning process and then, based on findings, decide the best option for you. If this is the case, we will ask you to come back to clinic so we can update you prior to your treatment starting.

What is Stereotactic Ablative Body Radiotherapy (SABR)?

Stereotactic ablative radiotherapy (SABR) is a way of giving radiotherapy. It is used to precisely target certain cancers. It is only suitable for some people, usually those with smaller cancers. SABR is given over fewer treatment sessions than conventional/standard radiotherapy, which may increase the chances of controlling the tumour at the treatment site and reducing pain more effectively than standard radiotherapy. In the same way that having a normal x-ray does not hurt, you will not feel anything whilst you are having radiotherapy.

It is extremely important that you are not pregnant or become pregnant during your course of radiotherapy. Even a small amount of radiation may damage an unborn foetus, so it is very important to let the radiographers know at once if you think there is even a possibility that you may be pregnant before any radiation exposures are given on the CT scanner or radiotherapy treatment units.

Having radiotherapy does not make you radioactive. There is no need to restrict your contact with other people, including children and pregnant women.

Why do I need to have SABR?

SABR (using CyberKnife or a linear accelerator) for kidney cancer has been recommended for you as a treatment option by your team of doctors to try and stop the cancer cells growing.

When is SABR given?

SABR is given in one or three alternate day treatments on a weekday. The treatment is delivered in the radiotherapy department in the Heritage Building, Queen Elizabeth Hospital Birmingham.

What needs to happen before I start SABR?

CyberKnife



If you are having treatment on the CyberKnife we would need to insert gold markers around the treatment area approximately 10-14 days prior to the planning scans.

The CyberKnife unit uses X-rays to monitor the position of your cancer during treatment. X-rays are good at showing bone and gold markers but not soft tissue, and this is why we need to implant some gold seeds/ markers around the lesion inside your kidney. These markers/seeds will remain in your kidney. The implantation is done using CT guidance with local anaesthetic. You will be awake during the procedure, but the area will be numbed so you don't feel the markers being inserted into your kidney. You will be asked to come in the morning to ambulatory care so that we can get you ready for the procedure. You will be discharged the same day after the markers have been inserted. You will not need to stay in the hospital overnight.

Linear accelerator – abdominal compression



At the first CT appointment, radiographers will take scans to assess internal movement of your kidney. If the motion is too great, they may need to use a piece of equipment to reduce this.

At the second CT appointment if abdominal compression is needed you will need to fast for 4 hours. **It is important that no more or no less than 4 hours fasting is done (this includes food and liquids). It is advised to have a small meal before you start this fasting time.**

There are two different types of equipment that the staff may use based on the first CT appointment:

Abdominal arch:



Abdominal belt:



An individual mould (hard bean bag) will be created for you to lie on for comfort, and your arms will be above your head holding onto bars.

The arch or belt will slowly be tightened to compress the tummy (not painful) to help reduce the motion of the internal organs and still allowing for comfortable breathing.

SABR using CyberKnife, or the linear accelerator radiotherapy machine, requires careful planning and preparation. You will need to have some further scans done to plan your treatment appropriately. This will include a planning CT scan with contrast (dye) which is done within the Radiotherapy department. This contrast may be injected, drunk, or both. Expect to be in the department for at least an hour for the planning scan.

The scans which are undertaken to plan your radiotherapy are solely aimed to give enough information to plan the radiotherapy accurately. These scans are not diagnostic and therefore do not give sufficient information to assess the status of your cancer or any other abnormalities. The planning scan will be performed with you lying in the position you will be treated.

Prior to the CT scan and each treatment (depending which treatment machine you will have treatment on), you will be required to fast for 4 hours. It is important that you eat something before you begin fasting. If you do need to fast, this will be explained to you before you attend for the appointments.

After the CT scan, with your permission, you will be given 3–5 permanent marks on the skin around the area of treatment (one on either side and one on your front). These are very small, around the size of a freckle but are permanent (pin-sized tattoos). We need these markers to ensure you are in the same position for treatment as you were for your planning scans.

The radiographers will give you the details of your first radiotherapy treatment appointment and show you where your treatment room is. They will try to accommodate you if you have a preference for morning or afternoon appointments, and can provide information on hospital transport for your treatment if necessary.

After your CT scan the team will plan your treatment. The planning is complex and time consuming so there will be a delay of at least one week between the CT scan and starting treatment.

What happens when I attend SABR treatment?

Your treatment will be on an outpatient basis either as a single treatment or three treatments. In the case of three treatments, treatment will be on alternate weekdays. You go home each day after treatment and each appointment normally takes between an hour or two.

The radiographers will explain what is going to happen and show you the radiotherapy machine. When all your questions have been answered, the radiographers will ask you to lie on the treatment couch and then move you into the correct position using the small permanent marks made at CT as a guide.

The radiographers will then take some images to confirm your position before they start the treatment. The treatment machine does not touch you at any point and you do not feel anything whilst the treatment is being delivered, but you may hear and see the machine moving. You must stay as still as possible.

During your treatment, the radiographers will continue to take and assess images to ensure your position remains perfect. Assessing these images may take some time and need discussion with

other members of the team. These images involve a very small additional radiation dose, but are essential to ensure accurate treatment.

The radiographers cannot stay in the room with you whilst the machine is on, but they are operating the machine and watching you all the time on CCTV cameras. If for any reason you need the radiographers, simply call out and they will immediately stop the treatment and come in. You are welcome to bring some music with you so you have something to listen to whilst you have your treatment.

CCTV

The treatment room is monitored during your preparation for treatment, positioning and treatment delivery by television cameras. This helps ensure the accuracy of your treatment and your safety and wellbeing in the room. We assure you that the camera image feed is live and it is not possible to make a recording. The images are viewable on screens situated in the machine control areas. The control areas are only accessed by authorised staff, some of whom may not be directly involved in your care at that time. If you have any concerns about your privacy or dignity that you have not already discussed, then please do not hesitate to highlight your concerns during the information discussion with the radiographers at your first appointment.

What side effects may occur after my SABR treatment?

SABR treatment has relatively few side effects, and the side effects that do occur can differ between patients. Likely side effects are nausea, sickness and diarrhoea. There is 10% risk of serious bowel damage.

Your consultant will discuss the possible side effects in more detail before you consent to treatment. If you have any concerns with side effects, either those mentioned above or those that may arise through discussion, please do contact your consultant or key worker.

Following treatment

You will have a follow-up appointment with your consultant 4–6 weeks after your SABR treatment.

Other information

Car parking

Car Park D is directly opposite the doors to the Cancer Centre. Please park here and bring in the ticket you have taken to access the car park with you. The radiographers in the treatment room will exchange this for a pre-paid ticket so that you can exit the car park without paying. **You will need to provide your car registration number to get the pre-paid ticket.** This free car parking arrangement has been negotiated for patients who are attending for radiotherapy planning or treatment appointments only. The radiographers will not be able to give you a ticket if you are attending for a follow-up appointment.

Contact details

CyberKnife radiographers: Tel 0121 371 5060

If there is no answer then please leave a message so one of the radiographers can call you back. This telephone will be checked regularly throughout the week but is not checked at weekends.

Linear accelerator treatment machine

Your treatment appointment card given on the day of your planning CT scan will have the number of the treatment room you will have SABR on.

Radiotherapy department

Queen Elizabeth Hospital Birmingham
Mindelsohn Way, Edgbaston
Birmingham, B15 2GW
Telephone: 0121 371 5081

Accessibility

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