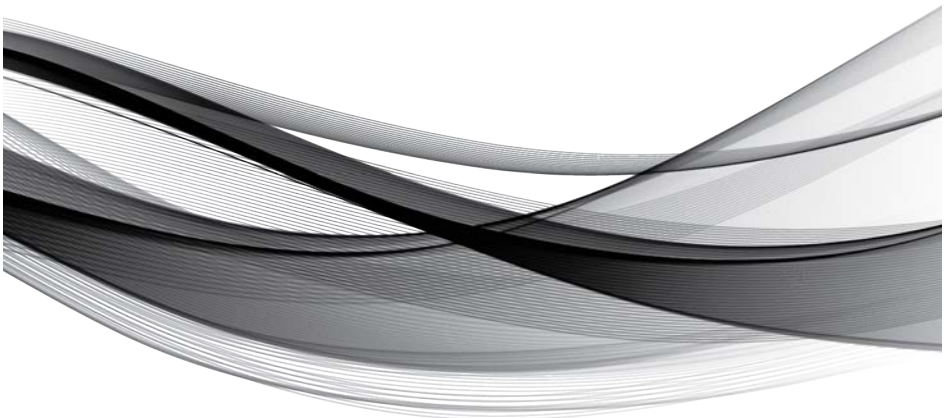


Selective Internal Radiation Therapy (SIRT)

Information leaflet for patients who are undergoing SIRT treatment for liver cancer.



Why have I been given this information leaflet?

We have given you this leaflet because your consultant believes you would benefit from a cancer treatment called selective internal radiation therapy (SIRT). In this leaflet we will explain:

- what SIRT is
- how the procedure works, and
- what the risks and potential benefits of the treatment are.

Hopefully this will help to answer any questions you have and may make you think of things you would like to discuss with your healthcare team.

What is Selective Internal Radiation Therapy (SIRT)?

SIRT is a type of internal radiotherapy that can be used to treat liver tumours with high doses of radiation. Unlike external beam radiotherapy, the radioactivity is injected directly into the tumours.

SIRT is usually given in two stages:

- Planning stage
- Treatment stage

In both stages the radioactivity is delivered through a long thin tube (catheter) in your groin.

How does the treatment work?

Tiny radioactive beads (called microspheres) are delivered directly into the blood vessel of the liver through the catheter. These then get stuck in the small vessels feeding the tumour, blocking its blood supply as well as delivering radiation directly to the tumour. This damages the cells and can shrink the tumour. This in turn has been shown to improve survival in patients with liver cancer.

The radiation from the beads travels very short distances (millimetres) and is effective against the tumour for up to two weeks. The dose given in each session is individualised to you. It is calculated to be the most effective against the tumour cells while minimising the damage to the surrounding healthy liver cells.

Why do I need SIRT?

This procedure is normally for patients who have tumours in their liver. This is usually a primary cancer arising in the liver (Hepatocellular carcinoma), or sometimes a tumour that has spread to the liver (metastatic cancer) from elsewhere in the body. You will probably have had other treatments for your cancer so far like chemotherapy, Transarterial Chemoembolisation (also known as TACE) or surgery. Your doctors believe you may also benefit from this targeted therapy.

What are the benefits of SIRT?

- Targets liver tumours while keeping damage to healthy liver to a minimum.
- Delivers much higher radiation over a longer period than would be possible with external beam radiotherapy.
- When used together with chemotherapy it may shrink tumours more than chemotherapy would on its own.
- Shrinking the tumours may help to provide relief from symptoms of the tumour and improve your quality of life.

How is the treatment carried out?

Your treatment is carried out in two stages: a planning stage where we will look at the blood supply to your liver and the tumours using X-rays. This is a procedure called an angiogram. At this stage we will also block (embolise) any small vessels that go to other organs, such as the lungs or stomach. This will help protect your healthy organs from the radioactive beads we will deliver in the treatment stage.

In the second stage we deliver the treatment through the same liver artery. This will typically be 3 to 4 weeks after your planning angiogram.

Who will do it?

SIRTs are performed by a multi-disciplinary team of specialists: A doctor called an Interventional Radiologist; Nuclear Medicine Physicists, Therapy Technologists, Radiographers and Nurses.

Where will it take place?

The SIRT will be administered in a specialist screening room in the X-ray Department.

Is there any special preparation beforehand?

- Usually, you will come into hospital the day before the procedure. We will take routine blood tests.
- You cannot eat for 6 hours before the procedure, but you may drink small amounts of clear fluid up to 2 hours before the procedure.
- You will need to undress and wear a hospital gown.

Consent

We will ask you to sign a consent form before the procedure. Please make sure that you ask any questions you may have. When signing the form, you should know what we plan to do, alternative treatments, and any risks or complication of the procedure.

What happens during the Planning Stage?

1. This is a sterile procedure. You will need to lie on your back on the x-ray table.
2. We will give you a sedative or painkiller via a needle in your arm. We will monitor your vital signs (blood pressure, pulse, oxygen intake). You may need oxygen.
3. The Radiologist will clean the skin and inject local anaesthetic into your groin and then they place a fine plastic catheter in the artery through a very small cut.
4. The Radiologist passes the catheter through the artery to the liver under x-ray guidance. They inject dye (contrast) through the catheter and take x-rays to identify the tumour.
5. Once they have chosen the artery they will use for treatment, the other vessels are blocked which will prevent the radioactive spheres from travelling elsewhere in the liver.
6. A radioactive "dye" closely resembling the treatment is then injected through the catheter.
7. When the procedure is completed, we will remove the catheter and apply pressure to the groin to prevent bleeding.
8. We will then take you to nuclear medicine for imaging to check how much radioactivity will be absorbed by the tumour and how much by the healthy liver. This allows us to calculate the correct amount of radioactive microspheres needed for the treatment stage.

What happens during the Treatment Stage?

1. We will take you back to the specialist screening room (this is the term used earlier) where we will perform the same procedure as during the planning stage to place the catheter in the correct artery. If you do not need any additional coils, your treatment will be delivered to the tumour through the catheter.
2. After your procedure we will take you back to the ward for monitoring overnight.

How long will it take?

This can vary for a number of reasons; however, you can expect to be in the x-ray department for one to two hours.

What happens afterwards?

After both the planning and therapy procedures, you will return to your ward and remain on bed rest for a few hours. The nursing staff will monitor you and carry out routine observations (blood pressure, pulse etc). A few hours after the procedure you will be able to eat and drink.

After the planning procedure, if you feel well, you will normally go home 24 - 48 hours later.

After the therapy procedure, you will remain on the ward under observation. The following morning, we will take you to the PET imaging centre for a PET-CT scan. These images allow us to visualise the radioactivity in your tumours. Once you return to the ward, and if you feel well, you will be able to go home. We will give you information about the radiation restrictions specific to you.

Radiation safety – what are the special precautions?

We will only give you radiation restrictions after the SIRT treatment. SIRT uses beta radiation, which is almost entirely absorbed within the body, however you will emit a small amount of radiation from your liver. Your urine and other bodily fluids may also contain some radioactivity for a short time following your treatment. Because of this, there are some precautions and special measures you must take to protect your friends and family.

- Avoid close contact with children and people who may be pregnant for up to 1 week.
- Avoid sharing a bed with someone for up to 1 week.
- Where possible, avoid long journeys on public transport for up to 1 week. When travelling keep as far away from people as possible.
- Avoid going to places where you might be sitting close to someone for several hours (e.g. cinemas, pubs, churches etc.) as you do not know who may be pregnant around you.
- Wash your hands thoroughly after using the toilet and take care to clean any spills safely.
- Maintain high levels of personal hygiene.

We will go through your exact restrictions with you and answer any radiation safety questions you may have on the day of your procedure.

What are the potential side effects?

SIRT is generally well tolerated by most people. However, as with most treatments and drug procedures, there are some risks and possible side effects.

Common side effects

Side effects from SIRT are usually mild. The most common side effects after a SIRT procedure are:

- Tiredness (fatigue)
- Loss of appetite
- Mild temperature (fever)
- Tummy (abdominal) pain
- Feeling sick (nausea)
- Bruising around catheter site

These usually settle within a week. You can take painkillers and anti-sickness medication to relieve symptoms.

Effects on other organs

In rare cases, some of the radioactive beads may travel to other organs in the body, like the gall bladder, stomach, or intestines and may cause inflammation or ulceration. If that happens, you could get abdominal pain or bleeding from the stomach or intestine. These are usually resolved with further medical treatment.

We will go through the potential side effects as well as the risks and benefits of SIRT during your appointment.

Radiation-induced liver disease (RILD)

This is a rare complication but can be very serious. If the radiation damages too much of the healthy liver tissue, your liver may stop working properly. Your personalised treatment dose is calculated to minimise the damage to healthy liver and reduce risk of RILD.

What do I do if I experience any side effects?

Tell your doctor if you experience any side effects, no matter how small these may seem. They will be able to help relieve your symptoms or get you further treatment if required.

Pregnancy and breastfeeding

Before Treatment

We avoid doing SIRT on patients who may be pregnant or who are breastfeeding. This is because of the radiation exposure to the baby. Please let a member of your healthcare team know immediately if you are:

- Pregnant
- Think you could be pregnant
- Breastfeeding

After Treatment

Individuals undergoing SIRT should avoid becoming pregnant or fathering a child for 6 months after the treatment.

Who do I contact for more advice?

If you have any questions or want more information regarding radiation risks, please contact the Nuclear Medicine department on ☎ **0141 301 7900** and ask to speak to a member of the Therapy team.

Alternatively, you can find further information on SIRT from the links below:

My SIRT Story

For information leaflets and individual SIRT patient experiences visit 🌐 www.mysirtstory.org.uk/index.htm

Macmillan Cancer Support

For advice from a specialist nurse, booklets, benefits etc. call ☎ **0808 808 0000** or visit 🌐 www.macmillan.org.uk

Cancer Research UK

For information and facts about cancers and treatment choices visit 🌐 www.cancerhelp.org.uk

British Liver Trust

Call: ☎ **01425 463 080** or visit 🌐 www.britishlivertrust.org.uk

How did we do?

We are always looking to improve our service and are happy to hear any comments or suggestions you have about any aspect of your stay in hospital.

Feel free to speak to a member of staff or you can use our online feedback system at www.nhsggc.scot/contact-us/get-involved/share-your-feedback/

There you can complete an online feedback form or provide anonymous feedback via Care Opinion.



Notes
