My SIRT story

Patient information:

About SIRT

Selective Internal Radiation Therapy (SIRT)

SIRT (also known as radio-embolisation) is a special type of internal radiotherapy that targets liver tumours inside the body with high doses of radiation.

It involves injecting millions of tiny radioactive 'beads' called microspheres into the main blood vessel of the liver through a long thin tube (catheter). The microspheres are smaller than the width of a human hair and can only be seen under a microscope.

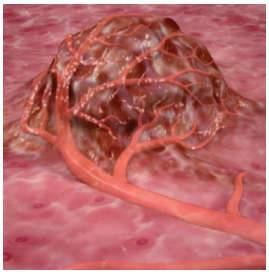

Image of microspheres being delivered into the blood vessels in and around a liver tumour

The microspheres travel to the liver where they lodge themselves in the very small blood vessels in and around the liver tumours where they give off high doses of radiation. As the microspheres only give off radiation to a small area they target the liver tumour while doing little damage to the surrounding healthy liver tissue. The action of the radiation destroys the liver tumour cells causing the tumours to shrink. The radiation has a useful effect on the tumour for about two weeks.

A dose of treatment will be used that is effective against the tumour but causes minimal or no damage to the normal liver tissue. Although after two weeks, only three per cent of the initial useful radiation remains and after one month it has all gone, the effects of the radiotherapy on the cancer last much longer than this. The microspheres stay in the liver permanently but they are harmless.

What cancers can be treated?

SIRT is used to treat liver tumours that cannot be removed by surgery. The two commonest uses of SIRT are to treat liver tumours that have spread from the bowel and primary liver cancer (tumours that started in the liver).

It is also possible to treat a variety of other cancers that have spread to the liver from other parts of the body, for example liver cancer that has spread to the liver from the breast. The most important thing is for your doctor to assess your condition and to see if SIRT would be suitable.

Benefits of SIRT:

- Targets liver tumours directly with radiation while minimising damage to the surrounding healthy liver
- Delivers much higher doses of radiation over much longer periods of time than would be possible with external beam radiation
- Delivers a radiation dose that is well below the limit the healthy liver tissue can tolerate without serious damage

SIR-Spheres microspheres

SIR-Spheres microspheres are the tiny radioactive resin microspheres that are most commonly used in the SIRT procedure. Each microsphere has a radioactive substance called yttrium-90 (Y-90) attached to it.

Image of a container of SIR-Spheres microspheres. The microspheres are less than a third of the thickness of a human hair in size.

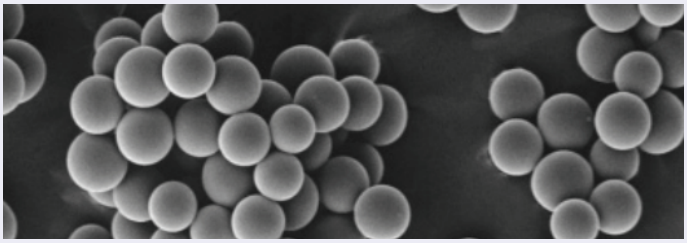

Image of SIR-Spheres microspheres under a microscope.

How effective are SIR-Spheres microspheres?

SIRT using SIR-Spheres microspheres has been shown to extend life, improve quality of life and in some cases shrink tumours so much that they can be surgically removed or ablated. A summary of the evidence from studies on microspheres is provided below.

- SIR-Spheres microspheres are safe to use to treat liver tumours [1, 2]
- SIR-Spheres microspheres can treat tumours in the liver that cannot be removed by surgery [1, 2]
- SIR-Spheres microspheres can reduce the size of liver tumours [1, 2]
- SIR-Spheres microspheres improve survival by about five months in patients with bowel cancer that has spread to the liver and who have failed previous chemotherapy [3, 4]
- In combination with chemotherapy, SIR-Spheres microspheres can reduce the size of liver tumours, increase life expectancy and improve quality of life for patients with bowel cancer that has spread to the liver [5-10]
- In some case, SIR-Spheres microspheres can reduce the size of tumours so much that they can be surgically removed [11-25]

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What are the side effects of SIRT?

Almost all treatments and drugs produce unwanted side effects. Everyone is unique and it is not possible to predict what side effects will occur after a SIRT procedure — some people may have a few side effects while others may be more affected. It is important to discuss the potential benefits and risks of treatment with your doctor so you will have realistic expectations of your treatment. The side effects of SIRT are generally mild. The most common side effects following a SIRT procedure are:

- **Tiredness:** This is one of the most common effects and can last for up to six weeks. If you are feeling tired it is important to listen to your body and get some rest. Tiredness usually subsides after a few weeks
- **Loss of appetite:** This is one of the most common effects and can last for about six weeks
- **Mild fever:** This is commonly seen and may last for up to a week
- **Tummy pain:** You may feel some pain or tightness in the tummy. You may be given medication for a month after the procedure to treat inflammation of the stomach and stomach ulcers
- **Sickness:** This may last for one to two days. Your doctor may prescribe some antisickness tablets (anti-emetics) to help you feel better
- **Soreness:** You may experience some bruising or a small lump where the catheter went into your groin. If this gets worse, be sure to tell your doctor
- **Diarrhoea:** This is usually mild and does not usually require treatment

Rare to uncommon side effects:

In rare instances, a small number of the radioactive microspheres may inadvertently reach other organs in the body, such as the gallbladder, stomach, intestine, or pancreas causing inflammation or ulceration that can be troublesome and difficult to treat. These complications are rare, but if they do occur they will require additional medical treatment.

As with any other treatment options that are used to extend the survival of patients with cancer, SIRT can cause severe side effects that in extremely rare cases can lead to death. You will be treated by a doctor who is specially trained in SIRT to minimise the risk of these side effects from happening.

Effect on unborn children

Patients must not receive SIRT treatment if they are pregnant, and must not become pregnant (or father children) within two months of receiving the treatment.

It is important that you tell your doctor about any side effects no matter how small they may seem, especially if you notice any worsening of symptoms.

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