

Vascular & Interventional Radiology Queensland

Selective Internal Radiation Therapy

Patient information

What is it?

Selective Internal Radiation Therapy (SIRT), or transarterial radioembolisation (TARE) is a minimally invasive treatment for hepatocellular carcinoma (HCC) or liver metastases, where ionising radiation - yttrium-90 (Y-90), is used to treat tumours.

Who is it for?

This procedure is for people with inoperable cancer affecting their liver, either a primary liver cancer like hepatocellular carcinoma (HCC), or a tumour that has spread to the liver (metastasis). SIRT is used to extend a patient's life expectancy but can also be used to bridge patients to liver transplant or surgery.

How is it done?

SIRT is usually performed under sedation in an operating room with specialised medical imaging equipment.

Typically this treatment is done in two separate procedures 2 weeks apart. The initial procedure is done to define the anatomy of the arteries of the liver and measure any shunting of blood between the liver and lungs so that the correct dose of radiation is delivered. Sometimes it is also necessary to block off any arteries at this time to protect other organs from the radiation delivered to the liver. The second procedure involves delivering the treatment of radiation into the liver.

Your interventional radiologist will use an ultrasound to guide a tube into the artery at either the groin or wrist. They will then pass a catheter (thin plastic tube) into the arteries that supply the liver and inject x-ray dye (contrast) and map a path to the tumour to be targeted. A very fine catheter (microcatheter) is then passed into the artery supplying the tumour and small particles filled with Y-90 are slowly injected. These particles emit radiation into the liver for a few weeks, causing the tumour to shrink.

What are the risks?

Most patients experience a degree of postradioemolisation syndrome, which may include fatigue, low-grade fever, nausea, vomiting or abdominal discomfort. Rare side effects include liver failure or damage to the stomach, pancreas or gallbladder. Your doctor will discuss these risks with you before your operation.

Follow up

You will be scheduled for follow up imaging and clinic appointment with your interventional radiologist about 6 - 8 weeks afterwards to review the success of the procedure.

