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Selective Internal Radiation therapy (SIRT) in the Angiography Suite

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Patients with isolated colorectal cancer (CRC) liver metastases require surgical resection as the treatment of choice when feasible. Unfortunately most patients are not surgical candidates for this treatment option due to tumour size, location, multifocality or insufficient hepatic reserve. One of the several nonsurgical treatment options available to patients who are unable to receive resection who have liver-isolated CRC metastases is a procedure known as Selective Internal Radiation Therapy (SIRT) also known as transarterial radioembolisation or radioembolisation. SIRT is a minimally invasive procedure performed in the angiography suite (similar to theatres) by an Interventional Radiologist (proceduralist). There are two parts: “work up” phase where the patient is assessed as an outpatient for suitability for the procedure then patient specific dose is ordered followed by the SIR-Spheres Y-90 resin microspheres implantation phase both performed in the angiography suite. The multidisciplinary team ensure that the patient is as comfortable and safe for the procedure ensuring an optimised journey during this vulnerable period for the patient. The radiologist initially gains arterial access through the groin which may be ultrasound guided and is followed by the introduction of guide wires and a thin catheter. Once the doctor identifies the hepatic artery which is the primary blood supply feeding the liver tumours, millions of radioactive microspheres or SIR-Spheres are implanted via the catheter directly to the liver tumours. The microspheres are about one third the diameter of a strand of hair in size. Beta radiation is a common type of radiation used in nuclear medicine therapy and diagnostic procedures. This procedure takes advantage of the fact that the portal vein is the primary blood supply for normal liver parenchyma and by selectively irradiating tumours, the surrounding healthy tissue will be relatively unaffected. The patient would normally have a baseline CT/ PET scan prior to the procedure followed by a progress scan between four weeks and three months post treatment. Although this treatment is not a permanent cure, there is a greater possibility for patients who have primary or secondary liver cancer to increase survival benefit in combination with quality of life and potentially undergo liver tumour resection or liver transplant as the tumour size reduces especially when combined with standard chemotherapy. Although this is normally a single treatment, some patients may be retreated with SIR-Spheres and procedural complications including pain and nausea may be treated with analgesia and antiemetics. Reduced appetite, fever or tiredness may also be experienced by the patient for several days post procedure though it is encouraged to maintain a healthy balanced diet.

Biography

Grace Moscatelli has completed her Bachelor of Nursing at University of Western Sydney and is currently studying Bachelor of Nursing with Professional Honours Specialising in Anaesthetic and Recovery Nursing at University Of Tasmania. She is a Registered Nurse working in the Radiology, Nuclear Medicine and PET department at a local Sydney hospital in Australia. She has presented at Medical Imaging Nurses Association National Conference in Melbourne in 2017.

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