

Out-of-hours guidance for Y-90 SIRT patients

You may have been directed to this page as you are caring for a patient who has had Yttrium-90 SIRT treatment. This may be under the brand name SIRspheres, Theraspheres, or may be through different clinical trials. This treatment uses **radioactive materials** and so the patient will be radioactive for some time following treatment.

The guidance below is relevant for patients wearing a TEAL wristband with “Radioactive Yttrium 90 Nuclear Medicine UHBW” on it or are carrying a teal card with a QR code leading to this document.

How to use this guidance

All patients will have received an instruction card which gives details about the date of their administration of Y-90 SIRT. This should be on their person, or a relative or patient themselves may be able to advise. This information is important as advice for handling the patient varies depending on the length of time since treatment. If unsure, follow the guidance below for ‘Day 0 – day 1 since administration’.

For further advice

The guidance below provides initial guidance on how to safely treat Y-90 SIRT patients. **For further advice please contact your local Nuclear Medicine or Molecular Therapy department**, Radiation Protection Adviser or UHBW Nuclear Medicine on 0117 34 29359 during working hours.

Y-90 SIRT treatment information

Y-90 SIRT treatment is a radioactive treatment. It is a pure beta radiation emitter that also produces Bremsstrahlung radiation (like X-rays), so there is a potential hazard due to external radiation from spending prolonged contact with the patient. Also, the patient’s urine may be slightly radioactive, so there is an external radiation hazard from handling urine (e.g. in a catheter bag) and an internal radiation hazard from ingesting radioactive contamination (e.g. from handling urine spills without gloves and inadequately washing hands). The patient’s blood may also be slightly radioactive.

The radiation risk reduces as time elapses after treatment.

Patients are treated in Bristol from across the UK, so a patient may attend another hospital for further care.

Care of a patient attending for emergency care or requiring in-patient care

Immediate emergency care of the patient should not be compromised because of the radiation hazard.

Day 0 – day 1 since administration

Contact with patient:

The patient should be placed in a single room, if possible, ideally with own toilet and shower/washbasin. If this is not possible then the allocated bed should be at least 2 m from another patient's bed/nursing station, with 1 m between the bed and any visitor's chairs

It is recommended for staff to limit close contact with the patient where possible.

- If not directly attending to patient, try and keep at least 2 m away
- Limit close contact where possible
- Standard hygiene precautions should be followed as normal, including use of Personal Protective Equipment (PPE)
- Wash hands well with soap and water after any contact with the patient
- Consider keeping pregnant staff from nursing the patient if possible (for peace of mind, rather than because of significant radiation risk)

Bodily fluids:

Urine may be slightly radioactive and should be handled and disposed of with care. **When dealing with urine wear standard PPE including double gloves and remove and replace outer gloves if contaminated with urine.** Faeces, blood, and vomit may be slightly radioactive and are less of a concern.

- If patient is able, encourage them to use the toilet rather than a bed pan. They should sit to urinate. The toilet should be flushed twice after use.
- If a bed pan is used, dispose of carefully down a toilet or sluice, flushing twice.
- If a catheter is used, empty bag frequently, disposing of urine as above.
- Any waste that is collected should be kept separately, labelled as 'Radioactive, not for disposal'. Contact your local Molecular Therapy or Nuclear Medicine department for advice on local practice for disposal.
- Any linen that is contaminated with bodily fluids should be bagged and kept separately, labelled as 'Radioactive, not for disposal.' Contact your local Molecular Therapy or Nuclear Medicine department for advice on local practice for disposal/laundrying.
- Avoid taking urine, blood, and faecal samples if possible (although this should not be detrimental to patient's treatment). If necessary, label as 'Radioactive' and alert pathology in advance for them to follow safe handling techniques (using appropriate PPE). The sample may need to be disposed of as radioactive waste so again follow local practice.

Contamination of an area with bodily fluids:

If a large area (e.g. floor) becomes contaminated with bodily fluids (particularly urine) use double gloves, sleeves/gowns with arms, overshoes, while clearing up and bag all waste separately labelled as 'Radioactive, not for disposal.' Contact your local Molecular Therapy or Nuclear Medicine department for advice on local practice for disposal/laundrying.

Surgery:

For any surgical intervention involving the liver:

- Do not proceed without taking advice from your local Molecular Therapy or Nuclear Medicine department.

For any surgical intervention involving physical contact in the immediate vicinity (ie within 2-3 cm of liver):

- If possible, take advice from your local Molecular Therapy or Nuclear Medicine department prior to procedure.
- In urgent cases: Standard PPE/universal hygiene precautions must be used, **plus** a second pair of gloves. Store all clinical waste from procedure separately, labelled as 'Radioactive, not for disposal.' Contact your local Molecular Therapy or Nuclear Medicine department for advice on local practice for disposal.

Death of patient: See below

Day 1 – Day 30 since administration

Contact with patient: It is safe for staff to have a normal level of close contact with the patient. Standard hygiene precautions should be followed as normal, including use of PPE.

- Wash hands well with soap and water after any contact with the patient.

Bodily fluids: These are no longer radioactive and can be treated as normal.

Surgery: See 'Surgery' above for advice.

Death of patient: See 'Death of Patient' below

Death of patient:

- **Burial:** There may be restrictions on cremation. **Please contact your local Radiation Protection Adviser or contact the Molecular Therapy Department, Bristol** who will be able to advise on a suitable delay period. There may be a delay of up to 6 days from time of death if patient dies shortly after administration, although likely to be less than that. Follow 'contact with patient' guidance above for appropriate time since administration.
- **Cremation:** There may be restrictions on cremation. **Please contact your local Radiation Protection Adviser or contact the Molecular Therapy Department, Bristol** who will be able to advise on a suitable delay period. There may be a delay of up to 16 days from time of death if patient dies shortly after administration, although likely to be less than that.
- **Handling and storage of body:** If patient dies within 24 hours of treatment follow 'contact with patient' guidance above for Day 0 – day 1 since administration. There are no restrictions on handling or storing the body after this time if no invasive procedures are carried out. Universal hygiene precautions provide sufficient protection.
- **Post-mortem/embalming:** For up to 6 weeks post administration, contact a Radiation Protection Adviser or the Molecular Therapy Department, Bristol, for advice as they will be able to provide advice specific to the procedure being carried out.

Legislative requirements

As you are now working with radioactive materials you may need to register with, or notify, the Health and Safety Executive that you are doing so. Please contact your local Radiation Protection Adviser, Nuclear Medicine/Molecular Radiotherapy department or UHBW Nuclear Medicine on 0117 34 29359 during working hours for advice.