

## University Hospitals Bristol and Weston NHS Foundation Trust Bristol Haematology and Oncology Centre

### Out-of-hours guidance for Lu-177

You may have been directed to this page as you are caring for a patient who has had Lutetium-177 treatment. This may be under the brand name Lutathera, PSMA, or may be through different clinical trials.

The guidance below is relevant for patients wearing an ORANGE wristband with 'Lu-177 – search 'Molecular Radiotherapy Bristol'' on it, or are carrying a card with the same search direction or QR code.

### Contents of guidance

- 1 How to use this guidance
- 2 For further advice – contact details
- 3 Lu-177 treatment information
- 4 Care of a patient attending for emergency, or in-patient care  
*Includes*
  - Contact with patient
  - Bodily fluids and radioactive contamination
  - Surgery advice
- 5 Death of patient
- 6 Legislative requirements

### 1 How to use this guidance

All patients will have received an instruction card which gives details about the date of their last administration of Lu-177. 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 3 since administration'.

**This advice has been written for health professionals across the UK.**

**For UHBW staff consulting this guidance.** This guidance is only applicable for patients that have returned to hospital after their discharge. Please also see 'Local Rules for Ward and other Department Staff (including ED)', on DMS. Other nursing guidance applies when they are an inpatient in the radiation isolation rooms on D603: 'Nursing Protocol WI 844' on DMS <http://nww.avon.nhs.uk/dms/download.aspx?did=8847>.

### 2 For further advice

The guidance below provides initial guidance on how to safely treat Lu-177 patients. **For further advice please contact your local Nuclear Medicine or Molecular Therapy department**, Radiation Protection Adviser or Molecular Radiotherapy Bristol on 0117 3422694 during working hours.

### 3 Lu-177 treatment information

Lu-177 treatment is a radioactive treatment. It is a mixed beta and gamma radiation emitter, so there is a potential hazard due to external radiation from spending too long in close proximity to the patient. Also the patient's urine, in particular, will be 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 radiation risk reduces as time elapses after treatment.

Bristol Molecular Radiotherapy treats patients across the UK so a patient may attend another hospital for further care.

### 4 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 3 since administration

##### **Contact with patient:**

The patient should be placed in a single room if at all 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 very close contact with the patient where possible.

- If not directly attending to patient try and keep at least 2 m away
- Limit very close contact where possible
- Avoid the same nurse attending to patient for multiple shifts during the initial 3-day period
- 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 is particularly 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 which is contaminated with bodily fluids 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 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.
- Blood and faecal samples are only mildly radioactive and can be handled as normal.

### 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. Cover the area e.g. with incontinence pads taped to the floor and seek advice from your local Molecular Therapy or Nuclear Medicine department.

### Surgery:

For any surgical intervention involving the kidneys/urinary tract/tumour:

- standard PPE/universal hygiene precautions must be used, **plus** a second pair of gloves. Change outer gloves if contaminated with urine.
- Tissue excised from tumour will be radioactive and should be directly handled as little as possible. It should be labelled as radioactive if being sent for analysis (see samples or waste advice above).
- waste should be bagged and labelled as above, and disposed of as per local protocols – contact your local Nuclear Medicine or Molecular Therapy department

For surgery of a pathologic fracture after Lu-177 treatment of bone metastases (e.g. PSMA):

For any surgical intervention where bone dust may be generated (e.g. bone sawing/drilling) – there is a potential radiation hazard from inhaling radioactive bone dust. There is also a contamination risk from drilling into radioactive bone marrow.

- An approved orthopaedic theatre with adequate functioning ventilation (preferably laminar flow) should be used
- Theatre staff should wear well-fitting face masks, including during clearing up post-procedure. A Stryker mask may be appropriate.
- standard PPE/universal hygiene precautions must be used
- Care should be taken to avoid spreading blood generated by drilling into bone marrow around theatre area. Cleaning of the theatre should be supervised by a radiation professional.
- waste should be bagged and labelled as above, and disposed of as per local protocols – contact your local Nuclear Medicine or Molecular Therapy department

**Death of patient:** See below

### Day 4 – 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:** Urine is still radioactive. See ‘bodily fluids’ above for advice.

**Surgery:** See ‘Surgery’ above for advice.

**Death of patient:** See ‘Death of Patient’ below

### 5 Death of patient:

- **Burial:** There are no restrictions on **burial** of a patient at any time after treatment. 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 4 or 5 weeks 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 3 days of treatment follow ‘contact with patient’ guidance above for Day 0 to Day 30 since administration. There are no restrictions on handling or storing the body after this time as long as 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.

### 6 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 Bristol Molecular Radiotherapy on 0117 3422694 during working hours for advice. (Not applicable to UHBW).