Patient information

Mount Vernon Cancer Centre

NHS
East and North Hertfordshire Teaching NHS Trust

Lutetium-177 PSMA radionuclide therapy

Introduction

This leaflet gives information for patients considering Lutetium-177 PSMA for the treatment of metastatic prostate cancer.

If anything in this leaflet is unclear, please contact the Nuclear Medicine Department (see contact numbers at the end of this leaflet), and the staff will be happy to assist you.

What is Lutetium-177 PSMA therapy?

Lutetium-177 PSMA Therapy, or Prostate-Specific Membrane Antigen Therapy, is an new therapeutic procedure that is increasingly being used for people with advanced prostate cancer. This is a type of “Peptide Receptor Radionuclide Therapy”.

Lutetium-177 PSMA treats prostate cancer cells around the body. It can reduce the size of tumours and improve the symptoms caused by the prostate cancer. It is most often used when the prostate cancer has metastasised (spread to other parts of the body) and when other therapies are either poorly tolerated due to side effects or are no longer effective at controlling the prostate cancer.

This treatment is used for people with metastatic castration-resistant prostate cancer (mCRPC), which means the cancer has spread and is no longer responding to hormone therapy. The treatment is delivered by infusion into the vein and may be repeated for up to six treatments, booked 6 weeks apart.

How does Lutetium-177 PSMA therapy work?

PSMA is a type of protein found on the surface of prostate cancer cells, although it is also present in a lower degree on normal cells. Lutetium-177 PSMA therapy uses a specifically designed molecule which attaches itself to the PSMA receptors in your body, therefore binding to the prostate cancer cells.

The therapy transports Lutetium-177, a radioactive substance, directly to the tumour sites. The radioactivity of the Lutetium-177 is, thus, delivered to the tumours where it damages or destroys the cancer cells in a targeted way. This means that the rest of the healthy tissue of the body is less exposed to significant amounts of radiation.

Is the treatment safe?

All treatments and procedures have some risks and side effects, and we will talk to you about the risks and benefits of Lutetium-177 PSMA therapy at your appointment.

The radiation used in this therapy is designed to carry radiation to prostate cancer cells to damage and kill them. However, aside from the prostate gland and prostate cancer cells, PSMA is also found in a low degree in other areas of the body such as the salivary gland, lacrimal (tear) glands, kidneys and small intestine. There is, therefore, a low risk that the PSMA therapy can also carry damaging radiation to these healthy areas. Any damage to these areas, however, is minimal.

Where will I receive the treatment?

The treatment is given in the Nuclear Medicine Department at Mount Vernon Hospital. The hospital entrance that is closest to this department is Gate 1.

The easiest route is through the main entrance of the hospital, turn left and with your back to the main staircase, turn left again (staying on the ground floor). Walk to the end of the corridor, where you will see the signs to the Nuclear Medicine Department.

Or you can use the door into the corridor to the left of the main entrance. This gives better access for disabled people. Through this doorway, turn left and follow the signs as before to the Nuclear Medicine Department.

Will I have to sign a consent form?

Yes. We want to involve you in all the decisions about your care and treatment. If you decide to go ahead with this treatment, we will ask you to sign a consent form. This confirms that you agree to have the treatment and understand what it involves.

Staff will explain all the risks, benefits and alternatives before they ask you to consent to this treatment. If you are concerned or unclear about any aspects of this treatment, please ask the team treating you. They will answer your questions before you sign the consent form (see contact numbers at the end of this leaflet).

It is a legal requirement to have a signed consent form from you before the start of your treatment. If you have already been given one of these forms, please bring the completed form with you when you come for your first appointment. If you have not been given a form, this will be discussed with you at your first appointment.

What alternatives are available?

There are several different types of treatments available for people with castrate resistant metastatic prostate cancer. These include hormone therapy, chemotherapy, Radium-223 radioactive isotope treatment, clinical trials or therapy to control symptoms such as pain killers and radiotherapy to treat affected painful areas of prostate cancer.

You should discuss with your doctor which options may be suitable for you. It is important that you consider any alternative treatments with your doctor before starting Lutetium-177 PSMA therapy. You need to discuss the benefits and side effects of these other treatments and how they could affect you individually before making a decision.

How should I prepare for this treatment?

There is no preparation required regarding medication or fasting prior to treatment unless you are told to by your doctor.

Before the treatment you will complete a questionnaire regarding contact with children, pregnant people and people you see regularly. Depending on this information you may need to make arrangements before your appointment to ensure you can follow necessary restrictions when you go home.

You will need to stay in the department for a few hours, so you may wish to bring something to read.

How is this treatment given?

When you arrive at the Nuclear Medicine Department, the reception staff will check you in. A member of staff will then take you to your treatment room, where you will go through the consent process and be asked a few final questions. Please note that it is a legal requirement for the staff to check your name and details against your treatment sheet every time you attend.

The treatment is given through a drip (into a vein in your arm). The infusion itself usually takes about 30 minutes.

Because you are slightly radioactive after the infusion, you will need to stay in your treatment room until it is safe for you to go home. This means you will remain in the department between your treatment and the scan. A light lunch (such as a sandwich, drink, and snack) will be provided.

A few hours later, you will have a Nuclear Medicine scan to check that the treatment has gone to the right places in your body. For this scan, you will lie on a flat bed while a special camera moves close to you to take images of the Lutetium-177 PSMA. The scan usually takes about 20–30 minutes and staff will explain everything beforehand.

After the scan, you will return to your treatment room. You will need to remain there until your radiation levels have fallen to a safe level for you to go home. Staff will measure this using a monitor held about one metre away from you.

Are there any side-effects from this treatment?

Common side effect which can happen in more than 1 out of every 10 people treated with Lutetium-177 PSMA therapy (10%) include a dry mouth, tiredness, nausea, vomiting, constipation or diarrhoea.

A rare side effect that can happen in up to 10 out of every 100 people treated with Lutetium-177 PSMA therapy (1 to 10%) can include a reduction in the cells produced by the bone marrow; this is usually temporary. This can result in an increased risk of infections due to a reduction in white cells and a risk of bleeding due to a reduction in platelets which help the blood to clot. You will have regular blood tests to monitor this closely.

These side effects will be discussed fully with your doctor before you start this therapy and you will be monitored carefully and regularly with blood tests for any side effects during and after treatment. This would ensure that your doctor commences supportive treatment or monitoring of these side effects as soon as possible.

When will I know if it has worked?

You may not notice any changes straight away. If you are having pain from the cancer, this may slowly improve over time. We will monitor your response using regular blood tests (such as PSA) and imaging scans. As Lutetium-177 PSMA targets the cancer in your body, your PSA levels may stop rising or even fall. This can take several months to happen.

Not everyone responds to the treatment in the same way. For some people, the cancer may remain stable, while for others there may be a reduction in symptoms or tumour size. Your doctor will discuss your progress with you at each follow-up appointment.

Will I be radioactive after the treatment?

For a short time after the treatment you will remain radioactive. The radiation does not stay in your body for long. Most of it leaves naturally within the first few days. The risk to you from the radioactivity is very small compared with the benefit you get from the treatment.

What about my family and other contacts?

Following your treatment with Lutetium-177 PSMA, you will be asked to take precautions to reduce radiation exposure to others. You will be asked to maintain a safe distance and follow some hygienic measures. You will be provided with written instructions tailored to your personal circumstances, which will be discussed prior to treatment.

Your healthcare team will monitor your radiation levels before you leave the hospital and issue you with an instruction card to carry with you.

The guide below may be adjusted depending on your situation:

Contact with others

- Avoid prolonged close contact (less than 1m) with adults you see regularly for up to 6 days.
- Avoid close contact with children and pregnant people for 7 days.
- Sleep separately from others for 8 days.
- If you provide care for young children, co-sleep, or your partner is pregnant, individualised precautions will be provided based on your circumstances.

Work and public places

- Do not return to work for 4 days. This may be longer if you have close contact with colleagues or work with children/pregnant people.
- Avoid attending public places or using public transport for long journeys (longer than 2 hours) for 1 day.

Hygiene

Follow hygiene precautions for 7 days, as small amounts of radioactivity may leave your body in urine or other fluids:

- Wash hands carefully after using the toilet.
- Sit down when using the toilet and flush twice afterwards.
- Avoid kissing and sexual activity during this time.
- Use disposable gloves to clean up bodily fluids (e.g. urine).
- Wash any clothing or bedding soiled with bodily fluids separately.

Fertility

This treatment can affect sperm and may increase the risk of harm to an unborn child. We advise that you do not father a child during treatment and for four months afterwards. Please discuss this topic with your hospital doctor or one of the team treating you, so that you are quite clear what this actually means in your case.

Can I change my appointment once it is made?

Yes, you can change your appointment. However, to get the most benefit from the Lutetium-177 PSMA therapy it is important for you to keep your appointments and have your treatments on time. The Lutetium-177 PSMA is expensive and has to be ordered specially for each patient two weeks in advance of when the appointment is booked. The hospital will still have to pay for it if there is a late cancellation.

We would be grateful if any unavoidable appointment cancellation or rearrangement could be made at least two weeks before the appointment is due. This is so that the order for your Lutetium-177 PSMA can be changed. We will understand if there are situations such as illness which are beyond your control.

Please call if you cannot attend your appointment (contact numbers at the end of this leaflet).

Car parking at the hospital



A Pay & Display parking scheme operates 24 hours a day, 7 days a week. Cancer patients have a £1 concessionary parking rate but must register for this. Registration forms are on the back of appointment letters.

On your first visit, from the Pay and Display machine, press the green button to get a free 10 minute ticket. On other machines, press Start, Visitor and then Next to get a free 10 minute ticket.

Display this on your dashboard whilst you take your registration form to one of the following offices (Mon–Fri), where you will be given a yellow Concessionary Parking Pass:

- Car Parking Office 8am–1pm and 2pm–4pm
- Post Room: 8.30am–12pm and 1pm–4pm

Then at the Pay and Display machine, buy a Concession ticket for £1 and **display this and your yellow pass** on the car dashboard. Your yellow pass can be used in any car.

You can also pay by the Pay by Phone app.

Blue Badge holders do not need to register or pay. Please display your Blue Badge on your dashboard and make sure you park in a parking bay.

Getting help with paying for transport

If you are on a low income, you may be eligible for help with paying for the cost of transport to and from the hospital. This includes bus and train fares and car mileage but not taxi costs.
For further information about eligibility, please speak to Patient Affairs (020 3826 2343) or visit www.nhs.uk and search for ‘Travel costs’.

Other help and support

People who have cancer often say that, during their illness, they experience a range of emotions. Many find it to be a stressful, anxious and confusing time.

If you have any questions or concerns about cancer and your treatment, are struggling to cope or need some support, please visit the Lynda Jackson Macmillan Centre (LJMC). Please feel free to drop in before, during or after any of your visits to the Cancer Centre.

The team at the LJMC works as part of the overall team caring for you to provide help, support and information in a relaxed setting to help you better cope with cancer and its treatment. Your family and friends are also welcome to visit the centre or call the Helpline.

A range of support services are available at the centre. These include complementary therapy, relaxation sessions, counselling and financial advice. Please ask for more details.

You do not need an appointment to visit the LJMC which is located next to the Chemotherapy Suite by Gate 3. If you are unable to get to the LJMC, you can call the Helpline on 020 3826 2555.

Please see the back page of this leaflet for more information.

Mount Vernon Cancer Centre is committed to ensuring that patients receive the best quality of care regardless of their gender identity or sexual orientation.

This leaflet has been produced by staff in the Nuclear Medicine Department, together with professionals, patients and carers from Mount Vernon Cancer Centre and the Lynda Jackson Centre who have expertise and experience in the topics covered by this publication.

All our publications are reviewed and updated regularly. Details of the references used to write this information are available from the Information Team at the Lynda Jackson Centre.

Useful contact details

East and North Hertfordshire Teaching NHS Trust:

- Website www.enherts-tr.nhs.uk
- Telephone 01438 314333

Nuclear Medicine Department:

- Telephone 020 3826 2263 Mon-Fri 8:30am-4:30pm

Acute Oncology Service 24/7 Triage Line (Alert Card Number) Mount Vernon Cancer Centre:

- Telephone 07825 028855

Leaflet information

You can request this information in a different format or another language; please speak to your doctor or nurse.

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