

Peptide Receptor Radionuclide Therapy (PRRT) – Lu-177

What is a neuroendocrine tumor?

Neuroendocrine cells are mainly found in your bowel, pancreas and lungs. These cells make hormones. A neuroendocrine tumor can happen when there is a change, or mutation, in one of your genes. This can cause your body to make too many neuroendocrine cells that begin to take over an area where normal tissue would grow. These tumors begin to make extra hormones and can cause problems, including carcinoid syndrome.

What is Peptide Receptor Radionuclide Therapy (PRRT)?

Peptide Receptor Radionuclide Therapy (PRRT) is a type of cancer therapy used to treat neuroendocrine tumors. Lutetium-177 (Lu-177) is a type of radioactive material used in PRRT. A hormone medicine, Octreotide, is mixed with a small amount of Lu-177 and placed into your blood. Once this medicine attaches to your neuroendocrine tumor, a high dose of radiation is given directly to your cancer cells. You will receive this treatment 4 times, 1 time every 8 weeks.

What should I do to prepare for my care after treatment?

It is important for you to know the difference between **radioactive contamination** and **radiation exposure**.

Radioactive contamination happens when any amount of radioactive material is left behind on a surface that you have touched. Lu-177 stays in your body fluids for a period of time after your treatment. It is important to keep your body fluids cleaned up to keep others from coming in contact with any radioactive material from your treatment.

This handout is for informational purposes only. Talk with your doctor or health care team if you have any questions about your care.

- When you receive Lu-177, it will go into your blood and will be absorbed by neuroendocrine cells. Any Lu-177 that does not get absorbed will leave your body through your body fluids (urine, stool, sweat, saliva, vaginal secretions, semen and tears). Your urine will have the largest amount of Lu -177.

Radiation exposure is the amount of radiation given off by your body after the Lu-177 treatment. This amount can only be measured by radiation detection equipment. When you are near other people, they are at risk for exposure to the radiation material.

- After you receive the Lu-177, your body will give off radiation. It is important to keep a safe distance between you and others for 1 day after each treatment, to lower the risk of radiation exposure.

To keep your family, friends and co-workers safe, it is very important for you to make plans for your care after treatment.

Before Your Treatment

Before you start your treatment, it is important to talk with your doctor about all the medicines you take, including any vitamins or supplements, prescription medicines and over-the-counter medicines and remedies. Your doctor will tell you if you need to stop taking any medicines. You can eat and drink as normal before your treatment.

Day of Treatment

- On the day of your treatment, you will check in at the Clinical Trials Unit (CTU) on the 5th floor of The James Cancer Hospital.
- You will meet with the radiation safety team to learn about radiation exposure precautions you must follow after your treatment. They will answer any questions you have about radiation and radiation safety.
- A nurse will take you to a treatment room. To lower the risk of radiation exposure, the floor and chair or bed in the treatment room will be covered with plastic.
- A nurse will place two intravenous (IV) catheters into your arms. IV catheters are long, thin, flexible tubes placed into vein to give you medicine. One IV will be used for your PRRT (Lut-177) and the other will be used to give you medicine to protect your kidneys from the radiation (amino acid infusion). You may also receive medicine to prevent nausea during and after your treatment.

- ▶ If you have had a hard time with IVs being placed, tell your treatment team. They can have your IVs placed using an ultrasound.
- You will receive the amino acid infusion first. This will take 30 minutes.
- Next you will receive Lu-177. This will take 30 minutes. To decrease the risk of radiation exposure any visitors that are with you will need to leave the treatment room during this time.
- You will then receive more of the amino acid infusion. This will take about 4 hours.
- You should expect to spend a total of 6 hours in the CTU for each treatment.

After Treatment

A scan will be done 24 hours after your treatment to check if the Lu-177 attached to your tumor cells.

What special precautions will I need to follow after my treatment?

After your treatment, you will have small amounts of radioactive Lu-177 in all your body fluids and you will give off low levels of radiation. The farther away you stay and the less time you spend with others will reduce their risk of radiation exposure. **It is important for you to follow these safety precautions to make sure you and those around you are safe after your Lu-177 treatment.**

- **Body Fluid Precautions**

Follow these precautions for **1 day** after your treatment or as directed by your doctor

- ▶ **Do not** have close contact with anyone. This includes hugging, kissing or sexual activity of any type.
- ▶ **Wash your hands often**, use soap and warm water for at least 20 seconds.
- ▶ Double bag any items soiled with body fluids that can be thrown away. Keep the bagged items for a least 2 weeks before you put them in the regular trash can.

- ▶ Latex or disposable gloves should be worn when you or someone else handles any of your body fluids. Wash your hands after you take the gloves off.
 - ▶ When you use the toilet, it is important to flush at least 3 times after each use. Men should sit down to urinate.
 - ▶ Any clothes or linens that come in contact with urine or feces should be **washed right away**. Wash these items separate from other laundry.
 - ▶ **Do not** prepare food for others or share food with others.
 - ▶ Use disposable plates and eating utensils. If you must use regular dishes, wash your dishes separately.
- **Other Precautions for Women**

You will not be given Lu-177 treatment if you are pregnant.

 - ▶ **Do not get pregnant** during your treatment and for 6 months after your treatment.
 - ▶ **Stop breastfeeding** before you start your Lu-177 treatment.
 - ▶ **Do not breastfeed** children during your treatment and for 6 weeks after your treatment.
- **Other Precautions for Men**
 - ▶ **Do not plan a pregnancy** with your partner for 6 months after your treatment.
- **Other Important Safety Precautions**
 - ▶ Drink plenty of fluids.
 - ▶ If you are in the hospital or need emergency care, it is important to tell the health care team about your Lu-177 treatment. You should keep your treatment letter with you at all times and for at least 3 months after your treatment has ended.
 - ▶ If you travel, it is important to keep your treatment letter with you at all times and for at least 3 months after your treatment has ended.

If you have questions about radiation safety, call The Ohio State University Radiation Safety Department at (614) 292-1284.

What are the side effects of this treatment?

PRRT with Lu-177 causes few problems. The following are side effects that may be caused by this treatment.

- Nausea and vomiting - your doctor will talk with you about medicines that can be ordered to help with this problem.
- Low blood cell counts - you will have weekly lab work to check your blood cell counts. This side effect can last up to 6 weeks.
- Fatigue and weakness - which may last for a week.

What is the cost of Lu-177?

It is important to check with your insurance company about what your plan covers before your Lu-177 treatment begins.

To help cover the cost of your treatment, you will be given a Lu-177 Financial Assistance Form. Your health care team can review this form with you and help you fill it out. This form will be sent to AAA Patient Connect, a company who helps provide financial assistance for medical treatments. If you receive financial assistance, it may not cover the total cost. You may still need to cover some of the cost of the treatment.

If you have questions about how to pay for your treatment, call The Ohio State University Wexner Medical Center Medication Assistance Program at (614) 366 -7336.

After the insurance pre-authorization is complete and you know if you will receive financial assistance, we will schedule your first treatment.