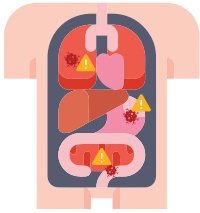


PEPTIDE RECEPTOR RADIONUCLIDE THERAPY (PRRT) PATIENT EDUCATION



Peptide Receptor Radionuclide Therapy (PRRT)

What is PRRT Treatment?



PRRT is a molecular therapy used to treat **metastatic neuroendocrine tumours (NETs)**. PRRT is also known as radionuclide therapy or radioisotope therapy.

How Does PRRT Work?



A radiopharmaceutical is used, which is a combination of a **radionuclide and drug** to **target** it to the tumour.

PRRT delivers a targeted high dose of radiation to the cancer cells, while reducing harm to healthy tissues.

What Drug is Used?

Depending on each patient's disease conditions, our Doctor will select either:

1. **Lu177-DOTATATE** or
2. **Y90-DOTATATE**

How is PRRT Treatment Given?



First, a few pre-medications will be given, there are oral medications and an injection.



An amino acid intravenous drip will be given to protect the kidneys. After 30 minutes, the PRRT drug will be given by slow intravenous injection.



The amino acid drip will be continued for another 3½ hours and the treatment is complete.



The patient will be admitted into a single room ward for the duration of treatment.



After treatment, the patient will undergo a post therapy scan or dosimetry scans. The patient is discharged when treatment is completed.

Which Patients will be Suitable for PRRT?



- ✓ Advanced (metastatic) and/or progressive neuroendocrine tumours with positive Ga68-DOTATATE PET/CT scan.
- ✓ Patients who are unsuitable for surgery.
- ✓ Patients who don't respond to other medical therapies.

To determine whether a patient is suitable for this treatment, he/she will first consult the Nuclear Medicine Consultant, to review the results of all investigations.

The PRRT Treatment Plan

A. Consultation

The patient books an appointment with our Nuclear Medicine Consultant, who will go through the patient's history and records. Assessment will be done to determine if the patient is suitable for PRRT, which includes some or all of the following:

- ✓ **Blood tests**
- ✓ **FDG PET/CT scan**
- ✓ **Ga68-PSMA PET/CT scan**
- ✓ **Renal DTPA scan**

If the patient requires therapy, a treatment date will be selected and the patient has to pay the deposit to order the PRRT drug.

B. PRRT Treatment

The patient will be admitted to the hospital for the duration of the treatment.

Normal PRRT Package

PRRT is given on the 1st day.
Post therapy scan and discharge will be done on the 2nd day.

OR

PRRT Dosimetry Package

PRRT is given on the 1st day.
Dosimetry scans are done on 1st, 2nd and 3rd day.
Discharge will be done on the 3rd day.

How Many Cycles are Needed?



The number of cycles for each patient depends on his/her disease conditions. The treatment is repeated every 6-8 weeks, usually for 4 cycles.

Post Therapy Scan and Dosimetry Scans



The PRRT drug emits beta radiation that treats the cancer, as well as gamma radiation that can be seen in a **SPECT/CT scanner**.

The next day (24 hours) after PRRT treatment is given, every patient will undergo a **post therapy scan** to image the drug location and disease condition.

In **dosimetry scans**, a total 4 scans are taken after PRRT treatment (at 1 hour, 4 hours, 24 hours and 48 hours). The data collected is used to measure patient-specific biophysical parameters, to individualize treatment for each patient. This is important for maximising the treatment effectiveness while minimizing unnecessary radiation to healthy tissues.

PRRT Side Effects



The patient might develop nausea and vomiting during PRRT treatment, which stops after the drug is given.

Transient side effects



"Flare" of symptoms

increased pain, swelling, stiffness



Tumour swelling causing pain or pressure effects

Short term side effects



Reduction in blood counts (myelosuppression)

severe condition is <5% risk

Long term side effects



Blood cancers (myelodysplasia / leukemia)

approximately 1% risk



Reduction in kidney function



Additionally, there might be risk of infertility after treatment.

Special Precaution after PRRT



After the treatment, the patient will have small amounts of radioactive in all of their body fluids and emit low levels of radiation to their surroundings.

The following precautions are necessary to **reduce radiation exposure** to their family and others around them. The patient has to do these for **1 day after discharge** from hospital:



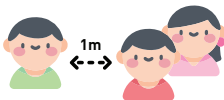
Flush at least **2 times** after using the toilet. Men should sit down to urinate to avoid spills.



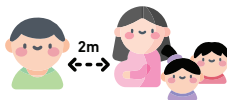
Wash hands often.



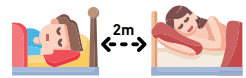
Avoid direct physical contact with others.



Keep a distance of **1 meter** from other adults.



Keep a distance of **2 meters** from pregnant women and children below 5 years old for **3 days**.



Sleep in a separate room, or in a separate bed at least 2 meters apart.



Avoid public or crowded places. Limit the time in public transport.



Wash clothes and linen separately, 1 week after treatment.



Do not prepare food for others or share food with others.



Use disposable plates and utensils. If using regular dishes, wash them separately from others.






Both men and women **should not plan a pregnancy** with their partners for 6 months after treatment.



Women **should not breastfeed** during treatment and for 6 weeks after treatment.

For more information, kindly contact us at:

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The Nuclear Medicine Centre is located at:
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Operation Hours

- Mondays-Fridays 8.30am - 5.30pm
- Saturdays 8.30am - 12.30pm
- Closed on Sundays and Public Holidays