



Radium-223 dichloride

Nucleaire geneeskunde

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02 Welcome

Dear visitor

A warm welcome to our nuclear medicine department. Our team is here to guide you.

You have been admitted for a treatment with radium-223.

To make your treatment as comfortable as possible, we would like to provide you with some additional information.

If you have any questions after reading this brochure, please feel free to ask the doctor or nurse. We will be happy to assist you.

We wish you a smooth treatment.

The nuclear medicine team

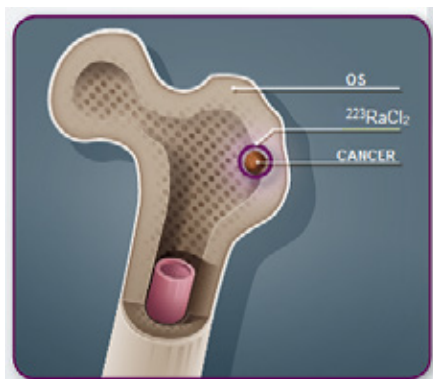
03 Why treatment with radium-223?

In an advanced stage of the disease, prostate cancer may spread to other parts of your body. Sometimes, cells multiply and form new tumours, which are called metastases or secondary tumours.

In the case of prostate cancer, metastases typically develop in the bones. The treatment you will undergo is specifically designed to target the spread of the disease in the bones.

04 Treatment with radium-223

The injection of radium-223 is a **radiotherapy treatment**. Radium-223 (which emits alpha particles) is administered intravenously at the nuclear medicine department.



The treatment with radium-223 is based on the following mechanism: radium-223 preferentially binds to bones where bone metastases develop. By attaching to these areas, radium-223 delivers intense radiation to the bone metastases. However, the bone marrow remains intact due to the very short range of the substance.

The treatment is administered six times, with a four-week interval between each injection. Before each administration, your nuclear medicine doctor calculates the dose based on your body weight.

05 Benefits of radium-223 treatment

Radium-223 was studied in a clinical trial involving 921 patients with bone metastases due to castration-resistant prostate cancer. In addition to standard treatment, some patients received radium-223, while others were given an injection without an active substance.

Patients administered radium-223:

- **lived** significantly **longer** than the patients who were not treated with this substance;
- showed **fewer side effects** of their cancer at bone level, such as bone pain or bone fractures;
- had a **better quality of life** during the duration of treatment than patients who did not receive the treatment.

The most common side effects of radium-223 are:

- attacks of diarrhoea;
- nausea;
- vomiting;
- a decrease in the number of blood cells that play a role in blood clotting (thrombocytopenia).

Less common side effects of radium-223 are:

- reaction at the injection site in the form of redness, pain or swelling;
- a decrease in the number of white blood cells that play a role in your immunity (neutropenia, leukopenia);
- a decrease in red blood cell count which can manifest itself in fatigue and/or skin pallor (anaemia), among other things;
- the 2 points above plus a thrombocytopenia (pancytopenia).

If you are currently suffering from bone marrow disorders, your doctor will decide whether treatment with radium-223 is appropriate.

In some patients, bone pain may increase temporarily for 72 hours after injection. This is due to the intense irradiation of the bone metastases. You may need to adjust the dose of your painkillers to compensate for this slight and temporary increase in pain.

06

The phases of treatment with radium-223

Before starting treatment

To reduce the risk of exposing other people to radiation, you are advised to have any surgical or dental procedures carried out to the extent possible before treatment begins. If you wish to conceive children later, you are well advised to seek advice on sperm preservation before starting treatment.

Blood samples (blood counts) should be taken before each administration of the product. The results should be communicated to your doctors. If the amount of red blood cells, platelets or neutrophils (a type of white blood cell) has dropped significantly, an injection may be delayed.

During treatment

Once the treatment is set, it is advisable to schedule your appointments for alternative biological analyses or other forms of non-medical body care each time as shortly as possible before the next injection.

The day of administration

Radium-223 is injected into a vein in your arm. This simple injection can be compared to a blood draw and takes about one minute. After your visits to the doctor of nuclear medicine for treatment with radium-223, you will also continue to see your attending physician. The latter can monitor the evolution of your condition.

You should not be hospitalised for treatment because the risk of external radiotherapy is very low.

Immediately after the injection, you may resume normal contact with family and acquaintances. So you should not be afraid to hug your family members or your friends, or to play with your grandchildren, as you usually do.

After administration

Inform your doctor immediately as soon as you show any of the following symptoms:

- unusual bruising (bruising);
- fever;
- profuse bleeding after an injury;
- shortness of breath;
- fatigue;
- Notable susceptibility to colds and infections.

It is very important that you inform your doctor of any side effects during your treatment. Ask him or her to address these side effects to the best of his or her ability.

Given the radiological nature of the product, any possible uptake of radioactivity by healthy individuals should be avoided.

Therefore, observe the following **hygiene measures** closely:

- **Sit down** to pee or use a urinal to avoid splashing.
- **Flush twice** after each use of the toilet.
- **Use only disposable cleaning items**, if you need to clean stains from body fluids (such as blood, vomit, urine, faeces) during the first 7 days after treatment. Rinse disposable items in the toilet after use (toilet paper or paper towels).
- **Wash hands carefully** with soap and water **after each toilet use**. All other persons using the same toilet (family members, acquaintances, nursing aides) should also wash hands after each use and after each contact with any of the patient's body fluids mentioned above.
- If you suffer from incontinence and more specifically faecal incontinence, use nappies / cloths / incontinence trousers that you can flush down the toilet. Dry yourself carefully to avoid contamination.

If you follow the hygiene rules above, other people's exposure to radiation will be minimised. The radiation exposure for radium-223 is lower than that for all other radionuclides approved for outpatient treatment.

You should take no other precautions when in contact with other people, including your spouse or partner.

Treatment with radium-223 **does not adversely affect your daily activities**.

Information for medical and paramedical staff

Please inform your **treating physician and any other doctors** you will be dealing with (e.g. in case of possible hospitalisation or surgery) **about your treatment with radium-223**. This information will help them decide which treatment is most appropriate for you.

Show your **treatment card** to all doctors and nurses caring for you. This card contains the contact details of your nuclear medicine specialist and allows other doctors or government agencies to ask the necessary questions (with your permission).

07 Contraception

There is no data available on the possibility of small amounts of radioactivity being transferred directly through bodily fluids during sexual intercourse after a radium-223 injection. Therefore, a condom must be used during **the first 7 days after each radium-223 injection**.

To reduce the risk of radiation-induced changes to reproductive cells, you must **not conceive children** during the treatment and **for up to 6 months after the last radium-223 administration**. You and/or your partner must always use reliable contraception (such as the pill, intrauterine device, condom, etc.) during this period.

08 Practical aspects

Participation in road traffic

Radium-223 has no known adverse effects on your ability to drive a motor vehicle or otherwise participate in road traffic.

Going off alarm systems

The small amount of radiation that leaves your body after treatment with radium-223 could possibly trigger a highly sensitive alarm system, for example at an airport. You should be aware of this possibility. If you trigger an alarm system, stay calm and show your treatment card to the appropriate authorities.

Radium-223 and your PSA

Radium-223 is effective in and well tolerated by patients with metastatic prostate cancer. Although radium-223 may slow down the rise in your PSA level, however, it will not significantly reduce PSA concentration. Even if no changes are observed as far as your PSA is concerned, you will still benefit from the effects of radium-223. To assess the effects of the treatment, your doctor will rely on your general wellbeing, any symptoms you may have and other blood parameters.

Stick to the treatment calendar

To get maximum benefit from your treatment with radium-223, you must keep your appointments and the injection calendar.

If you are unable to attend, it is very important to notify your treatment centre at least 7 days before the scheduled date.

A special consideration

Like anyone else, you may pass away unexpectedly, whether due to illness or an accident.

If you wish to be cremated after your passing, we recommend informing your loved ones that they should notify the relevant personnel if you pass away within 59 days of your last injection. This ensures that staff can follow the necessary radiation protection procedures.

These are general guidelines that do not take into account your specific lifestyle or personal situation. To ensure everyone's well-being, your doctor encourages you to ask any questions you may have.

Notes

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Questions?

In the first instance, contact your GP. If the GP refers you or cannot be reached, you can contact:

nuclear medicine department
tel: 011 69 93 00



Diestersteenweg 100 • 3800 Sint-Truiden
www.sint-trudo.be

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