Gloucestershire Hospitals
NHS Foundation Trust

Patient Information

Radioactive Iodine therapy (RAI) treatment for thyrotoxicosis

Introduction

Your doctor has recommended that you consider having Radioactive Iodine Therapy (RAI) for the treatment of your overactive thyroid gland. This leaflet gives you information about the treatment.

When you attend the department for the treatment, you will be given more information and you will be able to ask any questions that you may have.

Why do I need the treatment?

If you have thyrotoxicosis (an over active thyroid gland), RAI is a good treatment option. Treatment is usually a single capsule, which contains the radioactive iodine. Other possible treatments would be prescribed tablets, which can have unpleasant side effects, or to have an operation.

What is RAI?

RAI is a radioactive form of iodine. Iodine is only used by thyroid tissue and radioactive iodine is able to target and destroy some or all of the thyroid tissue. This will then bring your thyroid activity levels down.

The treatment is in the form of a capsule, about the size of a paracetamol caplet and is taken with a glass of water. The capsule **contains gelatine,** please let us know if there are any moral or ethical reasons preventing you from proceeding with this therapy.

Reference No.
GHPI1298_04_24
Department
Nuclear Medicine
Review due
April 2027

How does RAI work?

The thyroid gland normally soaks up iodine from the circulatory system. By using RAI it allows us to target the correct area.

When we give you RAI, the radioactivity enters the thyroid gland and reduces the activity of some of the cells.

Patient Information

Radioactive iodine gives off low energy radiation that only travels a very short distance. It is this radiation that stops the thyroid cells from working. It also gives off a small amount of high energy radiation, and it is because of this small amount of high energy radiation that you need to avoid close contact with other people for a short time.

What will happen after treatment?

The aim of the treatment is to reduce the action of the thyroid from overactive to underactive.

If your thyroid becomes underactive, you will need to take thyroxine medication for life. This can be arranged by your GP without the need for hospital visits.

A small number of patients find that RAI leaves them with a normal thyroid hormone level. There is still the possibility that your thyroid will become underactive in later life or even become overactive again.

How long does the treatment take to work?

RAI slowly breaks down and the radioactivity levels drop over a period of several weeks.

You will not notice any immediate effects of the treatment as it takes time for the thyroid to react. The full effect will be reached about 3 months after treatment.

Will I need to have RAI more than once?

For most patients a single treatment is enough. We usually wait at least 6 months for the first dose to work before thinking about a second treatment.

Patient Information

Is RAI safe?

RAI therapy has been used to treat thyroid diseases for many years. It is generally very well tolerated although like all drugs, it can have side effects.

Temporary side effects:

- The salivary glands take up small amounts of iodine which can cause a dry mouth and taste changes. Some people find sucking sweets after treatment helps to produce more saliva in the mouth.

Other things to consider:

- There could be a very small risk of cancer with this treatment (as there is with all radioactive treatments). If your consultant has recommended RAI therapy to you then the benefits of the treatment are considered to outweigh the risks.
- Fertility and pregnancy: It is essential that RAI is not given to anyone who might be pregnant. Therefore appointments are carefully made around menstruation dates. Patients of child bearing potential, under the age of 55, will be asked to give a urine sample so that a pregnancy test can be carried out before treatment. If you think there is a chance that you might be pregnant, please let your team know immediately.
- Radioactive iodine can also pass into breast milk; therefore, the treatment is unsuitable for patients who are breastfeeding. If this affects you, please discuss it with your team.
- It is not an appropriate treatment for anyone who suffers with urinary incontinence as RAI is excreted in the urine.
- It is recommended that patients do not conceive or impregnate for 12 months following treatment. We recommend that at least 2 forms of contraception are used after treatment, for example condoms and an oral contraceptive.

Patient Information

Are there any special precautions?

Yes - because the treatment involves radioactivity, there are some special precautions you need to take. The exact timings will depend on the dose of RAI.

Following the treatment, you should:

- Stay at least 1 metre away from adults for up to 16 days.
- Stay away from children for 22 days.
- Stay away from infants (less than 3 years of age) and pregnant people for 27 days.
- You should not have any routine medical or dental check-ups for 37 days after treatment, for example no blood tests or urine collection.

If you usually share a bed with someone, you will need to sleep separately for 16 days, longer if they are pregnant.

If you need a comforter/carer to share a bed with you, they will need to sign a consent form as they will be exposed to a measurable dose of radiation. More information is available from the Nuclear Medicine Department upon request.

You will usually need to take a short amount of time off work. The length of time will depend on the exact nature of your work. This will be discussed in more detail at your consultation appointment.

Treatment

If you and your endocrinologist agree to go ahead with the treatment, you will be referred to the specialist at Cheltenham General Hospital. During your appointment the treatment and precautions will be discussed in more detail. You will be asked to sign the consent form to confirm that you understand the treatment and are happy to go ahead. The Nuclear Medicine Department will contact you with a suitable date for treatment and the radioiodine dose will be ordered.

You will need to stop certain thyroid medications for a week before the treatment. This will be discussed with you.

Patient Information

You will also need to follow a low iodine diet for 48 hours before the treatment. This means that you should avoid fish, seafood, dairy (such as milk, butter and cheese) and food containing the colouring E127.

Iodine is a mineral and therefore it is impossible to completely remove it from your diet but the above foodstuffs contain the highest concentrations.

On the day of your appointment, you can have breakfast but you must not eat or drink anything for 2 hours before your treatment.

Your treatment appointment will be in the Nuclear Medicine Department, Oncology Centre at Cheltenham General Hospital.

What does the treatment involve?

First, the Nuclear Medicine team will check your details and make sure that you understand the radiation protection instructions. You will then be given a small capsule which you will swallow with a drink of water. You will be asked to wait in a separate waiting area for 1 hour before going home.

You must not have anything to drink for 1 hour and nothing to eat for 2 hours following the treatment.

You may drive yourself home or leave as the sole passenger in a car driven by someone else. You must not use public transport to go home after the appointment. This is because you will need to follow the radiation protection rules. You will be given these instructions and the chance to ask questions before your treatment.

After the treatment

You will have been advised whether you need to restart your anti-thyroid tablets.

A blood test will be taken 6 to 8 weeks after your treatment. This is to check your thyroid hormone levels and what effect the treatment has had. You will continue to have regular thyroid blood tests and start thyroxine if your thyroid becomes underactive.

You should have annual thyroid blood tests, for the rest of your life, at your GP's practice.

Gloucestershire Hospitals NHS Foundation Trust

Patient Information

Contact information

Nuclear Medicine Department
Cheltenham General Hospital
Tel: 0300 422 4036
Monday to Friday, 9:00am to 3:30pm

There is an answerphone at outside of these hours. Please leave a brief message including your name and contact number.

Further information

British Thyroid Foundation
Website: www.btf-thyroid.org

British Thyroid Association
Website: www.british-thyroid-association.org

Content reviewed: April 2024

Making a choice