Radioactive Iodine for Thyrotoxicosis

I. Introduction

Thyrotoxicosis is over-activity of the thyroid gland, resulting in excessive secretion of thyroid hormones. Treatment of thyrotoxicosis includes anti-thyroid drugs, radioactive iodine, and surgery.

Radioactive iodine is a form of iodine that emits radiation. When it is absorbed by the body, it will be concentrated in the thyroid gland. The radiation given off will decrease the activity of thyroid cells and reduce thyroid hormone secretion. It is a safe, simple and convenient treatment that aims at long term control of thyrotoxicosis.

Radioactive iodine is taken by mouth in liquid or pill form. Most of the radioactivity is absorbed by the thyroid gland. Any radioactivity not collected by the thyroid gland will be eliminated within a few days through urine, faeces, saliva and sweat. Other tissues in your body will receive some incidental radiation during this time, but this small amount of radiation typically does not produce any adverse effect.

It may take 2 to 6 months for radioactive iodine to take effect. Most patients can achieve long term control with one treatment, but some may need 2 or more treatments.

II. Procedure

Please come at the scheduled time for your treatment. You can usually go home afterwards. If you wish to obtain a sick leave certificate, please inform our staff before leaving the hospital.

The level of radioactivity in your body will decrease quickly over several days. Very occasionally a higher dose of radioactive iodine is required and you may need to stay in hospital for a few days to reduce other people’s exposure to radiation.

If you feel unwell during the treatment period, please inform our staff.

In the event of death, cremation may be denied by health authorities or may be deferred for a period of time depending on residual radioactivity.

III. Risks and Side Effects

Side effects may include, but are not necessarily limited to the ones listed below. Each patient reacts differently and may experience none, some, or all of the complications with varying severity.

A. Short-Term Side Effects

These may occur during treatment, but usually disappear within a few days to several weeks later.

Uncommon

1. Decreased appetite.
2. Nausea and sometimes vomiting. This can be reduced by not taking too much food on the day of treatment.
3. Dry mouth; changes in or temporary loss of taste sensation; discomfort, soreness or swelling of the mouth or throat. Drinking plenty of water helps to reduce these symptoms.
4. Patients with thyroid eye disease (Grave's ophthalmopathy): Temporary worsening of eye swelling. This may be prevented by taking steroid. Your doctor will decide if this is necessary.
5. Patients with large thyroid swelling: Neck swelling or pain. This can be prevented by taking steroid. Your doctor will decide if this is necessary.

Rare

1. Temporary increase in thyroid activity, which may lead to worsening of the symptoms of thyrotoxicosis. This should not happen if you take anti-thyroid drugs as instructed by your doctor.
2. Allergic reaction resulting in skin rash, shortness of breath and drop in blood pressure. This is potentially life-threatening and may require resuscitation.

B. Long-Term Side Effects

Some patients develop hypothyroidism (under-activity of the thyroid gland resulting in insufficient thyroid hormone secretion) some time after radioactive iodine treatment. Symptoms include weight gain, cold intolerance, easy fatigue, puffiness of the face and eyelids, constipation, slow pulse rate and hoarseness. About half of the patients develop hypothyroidism in the long run, and will require lifelong hormone replacement with thyroxine tablets. There is virtually no side effect from this.

- Some statistical analyses suggested that there might be a slight increase in the risk of some kinds of malignancies. However, currently there is no conclusive scientific evidence that radioactive iodine for thyrotoxicosis definitely increases the risk of cancer.
- The dose of radioactive iodine used for treatment of thyrotoxicosis does not affect future fertility.
- It is possible that the intended treatment outcome cannot be achieved, and the disease may not be alleviated or may recur/ progress in the future.
- Despite all precautions, unpredictable and unpreventable adverse outcomes may occur after treatment. Please kindly ensure that you understand the pros and cons of radiotherapy before deciding on undergoing the latter.

IV. Before the Treatment / Preparations Required

The following preparations ensure good absorption of radioactive iodine. Please refer to the instruction sheet given to you for the exact instructions.

- Before radioactive iodine: Avoid iodine-containing contrast agents used in X-ray or CT scans. Please ask your doctor if you are not sure.
- 2 weeks before radioactive iodine: You should be on a low iodine diet. This means that you should avoid all seafood (e.g. fish, shrimps, crabs, shellfish, seaweed, oyster sauce), sea salt, dietary supplements containing iodine, as well as iodine-containing medications (e.g. iodine-containing cough medicine).

- A few days to 2 weeks before radioactive iodine (or as instructed by your doctor): Stop all anti-thyroid drugs. You can continue other medications that you are taking. Ask your doctor for specific instructions regarding each drug.

Note:

- Radiotherapy can cause teratogenicity (i.e. lead to abnormal fetal development). Male and female patients (if applicable) should use an effective method of contraception.
- Female patients should avoid breastfeeding for a period of time before and after the radioactive iodine treatment as instructed by your doctor.
- Please tell your doctor if you have received radioactive iodine in another hospital.
- Please tell your doctor if you had allergic reaction to iodine before.
- Please tell your doctor if you need to be in close contact (within 1 meter) with babies or young children.

V. After the Treatment

Precautions should be taken to minimise the possibility of radiation exposure to other people, especially pregnant women and children.

Below are some guidelines to follow for a period (usually about two week) after your treatment (the exact duration to be instructed by your doctor):

1. Avoid being next to the same person (i.e. within 1 meter) for prolonged duration.
2. Sleep alone if possible and avoid sexual intercourse.
3. Avoid journeys on public transport for prolonged duration.
4. Avoid going to crowded places / places of entertainment.
5. It is safe to be in the same room with children or pregnant women, but do not sit next to them for prolonged periods, and avoid activities like hugging or kissing.
6. Drink plenty of fluids and empty your bladder frequently to flush the excess radioactive iodine out of your body more rapidly.
7. Keep the toilet clean. Avoid splashing urine outside the toilet bowl or on its borders. Flush the toilet twice after each use. Wash your hands thoroughly each time you go to the toilet and rinse the sink and bathtub after use.
8. Use separate eating utensils and wash them separately.

9. Do not share towels. Wash your towels and underclothing separately from other people's clothing.

Do not return to work within the sick leave period specified by your doctor, in order to minimise radiation exposure to other people. You should continue to refrain from seafood and thyroxine after radioactive iodine for a period of time as instructed by your doctor.

VI. Follow-up

1. A follow-up appointment will be arranged to assess your response to treatment and to look out for complications. The symptoms of hypothyroidism are often not very obvious and regular blood check and assessment is needed. Please attend your appointment as scheduled.
2. Please ensure that you follow precisely the instructions given to you regarding medications (if applicable).

VII. Remarks

The list of complications is not exhaustive and other unforeseen complications may occasionally occur. The risk of some complications may actually be higher for certain patient groups. For further information, please contact your doctor.