

HYPERTHYROIDISM

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Hyperthyroidism means overactive thyroid. The thyroid gland – which is a butterfly- shaped gland in the center of the neck- produces the thyroid hormones: the T4 (Thyroxin) and T3 (Triiodothyronine), which regulate the body's metabolism. In hyperthyroidism there is an excess production of the thyroid hormones, which results in increased metabolism, and symptoms of hyperthyroidism.

What are the symptoms of hyperthyroidism?

Symptoms are:

- Restlessness, irritability, anxiety, problems with sleeping, problems with concentrating.
- Shaking, palpitations (“heart fluttering”)
- Irregular heart rhythm.
- Sweating, heat intolerance
- Overactivity, but on the other hand, weakness and exhaustion.
- Weight loss – even with increased appetite and increased food intake
- Loose bowel motions
- In women it may cause irregular periods and fertility problems.

Neck swelling (“goiter”) is not always present in hyperthyroidism. Also: bulgy eyes (“exophthalmous”) occurs only in a specific form of hyperthyroidism, caused by Graves’ disease.

What are the causes of hyperthyroidism?

The most common cause of hyperthyroidism is “Graves’ disease”. This is an autoimmune condition, during which antibodies to the gland are produced, which stimulate the thyroid. There is diffuse overactivity of the whole gland. This is more common in women than men – especially young women -, and there is often a family history of thyroid problems. In this form of hyperthyroidism patients have often enlarged thyroid gland, and they may have exophthalmous, which can cause dry, gritty and sore eyes and problems with eyesight.

Other causes of hyperthyroidism are “toxic multinodular goiter” where multiple overactive nodules (lumps) are present, or “toxic adenoma” where one single nodule (lump) is overactive. The thyroid may be enlarged, but patients do not have eye problems.

How is hyperthyroidism diagnosed?

The diagnosis is done with a blood test, to check the thyroid hormones (T4 and T3), as well as TSH (another hormone, which is produced by a gland in the brain, the pituitary gland, which stimulates the thyroid to produce T4 and T3). If Graves’ disease is suspected, then an additional blood for specific thyroid antibodies (the “TSH receptor antibodies”) is done. A thyroid scan (Thyroid szintigram) can differentiate the cause of hyperthyroidism (Graves’ disease or toxic nodules). It can

also differentiate between the above causes of hyperthyroidism and thyroiditis, if thyroiditis presents initially with symptoms of hyperthyroidism.

Whatever the cause, hyperthyroidism is a condition that can, and should be treated.

What are the treatment options for hyperthyroidism?

There are three possible treatment options, the best one for each case depends on the individual patient, and has to be discussed with the doctor, after a thorough assessment:

1) Antithyroid drugs:

There are 2 drugs available, the Carbimazole (most commonly used), and the Propylthiouracil. They both work in a similar way, by blocking the thyroid gland from producing hormones. They also have an immunosuppressive action.

These drugs are usually the initial form of treatment, to bring the thyroid under control, even if other treatment options are planned (such as surgery or radioiodine treatment). They are first line treatment in Graves' disease (at least in the first episode), where they are given as course. Depending on which regime is used, they can be given either as course of 6 – 9 months, or as course of 12 – 18 months (this has to be discussed with the doctor). During the treatment patients will need to have regular blood tests (thyroid hormones). Following the initial course, there is a 40 - 50% chance of the hyperthyroidism reoccurring. Patients will need to be under regular follow-up.

Although the tablets are usually safe and are tolerated well, there can be side effects, of which the patients should be

aware: itching and rash usually appear as soon as treatment starts, and may be transient. Joint aches and swelling is also a side effect that occurs early in treatment. A very rare but potentially dangerous side effect, is the suppression of the bone marrow, the place where the blood cells are produced. This can present with severe sore throat and infections, bruises and mouth ulcers. Patients are warned to stop the tablets immediately and contact their doctor for a blood test if these symptoms occur.

2) Radioiodine:

This is usually the preferred treatment option for patients with overactive thyroid nodules, and patients with recurrent Graves' disease. It can also be discussed as treatment of choice in certain individuals – in patients with side effects of medication, or those who chose to have radioiodine straight away rather than a long course of medication.

The treatment consists of taking a radioactive medication – either in form of tasteless drink, or a capsule – once. The amount of radiation is very small, and the whole dose is concentrated in the thyroid gland, causing destruction of the thyroid cells. The full effect of the radioactive medication takes a few weeks, and this is a more definite treatment than the tablets. Rarely though, patients may need a further dose. There is a high chance that the thyroid becomes underactive, in this case patients will need replacement with thyroxin.

There is no evidence that Radioiodine treatment causes cancer.

People taking radioiodine treatment will be advised to avoid contact with certain

individuals for some days – this will be discussed with the patient, and the length will depend on the dose of the radioiodine.

Women should be aware that they should not become pregnant for 6 months after radioiodine.

3) Thyroid surgery (thyroidectomy):

This is not regarded as first line treatment, but it may be discussed at individual cases. It may be recommended in patients with large goiters, in patients with additional cold nodules apart from hot nodules, in patients with recurrent or difficult to control hyperthyroidism. There are some risks associated to the surgery – although rare – such as damage to the nerves of the neck causing hoarse voice, or damage to the parathyroid glands – some other glands next to the thyroid which control the calcium - which may lead to a fall in calcium. If the whole of the thyroid is removed, then patients definitely need to be taking thyroxin after surgery – the dose will need to be arranged by the doctor according to blood tests.

Hyperthyroidism and pregnancy:

Uncontrolled hyperthyroidism may lead to fertility problems, and in pregnant women it may cause problems to the mother and the baby. Women with hyperthyroidism who wish to become pregnant should discuss this with their Endocrinologist: The thyroid will need to be under control prior to pregnancy and throughout pregnancy, with or without medication. Sometimes the medication will need to be changed – we tend to give

Propylthiouracil in pregnancy rather than Carbimazole – and the lowest possible dose to be used. Frequent blood tests are required, to adjust medication. As mentioned above, women who had Radioiodine treatment should wait at least 6 months before trying to become pregnant.

Conclusion:

Hyperthyroidism is overactivity of the thyroid gland, leading to increased metabolism, and symptoms related to this. The symptoms are similar independent of the cause, and the diagnosis is made easily with a blood test and if necessary with a scan once one suspects this. Whatever the cause, the hyperthyroidism can be treated. Women who are diagnosed with hyperthyroidism can go through pregnancy, as long as the thyroid is under control with treatment. They should liaise with their doctor on this.

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