



Hormonal therapy

This information was produced by the European Association of Urology (EAU).

This leaflet contains general information about hormonal therapy. If you have any specific questions about an individual medical situation you should consult your doctor or other professional healthcare provider.

The content of this leaflet is in line with the EAU Guidelines.

For more information, please visit patients.uroweb.org.

Hormonal therapy

What is hormonal therapy?

Hormonal therapy is a treatment option for locally-advanced prostate cancer. It aims to stop the growth of the tumour. The growth of prostate cancer cells is dependent on male sex hormones called androgens. Testosterone is the most important androgen. Androgens are mainly produced in the testicles. Hormonal therapy either stops the production or blocks the action of androgens. This is known as castration.

Another name for hormonal therapy is androgen deprivation therapy (ADT). It can be performed surgically or with drug treatment. In surgical therapy, both testicles are removed in a procedure called bilateral orchiectomy. The surgery is generally done under local anaesthesia. Drug therapy to stop the production of androgens includes LHRH agonists and LHRH antagonists. These drugs are available as depot injections right under the skin or into the muscle. Anti-androgens are drugs that block the action of androgens. They come as a pill. All of these therapies cause castration.

Castration has physical and emotional consequences. The most common are hot flushes, lower sex drive, and erectile dysfunction. The effects of surgical castration are permanent. In chemical castration, some of the symptoms may disappear after the treatment. Do not hesitate to discuss any concerns with your doctor.

In locally-advanced prostate cancer the standard treatment to cure the disease is hormonal therapy in combination with radiation therapy.

What are the side effects of hormonal therapy?

Hormonal therapy stops the production or blocks the action of male hormones, and causes castration. Your body can react to castration in different ways. The most common side effects of castration are:

- Hot flushes
- Lower sex drive
- Erectile dysfunction
- Osteoporosis
- Increased risk of heart disease
- Diabetes

You could also experience pain, for example in your joints, your back, your bones, or muscles.

Changing hormone levels can affect your blood and cause high blood pressure, dizziness, and bruising. You may also be at higher risk of infection, especially in the nose or throat, or urinary tract infections.

Loss of appetite and weight loss can also be a result of castration. These may be related to diarrhoea, constipation or vomiting caused by the hormone changes.

Other side effects may include coughing, shortness of breath, headaches, and peripheral oedema.

The different treatments may cause side effects as well. LHRH antagonists may cause an allergic reaction. Anti-androgens may cause swelling of your breasts. This is called gynecomastia and can be painful in some cases. To prevent gynecomastia your doctor may recommend radiation therapy of your chest before the start of the hormonal therapy. In rare cases, you may need surgery to remove the mammary glands. Anti-androgens could worsen hot flushes. These can be treated with low-dose oestrogen therapy. Oestrogens can increase the risk of heart disease. Flutamide can cause diarrhoea.

How bothersome the side effects of hormonal therapy are, and when they appear, varies from person to person. This is related to your general health and the type of treatment you get.

With time, prostate cancer cells become resistant to hormonal therapy, and the cancer will start to grow again. This is known as castration-resistant prostate cancer. How long this takes to develop varies from person to person.

Follow up

It is generally recommended to visit your doctor every 3 months after you start hormonal therapy, to monitor the disease. Each visit includes a physical examination and a PSA test. These tests are used to see how you are responding to the treatment. During these visits you can discuss with your doctor if there is a treatment option to manage side effects. Your doctor will adjust the follow-up visits according to your needs.

Glossary of terms

Anaesthesia

Medication administered before the start of a procedure to manage pain. Under general anaesthesia, you are unconscious and unaware of what is happening to you. Under spinal or local anaesthesia, you will not feel pain in the part of your body where the procedure is done. Anaesthesia wears off gradually after the procedure.

Androgen deprivation therapy (ADT)

A therapy in prostate cancer, with the aim to stop or slow down tumor growth. Prostate cancer cells usually require androgen hormones, such as testosterone, to grow. ADT reduces the levels of androgen hormones, with drugs or surgery, to prevent the prostate cancer cells from growing.

Androgens

Male sex hormones that control and provide male characteristics like facial hair and lower voice.

Cancer

Abnormal cell growth in the skin or organ tissue.

Castration

A chemical or surgical treatment in which the production of androgens is stopped, or the effect of the hormones is blocked.

Castration-resistant prostate cancer

A type of prostate cancer that needs lower levels of androgens to continue to grow.

Chemical castration

A type of treatment in which drugs are used to stop the production of androgens, or block their effect.

Depot injections

An injection of a drug, usually into the muscle or right under the skin. The drug is either solid or oil-based and the active compound is released over a long period of time, without having to take any extra steps.

Diabetes

A disorder of the metabolism causing excessive thirst and the production of large amounts of urine.

Erectile dysfunction

The inability to get or keep an erection firm enough to have sexual intercourse.

Gynecomastia

A hormonal disorder in which men have benign enlargement of breast tissue.

Hormonal therapy

Any treatment option in which hormones are used.

Hot flushes

A medical condition characterized by redness of the skin, sweating and a sudden feeling of inner heat.

Infection

Infection is the invasion of an organism's body tissues by disease-causing agents, their multiplication, and the reaction of host tissues to these organisms and the toxins they produce.

LHRH agonists

Drugs used in prostate cancer treatment to stop the production of testosterone in the testicles.

LHRH antagonists

Drugs used in prostate cancer treatment to stop the production of testosterone, by inhibiting the production of androgens.

Locally-advanced prostate cancer

A prostate cancer where the tumour has spread outside of the prostate and into surrounding tissue.

Oestrogen

The main female sex hormones which control female characteristics of the body and are important to the reproductive and menstrual cycle.

Orchiectomy

A method of surgical castration in which one or both testicles are removed. If only one testicle is removed, this is known as unilateral orchiectomy. If both testicles are removed this is referred to as bilateral orchiectomy.

Glossary of terms

Osteoporosis

A bone disease characterized by a reduction of bone mass.

Peripheral oedema

Oedema means swelling. Peripheral oedema refers specifically to swelling of the ankles and legs.

Radiation therapy

A type of cancer treatment that uses radiation to control or kill malignant cells.

Prostate

The gland which produces the fluid which carries semen. It is located in the male lower urinary tract, under the bladder and around the urethra.

Sex hormones

In male androgens – group of steroid hormones, represented mainly by testosterone.

Testicles

The testicles are the male organs that produce sperm and the male hormone testosterone.

Testosterone

A steroid androgen hormone that is produced mainly in the testicles and is responsible for the development of male sexual characteristics.

Tumour

A growth of abnormal cells.

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