

Prostate Cancer

Hormone therapy

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FIGHTING MALE CANCER



Every year over 35,000 men in the UK will be diagnosed with prostate cancer. It is the most common cancer in men over the age of 55 years, and an estimated 1 in 14 men will develop the condition in their lifetime.

One of the treatment options for prostate cancer is hormone therapy. If you or someone you know has been recommended this course of treatment you may find this leaflet helpful. It examines the role of the prostate gland, what is known about the causes of prostate cancer, when hormone therapy is used, what the treatment

involves and some of the possible side effects.

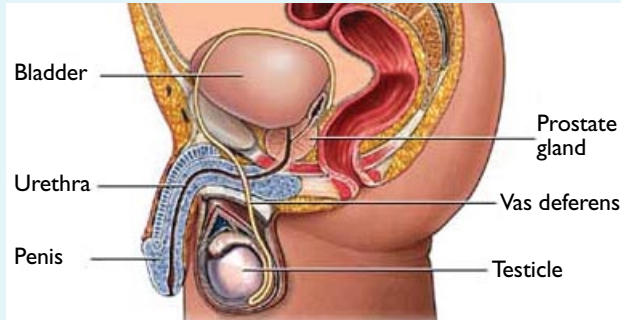
Further information and sources of support can be found in the resources section at the end of this leaflet or by visiting the Orchid website at

www.orchid-cancer.org.uk



What is the Prostate Gland?

The prostate gland is located just below the bladder. It is only found in men and is responsible for helping to produce the fluid in semen. The gland is tiny at birth but grows in size after puberty due to rising levels of the male hormone, testosterone.



What causes prostate cancer?

Prostate cancer occurs when normal, healthy cells, which are carefully regulated in the body, begin to reproduce uncontrollably in the prostate gland. In most cases, the growth is slow and the cancer can go undetected for many years because it causes very few symptoms. In some cases, however, prostate cancer grows quickly and may spread to other parts of the body, such as the lymph nodes or bones.

What happens after I am diagnosed with prostate cancer?

If you are diagnosed with prostate cancer, your specialist healthcare team will identify the “grade”, or aggressiveness, and the “stage”, or progression, of your cancer, in order to determine the best course of treatment.

The grade of cancer is determined through the biopsy and the system used to measure the grade is called the Gleason system. If the cancer is slow growing, only within the prostate gland and non-aggressive, it will have a low Gleason score. If it is fast growing, at risk of spreading to other parts of the body, and aggressive, it will have a high Gleason score. Most cancers will be scored somewhere between 6 and 10.

The stage of your cancer determines how far, if at all, it has spread. Tests might include Computerised Tomography (CT) scanning, a bone scan or Magnetic Resonance Imaging (MRI). You may have early prostate cancer or localised prostate cancer, where the cancer is only in the prostate gland, locally advanced prostate cancer where the cancer has spread to nearby lymph nodes in the pelvis, or metastatic disease where the cancer has spread to distant lymph nodes or the bones.

What are the treatment options for prostate cancer?

Your specialist healthcare team will consider factors such as the grade and stage of your cancer, your general health, personal choice and medical history before deciding on the best course of action. There are a number of treatment options currently available and these will be discussed with you. The main treatment options are:

- ▶ Active surveillance and “watchful waiting”
- ▶ Surgery (open, keyhole or robotic surgery)
- ▶ Radiotherapy
- ▶ Chemotherapy
- ▶ Hormone therapy

There are many new treatments for prostate cancer under development. You may read about cryosurgery or cryotherapy, high-intensity focused ultrasound (HIFU) and gene therapy and immunotherapy. Some people with prostate cancer may be considered for a clinical trial during their course of their treatment. Your specialist healthcare team can explain these to you and advise if any may be suitable for you.

What is hormone therapy?

Hormones are chemicals produced by your body which control the activities of other organs or groups of cells. You may have heard or read about testosterone – a hormone which is produced primarily in the testicles. It plays an important role in developing the male reproductive tissues, sex drive and sperm production. It also plays a role in developing muscle size, bone growth, facial and pubic hair and the deepening of your voice.

Research has shown that testosterone can encourage the growth of prostate cancer cells. Hormone therapy is designed to stop testosterone reaching the actual prostate cancer cells. Some types of hormone therapy will stop testosterone from being released by your body.

Is hormone therapy a cure for prostate cancer?

Hormone therapy is not a cure for prostate cancer but can help to manage it and keep it under control, sometimes for long periods. Many patients may never need any other treatment.

When is hormone therapy used?

Hormone therapy is used in different ways depending on the stage of your cancer, your general health, personal choice and medical history.

It is a standard treatment for locally advanced prostate cancer but if you are diagnosed with localised prostate cancer it may be given before or during your radiotherapy. If you have been diagnosed with advanced prostate cancer or metastatic disease you may be offered hormone therapy as it can act on prostate cancer cells wherever they are in your body.

Men who are not suitable for surgery may be recommended hormone therapy.



What are the different types of hormone therapy?

There are many different types of hormone therapy:

1 **Gonadotropin-releasing hormone (GnRH) agonists also called leuteinising hormone releasing hormone agonists (LH-RH) - examples include goserelin and leuprorelin**

GnRH is a hormone released by the body before testosterone is produced. It is naturally released in pulses and if it is given continuously it stops the testicles producing testosterone. Medication is given by an injection in your arm, abdomen or buttock. Injections may be given once a month or every three months. They may be given in primary care by your practice nurse.

Medication can also be given through an implant inserted under the skin of your upper arm – this is administered once a year, as opposed to monthly or every three months, and the treatment is released into your body every day over the 12 month period. At the end of 12 months your specialist healthcare team may insert a new implant.

2 **Gonadotropin releasing hormone antagonists**

These medications work in a similar way to agonists but they do not cause an initial surge or overproduction of testosterone when first used and so their effect starts more rapidly.

3 **Anti-androgen medications - examples include flutamide and bicalutamide**

These medications work by blocking testosterone from reaching the cancer cells. They may be used on their own, after an orchidectomy or alongside LH-RH agonists or antagonists. Anti-androgens are usually given as tablets.

You may also be given anti-androgen medications at the start of GnRH agonist therapy – often for a month or so.

Some patients are given these drugs as an alternative to GnRH therapy. They are slightly less effective but may allow erections to occur and in certain circumstances are a reasonable alternative.

4 Oestrogens

Oestrogen is one of the female sex hormones responsible for sexual development and controlling the female reproductive system. The hormone is also produced in men but to a lesser degree. If you have been diagnosed with advanced prostate cancer or metastatic disease, a medication which resembles oestrogen may be recommended. It stops the production of testosterone and targets the cancer cells. Oestrogens may be given as tablets or occasionally as patches on the skin. They are often used when initial hormone therapy has failed as they have additional side effects.

5 Corticosteroids - examples include hydrocortisone and dexamethasone

Corticosteroids are used to control prostate cancer when GnRH therapy alone is no longer effective. In small doses the side effects are mild but they can include weight gain and skin thinning. They are normally given as tablets.

6 Orchiectomy

Orchiectomy is surgery which involves the removal of one or both testicles. It can be used in the treatment of both testicular and prostate cancer but in prostate cancer both the testicles are removed which stops the production of testosterone.

The surgery cannot be reversed and there are obvious physical changes which occur afterwards. No further hormone therapy is needed after the operation.



What are the possible side effects of hormone therapy?

As with all medications, there is a risk that you will experience some side effects. Your specialist healthcare team will discuss the possible risks and side effects of hormone therapy and how these may affect you. They will also discuss how these can be managed.

The most common side effects include:

- ▶ A loss of sex drive or difficulty achieving an erection
- ▶ Hot flushes. These can last for a few seconds to a few hours and you may feel overheated, look flushed or experience sweating
- ▶ Tiredness or lethargy
- ▶ Weight gain
- ▶ Forgetfulness or problems concentrating
- ▶ Depression, mood swings or feeling emotional
- ▶ Thinning or brittle bones
- ▶ Fractures
- ▶ Breast swelling or tenderness
- ▶ Loss of muscle mass

Some medications may cause circulation problems and may not be suitable if you have diabetes, high blood pressure or heart disease.

What is intermittent hormone therapy?

One of the tests you will be given during your treatment is the PSA (prostate specific antigen) blood test which measures the level of protein produced by the prostate. If your PSA level is low, your hormone therapy treatment may be stopped temporarily. It may be re-administered when your PSA level begins to rise. This is known as intermittent hormone therapy. During your “medication-free” period you will have reduced or minimal side effects. Intermittent hormone therapy is equally effective to continuous treatment but you may need closer supervision and more regular PSA blood tests. When hormone therapy is stopped, sexual function can return and bone thinning (osteoporosis) stops.

Professor R Tim D Oliver, one of the founders of Orchid was instrumental in developing this therapy.

What happens if my initial hormone therapy no longer works?

Hormone refractory prostate cancer (also known as castrate resistant prostate cancer) occurs when hormone therapy no longer controls the growth and spread of your prostate cancer. This may happen after a few months or years. Your specialist healthcare team will look at alternative treatments to manage your cancer – this may include a change in hormone therapy or often chemotherapy is recommended.

Chemotherapy works by killing the existing cancer cells. It also stops the cancer from growing. Docetaxel is a chemotherapy treatment for hormone-refractory prostate cancer that has spread to other parts of the body. It has been shown to help patients live longer and to improve symptoms caused by the cancer – it is given intravenously every 3 weeks. Side effects can include tiredness, hair loss, a sore mouth, and increased risk of infection.

Are there any new treatments for prostate cancer?

There are many new treatments for prostate cancer under development. You may have heard about the following:

- ▶ Abiraterone is a hormone therapy which works by blocking testosterone from the adrenal glands (over 95% of the hormone testosterone is produced in the testicles but a small amount is also produced in the adrenal glands). Researchers are investigating how it may benefit men whose cancer has spread to other parts of the body and for whom conventional hormone therapy no longer works.
- ▶ Cabazitaxel is a form of chemotherapy. Initial work suggests it may be useful when docetaxel stops working. Researchers are investigating how it may benefit men with prostate cancer who no longer are helped by docetaxel.
- ▶ Immunotherapy uses an individual's immune system to fight cancer. Provenge is made from your own immune cells and alerts your immune

system that the cancer is a threat and should be attacked.

Some people with prostate cancer may be considered for a clinical trial during the course of their treatment. These trials are an important part of the cancer research process. Individuals who take part in a clinical trial may receive the standard treatment for their cancer or be among the first to receive a new treatment.

What is palliative care?

If the cancer is very advanced or if it has spread to other parts of the body there may be limited or no treatment options. In this case your specialist healthcare team will offer palliative care to help relieve pain or other symptoms.

What can I expect during the course of my treatment?

Your specialist healthcare team will want to see you during the course of your treatment. They will run tests to see how your treatment is working and whether to continue, change or stop a specific course of treatment. You should not stop your treatment without speaking to your specialist healthcare team or GP.

Conclusion

Hormone therapy is one of the treatment options for prostate cancer and we hope the information provided in this leaflet has been helpful.

You should always consider speaking to your specialist healthcare team or GP about any healthcare concerns and you may wish to take this leaflet with you when you meet them.

Resources...

For further information and support on prostate cancer please visit the Orchid website at www.orchid-cancer.org.uk or call 0203 465 5766.

Orchid has produced a series of Factsheets on specific issues relating to prostate cancer. You may find the following helpful:

- ▶ **Prostate Cancer:** The Familial Link
- ▶ **Prostate Cancer:** The Big Question
- ▶ **Diet:** Vitamin D and Prostate Cancer
- ▶ **Hereditary Prostate Cancer**

Low-down, Orchid's newsletter features the latest news and developments in male cancer including research, treatments, new services and events.

Other helpful websites include:

www.cancerhelp.org – which offers a broad range of information and support from Cancer Research UK for everyone affected by cancer. Contains a comprehensive section on prostate cancer.

www.macmillan.org.uk – offers information and support for everyone affected by cancer. Contains a comprehensive section on prostate cancer.

www.prostate-cancer.org.uk – The Prostate Cancer Charity provides support and information to people affected by prostate cancer.

Written and edited by:

Orchid Cancer Appeal and
Orchid Editorial Board
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References to sources of information used in this booklet are available from Orchid.

Orchid is the UK's leading charity dedicated to supporting men and their families who are affected by male specific cancers – testicular, prostate and penile. Established in 1996 by a young testicular cancer patient and the oncologist who saved his life, Orchid works to improve the lives of people affected by male cancers through a world class research programme, educational campaigns and raising awareness and an extensive support service.

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