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Castration-resistant Prostate Cancer

The underlined terms are listed in the glossary.

Castration-resistant prostate cancer is a type of prostate cancer that usually develops during treatment for metastatic disease.

Prostate cancer can spread to other organs or lymph nodes outside of the pelvic area. This is called metastatic prostate cancer. The tumours in other organs or lymph nodes are called metastases. Your doctor may recommend treating metastatic disease with hormonal therapy.

Hormonal therapy either stops the production or blocks the action of androgens. This is known as castration. When effective, hormonal therapy stops the growth of the tumour. This effect will not last and leads to castration-resistant prostate cancer. This generally happens 2-3 years after hormonal treatment started. Castration-resistant prostate cancer cannot be cured.

Castration-resistant prostate tumours need much lower levels of androgens to progress. This means that even when your body produces almost no androgens, the tumour and metastases continue to grow. These cancers are called castration-resistant, because they no longer respond to hormonal castration treatment.

In this type of cancer, the level of prostate-specific antigen (PSA) in the blood rises again. The doctor will diagnose castration-resistant prostate cancer if 3 tests in the space of 3 weeks show an increase in the PSA level in your blood. It can also be diagnosed if you experience symptoms caused by the growing tumour or metastases.

Research on castration-resistant prostate cancer is ongoing and treatment options change quickly. This section addresses different treatment options, which you should discuss with your doctor.

This section offers general information, which is not specified to your individual needs. Keep in mind that individual recommendations may depend on your country and health care system.

Management of castration-resistant prostate cancer

If you have been diagnosed with castration-resistant prostate cancer, your doctor will recommend a care pathway to manage your symptoms and allow you to live longer. It is important to remember that castration-resistant prostate cancer cannot be cured.

Castration-resistant prostate cancer can be managed with:

- Anti-androgen treatment
- Oestrogen therapy
- Adrenolytic agents
- New hormonal agents
- Immunotherapy
- Chemotherapy
- Radiation therapy

Because castration-resistant prostate cancer still responds to androgens, your doctor will recommend to continue hormonal treatment to keep the levels of testosterone low.

Additional treatment with anti-androgen therapy

When you have been treated with either surgical or chemical castration, your doctor may recommend additional treatment with anti-androgen therapy. The most common anti-androgen drug to manage castration-resistant prostate cancer is bicalutamide. Treatment with this drug aims to slow down the growth of the tumour. It will not relieve your symptoms. Side effects may include swelling of the breasts and liver problems.

Stopping anti-androgen treatment

If you have been treated with LHRH agonists or antagonists in combination with anti-androgen therapy, your doctor may recommend to stop taking the anti-androgen drugs. This approach may lower the level of PSA in your blood for a few months. The effect will be seen 4-6 weeks after you stop taking the drugs.

Oestrogen therapy

Drug therapy with the hormone oestrogen can slow down the growth of the tumour and lower the level of PSA in your blood, without affecting your bones. This treatment can cause cardiovascular disease, including blood clots and heart attacks. Because of these risks, oestrogen therapy is rarely recommended today.

Adrenolytic agents

After castration, the adrenal glands continue to produce small amounts of androgens. Adrenolytic agents stop the adrenal gland from producing the hormones. Side effects of these drugs are diarrhoea, itching and skin rashes, fatigue, erectile dysfunction, and liver damage. These drugs are not commonly used.

Hormonal therapy with abiraterone acetate

The body needs an enzyme called CYP17 (17 α -hydroxylase) to produce testosterone. CYP17 is found in the testicles, adrenal glands, and prostate cancer cells. The new hormonal agent abiraterone acetate blocks CYP17 so that no testosterone is produced.

Treatment with abiraterone acetate aims to slow the growth of the tumour and metastases. It may allow you to live longer and with fewer symptoms.

The most common side effects of abiraterone acetate include fatigue, lower levels of potassium in the blood, high blood pressure, swelling or discomfort of the joints, and swelling caused by fluid retention.

While taking abiraterone acetate you may become tired and feel out of breath because of lower levels of red blood cells. Other changes to the blood may cause a fast, pounding, or irregular heartbeat, increased thirst and loss of appetite, nausea or vomiting, or fast weight gain.

Abiraterone acetate is taken twice a day as a tablet, and always used in combination with the steroid drug prednisone. Discuss with your doctor if abiraterone acetate is an option for you.

Hormonal therapy with enzalutamide

Prostate tumours need androgen receptors to grow. Enzalutamide is a new hormonal agent that blocks androgen receptors. It aims to lower the level of PSA in the blood and slow down the growth of the tumour.

Unlike abiraterone acetate, you do not need to take additional steroids while taking enzalutamide.

The most common side effects of enzalutamide are a feeling of weakness, back pain, and fatigue.

Immunotherapy

Immunotherapy is a type of treatment that uses your own immune system to fight the tumour cells. In prostate cancer the drug Sipuleucel-T is used as immunotherapy. Because your own blood is used to prepare the drug, you need to get blood drawn before the procedure.

Immunotherapy is administered through an IV, in an outpatient setting at the hospital or clinic. You need to go to the hospital 3 times every 2 weeks to get treated. If effective, immunotherapy will allow you to live longer, and slow the growth of the tumours. It will not lower the level of PSA in your blood. Common side effects can include fever, fatigue, nausea, and headache.

Chemotherapy with docetaxel

Chemotherapy is a type of cancer treatment that uses chemicals to destroy cancer cells. Chemotherapy drugs can be injected into the bloodstream to attack cells throughout the body. They can also be applied directly to the tumour.

Your doctor may recommend the chemotherapy docetaxel to manage castration-resistant prostate cancer. The drug relieves pain caused by the tumour or metastases. If effective, it allows you live longer and with fewer symptoms and side effects.

Docetaxel is administered through an IV in an outpatient setting at a hospital or clinic. The treatment lasts 1 hour and it is usually repeated 10 times, once every 3 weeks. During the course you will take the steroid drug prednisone, which generally comes as a pill. You need to take prednisone twice a day for 5-10 cycles.

Docetaxel may cause side effects. Many of these are mild and can be managed at home. Side effects of docetaxel may include:

- Lower levels of white blood cells
- [Anaemia](#)
- Hair loss
- Fluid retention
- Vomiting
- Allergic reactions
- Fatigue
- Diarrhoea
- Nail changes
- Loss of appetite

Treatment after chemotherapy

After you have been treated with docetaxel, your doctor can recommend treatment with hormonal therapy or another chemotherapy drug. The main hormonal treatments are abiraterone acetate and enzalutamide. Cabazitaxel is the chemotherapy drug most commonly used in these cases. You could also receive a second course of docetaxel. Your doctor will discuss the different treatment options to find the best one for you.

Abiraterone acetate

If your treatment with docetaxel was ineffective, your doctor may recommend hormonal treatment with abiraterone acetate. If effective, this drug can relieve pain, lower the level of PSA in the blood, slow the growth of the tumour and the metastases, and allow you to live longer.

Side effects of the treatment include fatigue, lower levels of potassium in the blood, high blood pressure, swelling or discomfort of the joints, and fluid retention. Abiraterone acetate is always administered in combination with the steroid drug prednisone to manage the effects the drug can have on your blood pressure.

Enzalutamide

Your doctor may recommend hormonal treatment with enzalutamide. If effective, this drug can lower the level of PSA in the blood, slow the growth of the tumour and the metastases, and allow you to live longer.

Possible side effects of the treatment are a feeling of weakness, back pain, diarrhoea, and fatigue.

Cabazitaxel

If docetaxel was not effective, your doctor may recommend treatment with the chemotherapy drug cabazitaxel. If effective, cabazitaxel will relieve pain, lower the level of PSA in your blood, slow the growth of the tumour and metastases, and allow you to live longer.

The side effects of cabazitaxel include a severe drop in white blood cells, and diarrhoea. Your doctor will recommend medication to manage these effects.

Discuss with your doctor which type of treatment after docetaxel is best for your individual situation.

Radiation therapy

Castration-resistant prostate cancer can be managed with radiation therapy. The radiation damages and kills cancer cells. The treatment will help to relieve pain and may allow you to live longer. Common side effects are a burning sensation when you urinate, urinary frequency, and anal irritation.

Treatment of bone metastases

Bones that are affected by tumours fracture more easily. If you are at risk of bone fractures, your doctor may recommend drugs to stabilize your bones. The most common drugs are bisphosphonates and denosumab. These drugs will help postpone the complications caused by bone metastases. Bone metastases can also be treated with radiation therapy.

Bisphosphonates are administered with an IV every 4 weeks. They increase your bone mass, and can postpone the complications caused by bone

metastases. The most effective bisphosphonate in prostate cancer is zoledronic acid. This drug can cause kidney damage.

Denosumab is administered under the skin every 4 weeks. It also increases bone mass but generally causes fewer side effects than bisphosphonates. Denosumab may cause low calcium levels in the blood.

Because these drugs can damage your jaws, your doctor will advise you to see a dentist before you start treatment.

Radiation therapy for bone metastases

Bone metastases from prostate cancer can be managed with radiation therapy. The treatment will help to relieve pain and may allow you to live longer.

Support

Getting diagnosed with castration-resistance prostate cancer can make you feel powerless. It can cause feelings of anxiety, anger, fear, or even depression.

To find support, approach your doctor or nurse in the hospital, or ask your family doctor. They will be able to give you contact information about patient organizations or others who can help you with psychological support, or practical matters such as financial and legal advice.

Support during hormonal therapy

The most common side effects of hormonal therapy are gynecomastia and hot flushes. To manage this, your doctor will advise you to monitor your weight and avoid alcoholic drinks. If you experience hot flushes, you can:

- Dress in layers
- Wear natural fabrics like cotton or linen, which let the body breathe
- Sleep under layers of light blankets so that you can remove some if you need to
- Avoid hot baths, saunas, or whirlpools
- Avoid hot or spicy food
- Drink plenty of water, and carry a bottle with you all day

Dealing with the side effects of immunotherapy and chemotherapy

If you need treatment for cancer, you will experience unpleasant side effects. The side effects are common and management includes therapies to relieve them. It is important that you tell the doctor about the side effects you have. Write down your symptoms every day and try to describe them as precisely as possible. Note how often they occur and how much they affect your daily life. In some cases temporary treatment interruption, dose modification, or stopping the treatment can be considered.

It is common that you experience fatigue. This means you feel more tired than usual, you are out of energy,

have trouble concentrating, and it doesn't get better after you sleep.

If you experience fatigue, it may help to:

- Write down things that give you energy, and give them priority during the day or week
- Get help with household tasks like washing, cleaning, or gardening
- Take short naps several times during the day
- Try to be as active as you can. A short walk every day is better than a long walk once a week
- When planning social activities like a trip or a visit, keep in mind you may need time to rest during the day. Discuss this with your family, friends, or caregiver so that you can plan ahead. It is important to tell them when you are feeling tired
- Discuss with your doctor if you plan to travel outside of your country. The doctor can give you advice about vaccinations or possible restrictions on certain medicines. Make sure to also check your travel insurance

Other common side effects include nausea, diarrhoea, high blood pressure, and taste alterations. Some things you can do to cope are listed below.

During treatment, you may experience nausea caused by the therapy, tumour growth, or anxiety about your prognosis. The doctor can prescribe medicine to reduce the nausea.

It may also help if you:

- Eat smaller meals but eat more often throughout the day to make sure you still get enough nutrition
- Eat snacks
- Drink smaller amounts but drink more often to stay hydrated
- Try cold dishes if hot meals make you nauseous
- Ask someone to cook for you, if possible

Another common side effect of the treatment is

diarrhoea. Diarrhoea can lead to dehydration and it is important to:

- Drink more than usual
- Avoid food that you think makes the diarrhoea worse
- Keep the anal area clean to prevent irritation
- Use moisturizer if you have anal irritation
- Ask the doctor to prescribe medicine to prevent diarrhoea

You may also experience a mild to moderate raise in your blood pressure, especially early on in your treatment. This is normal and can be managed with standard therapy. Your doctor will advise you if you need to monitor your blood pressure, and how often. If you feel dizzy or have a headache, let your doctor know as soon as possible.

Chemotherapy may also cause changes in how food tastes to you. You may even begin to dislike certain foods you liked before. The best way to figure out what food you like is to try different things:

- Drink water before you eat to neutralize your taste
- If red meat tastes strange try white meat or fish, or the other way around
- If hot food tastes strange try it cold, or the other way around
- Try using more spices, or try using less
- Use a plastic fork and knife if the food tastes of metal

Support during radiation therapy

During the course of radiation therapy you can generally carry on with your daily activities. The treatment may cause fatigue from the daily trips to the hospital, and can affect your lower urinary tract and bowel.

Your skin may be affected by the radiation. To care for your skin you can:

- Avoid scratching or rubbing the affected area
- Ask your doctor or nurse which type of skin lotion you should use to deal with skin irritation

- Avoid sun exposure
- Use a high-factor sunscreen
- Wear loose-fitting clothes in natural fabrics such as cotton or linen
- Wash yourself daily with mild soap and lukewarm water
- Gently pat your skin dry after washing
- Avoid the sauna

Lifestyle advice

It is important to maintain a healthy lifestyle during treatment. Try to get physical exercise regularly. Find an activity that you enjoy doing. If you have doubts about what you can do, ask your doctor to refer you to a physiotherapist.

Try to eat a balanced diet with a mix of vegetables, fruit, and dairy. Also include starchy food like bread and potatoes, rice or pasta, and protein-rich food like meat, fish, eggs, or legumes. Try to eat less sugar, salt, and fatty food. If you have any questions, ask your doctor to refer you to a dietician.

Psychological support

During treatment you may worry about your prognosis, the impact of cancer on your social or financial situation, or other issues.

If you feel the need to have someone to talk to, you can ask your doctor for a referral to a psychologist. A patient organization can also offer support.

Discuss with your health care team the possible financial consequences of your treatment. They might be able to direct you to people or places where you can get advice about your economic situation or even financial help. They can also help you find legal advice about your will and related matters.

Treatment can affect your sexuality. Feelings of depression and fatigue can also have a negative effect on your sexual life. It is important that you talk to your partner about your feelings. There are many ways in which you can be intimate. If you do not want to be sexually active, be near each other, touch each

other, give and take hugs, and just sit or lay down close to each other.

A cancer diagnosis can make you look at life in a different way and you may realize you now have different priorities. This will affect your work or relationships and can make you feel disoriented and uncertain. Talk to family, friends, or your spiritual advisor about your feelings and wishes. If you don't feel comfortable addressing these issues with those close to you, you can ask your health care team for a referral to a psychologist. The psychologist can give you the tools to deal with these feelings.

Support for family and friends

A cancer diagnosis not only affects the patient, but also the people around them. As a loved one, you can offer support in many different ways. Sometimes you can help with practical things like laundry, gardening, or grocery shopping.

It may also be helpful to go to the doctor together. You could offer to drive to the visit or help formulate questions to ask during consultation. Being there for the consult can also be good. You may remember different things or focus on other details, which you can later discuss together. You could also ask the doctor how the treatment may impact your lives in terms of caregiving and psychological effects.

The diagnosis and treatment can be very emotional for everybody involved. Cancer treatment is intense and your life may change suddenly. Questions about prognosis, effects of the treatment, and death will come up. As a friend or a loved one you can be there and listen. You don't need to have the answers.

If you feel you need somebody to talk to, approach your family doctor or the medical team to get support. Patient organizations also offer support for family members or friends of people who have been diagnosed with cancer.

Support for partners

A cancer diagnosis can put pressure on your relationship. Often talking to each other becomes more difficult because of the time and energy spent on treatment. You could decide to discuss any difficulties with a therapist.

You may experience a similar degree of stress, anger, and depression as your partner. You could feel exhausted, both physically and emotionally. This can be a result of the responsibilities of caring for your partner, and taking on extra tasks around the house. Be sure to make time for yourself and think about your own wishes and needs.

Cancer treatment can affect your sex life. Try to talk to your partner about your feelings. There are many ways in which you can be intimate. Be near each other, touch each other, give and take hugs, and just sit or lay down close to each other.

It is normal to worry about being left alone. If you feel you need somebody to talk to, approach your family doctor or your spiritual advisor. Patient organizations also offer support for partners. They can also help you find people or organizations who can help you with practical things like legal and financial issues.

How to find a patient organization nearby

Patient organizations can be very helpful. To find one close to you, ask your family doctor, nurse, or doctor at the hospital. You can also search the Internet for a patient group.

This information was updated in January 2015.

This leaflet is part of EAU Patient Information on Prostate Cancer. It contains general information about this disease. If you have any specific questions about your individual medical situation you should consult your doctor or other professional healthcare provider. No leaflet can replace a personal conversation with your doctor.

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