



Instillation treatment

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

This leaflet contains general information about instillation treatment. 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.

Instillation treatment

A single, immediate intravesical instillation of chemotherapy after TURBT

If a superficial tumour can be fully and safely resected during TURBT without an indication of deep invasive growth, an immediate instillation can be given after the procedure. A single instillation is not given if you have multiple tumours, if removal required surgery deep in the bladder wall, if there was possible perforation of the bladder, or if post-operative bleeding is too severe.

An immediate single instillation destroys tumour cells floating in fluids after TURBT and kills residual tumour cells at the site of removal and on small overlooked tumours. This reduces the risk of recurrence. Your doctor will recommend giving the instillation as early as possible, usually within the few hours after TURBT.

An instillation is put directly into the bladder through a catheter which is inserted during or after TURB.

Additional intravesical chemotherapy after TURBT

Additional intravesical chemotherapy after surgery depends on the prognosis. If you have low risk of recurrence and progression, a single instillation after TURBT is sufficient to reduce the risk of recurrence and is considered to be the standard treatment. If you have intermediate-risk tumour, a single instillation may not be enough, so additional chemotherapy instillations may be necessary. The optimal number and frequency of chemotherapy instillations have not been determined.

What is intravesical therapy?

With intravesical therapy for bladder cancer, drugs are put directly into the bladder through a catheter, instead of being injected into a vein or swallowed. Both immunotherapy and chemotherapy drugs can be given this way.

Intravesical BCG immunotherapy

Bacillus Calmette-Guérin (BCG) is a weakened (attenuated) bacterium related to the germ that causes tuberculosis. For this reason, it is very important that you report to your doctor any history of prior tuberculosis, even if it was only suspected. Other immunotherapies that you might have received in the past should also be reported.

BCG activates the immune system by causing superficial inflammation in the bladder that attracts and stimulates immune cells to kill cancer cells. Treatment usually starts a few weeks after TURBT and is given once a week for 6 weeks. Long-term 'maintenance' BCG therapy is sometimes given by extending the therapy to 12-36 months. Studies have shown that BCG therapy reduces the risk of progression for all different types of non-muscle invasive tumours.

As an outpatient treatment, the irrigation is given through an intermittent catheter. You should hold the irrigation fluid, ideally, for 2 hours before emptying the bladder.

Several protocols have been tested and proven effective, but patient reactions to this therapy vary. Consequently, the optimal number of induction instillations and the optimal frequency and duration of maintenance instillations have not been determined.

Side effects

Intravesical chemotherapy

The main side-effects of intravesical chemotherapy are irritation and a burning feeling in the bladder, which will disappear spontaneously after a few days.

BCG toxicity

Treatment with BCG is known to have more side-effects than intravesical chemotherapy. BCG can cause a burning feeling in the bladder and symptoms similar to the flu, such as fever, chills, and fatigue. Rarely, BCG is absorbed by the circulatory system and enters the rest of the body, leading to a serious infection (sepsis). In this case, you may experience high fever that does not get better with a pain reliever. You should see your doctor right away if this occurs. Your doctor will prescribe antibiotics used to treat tuberculosis, and those must be taken for several weeks.

Dealing with the side-effects of immunotherapy and chemotherapy

If you need treatment for cancer, you will experience unpleasant side-effects. Information on side-effects is included in the packet leaflet for the medicines used and is available from your doctor or pharmacist. Some countries require this information to be provided to the patient; in other countries, it must be requested. Every patient has the right to ask for information on the side-effects of their medications.

Side-effects can be common, very common, or uncommon, and management includes therapies to relieve them. It is important to tell your 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.

Common side-effects

Some common side-effects include fatigue, nausea, diarrhoea, high blood pressure, and taste alterations. Strategies to cope are listed below.

You may experience fatigue, which means you may feel more tired than usual, be out of energy, and have trouble concentrating, and it does not get better after you sleep.

If you experience fatigue, some strategies can help:

- 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 that 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.
- If you plan to travel outside of your country, discuss your plans with your doctor. The doctor can give you advice about vaccinations or possible restrictions on certain medicines. Also, make sure to check your travel insurance.

During treatment, you may experience nausea caused by 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 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, which can lead to dehydration. 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 moisturiser if you have anal irritation.
- Ask the doctor to prescribe medicine to prevent diarrhoea.

You may also experience a mild to moderate rise in blood pressure, especially early 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 can 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 sense of taste.
- If red meat tastes strange, try white meat or fish, or vice versa.
- If hot food tastes strange, try it cold, or vice versa.
- Try using more spices, or try using less.
- Use a plastic fork and knife if the food tastes of metal.

Glossary of terms

Bladder

Organ which collects urine from the kidneys.

Bladder wall

The different layers of tissue that shape the bladder.

Cancer

Abnormal growth in the skin or organ tissues.

Chemotherapy

Treatment of cancer with drugs that are toxic cells. Some are specifically toxic to cells that grow faster than normal, like cancer cells.

Fatigue

This means you feel more tired than usual. You are out of energy, and it doesn't get better after your sleep. You may also experience pain in your joints, muscles, and chest.

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.

Inflammation

Inflammation is part of the complex biological response of body tissues to harmful stimuli, such as pathogens, damaged cells, or irritants, and is a protective response involving immune cells, blood vessels, and molecular mediators. The function of inflammation is to eliminate the initial cause of cell injury, clear out necrotic cells and tissues.

Intermittent catheter

A tube that is manually placed in the urethra and removed several times a day to help you urinate and empty the bladder fully.

Invasive

Any procedure in which the doctor inserts instruments into the body, or parts of the body.

Irrigation

Injection of a solution into the body to cleanse and administer drugs at a specific site.

Prognosis

The medical term for predicting the likely outcome of recovery (health) after treatment.

Recurrence

The return of cancer after treatment and after a period of time in which the cancer could not be detected. This can happen either in the place where the cancer first was detected, or somewhere else in the body. There is no standard period of time.

Tuberculosis

A disease caused by breathing in a bacteria called *Mycobacterium tuberculosis*. TB usually infects the lungs. TB can also infect other parts of the body, including the kidneys, spine and brain.

Tumour

A growth of abnormal cells.

TURBT

Transurethral resection of bladder tumour (TURBT). It is the surgical removal (resection) of bladder tumours.

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