

Bladder Cancer: Immunotherapy



What is immunotherapy?

Immunotherapy helps your own immune system better fight cancer. This type of treatment is a type of biologic therapy. For this treatment, medicines are used to make the immune system find and kill cancer cells.

When might immunotherapy be used for bladder cancer?

Immunotherapy might be an option if:

- You have early-stage, superficial bladder cancer. This means the cancer is small and has not spread beyond the lining of your bladder. (This is the most common use for bladder cancer.)
- Cancer does not respond to or starts growing again after chemotherapy.
- You have health problems that keep you from getting chemotherapy.

Systemic immunotherapy might be used for bladder cancer that has spread to other parts of the body or has come back after treatment.

How is immunotherapy given for bladder cancer?

These are the two ways immunotherapy might be given:

- Intravesical therapy
- Systemic therapy

Intravesical therapy

The most common way to give immunotherapy for bladder cancer is intravesically. This means the medicines are put right into your bladder. (They don't go to the rest of your body.)

Early-stage bladder cancers are often treated with immunotherapy. These cancers are small and only in the lining of your bladder. They have not spread into deeper layers of the bladder wall. One medicine that is used is called BCG (Bacillus Calmette-Guerin). It's put into your bladder through a catheter that's put in through your urethra. Your body's immune system responds to BCG and attacks and kills the bladder cancer cells.

BCG treatment can be done in your healthcare provider's office or an outpatient clinic. You will go home the same day. Most people get weekly treatments for 6 weeks at first. This can be repeated if needed. Then follow-up treatments will be done over the next 1 to 3 years. Follow-up treatment schedules vary a lot. For instance, you may get a treatment 3 weeks in a row every 3 months, or it might be done twice a year. These treatments are called maintenance BCG treatments. They help keep the cancer from coming back. Your healthcare provider will talk with you about the best plan based on your cancer and how it responds to treatment.

Another medicine that is used is nadofaragene firadenovec. It contains a virus that has a gene that makes interferon alfa-2b. When it is placed in the bladder, it can deliver this gene into the bladder wall cells. The cells then start making extra interferon alfa-2b, which helps the body's immune system attack the cancer cells.

Systemic immunotherapy

This means the immunotherapy medicine is put into your blood through a vein (intravenously). The medicine can then go through your whole body. This is why it's used to treat cancer that has spread beyond the bladder.

Some of the immunotherapy medicines used for bladder cancer include:

- Avelumab
- Nivolumab
- Pembrolizumab

These medicines target certain proteins that keep immune system cells from killing cancer cells. When these proteins are blocked, your immune system is able to stop tumor growth, make tumors grow at a slower rate, or kill cancer cells.

Systemic immunotherapy is often given once a week every few weeks. The schedule depends on the medicine that's used. You can get it at your provider's office or an outpatient clinic. You don't have to stay in the hospital for this treatment.

Antibody-drug conjugates (ADCs) are another type of immunotherapy. They consist of monoclonal antibodies that are linked to chemo medicines. Once inside the body, the monoclonal antibody part acts like a homing device, taking the chemo medicine right to the cancer cells. Two types of ADCs are enfortumab vedotin and sacituzumab govitecan.

What are common side effects of immunotherapy?

Side effects depend on the way you get immunotherapy and the medicine that's used.

Side effects of **intravesical immunotherapy** can include:

- Mild pain or burning in your bladder
- Feeling the need to urinate often
- Pain when you urinate
- Bloody urine, or even blood clots in your urine
- Flu-like symptoms, such as chills, severe tiredness (fatigue), achiness, and fever
- Serious infection if BCG spreads through your body. (This is rare but can happen even many years later.)

These side effects often go away a few days after treatment. Still, make sure you know what to watch for and when you need to contact your healthcare provider.

Depending on what type of medicine is used, side effects of **systemic immunotherapy** can include:

- Skin changes, such as itchy rashes, redness, blistering, cracking, and dryness
- Fatigue
- Cough
- Appetite loss
- Nausea
- Diarrhea
- Constipation
- Urinary tract infections (UTIs)
- Peripheral neuropathy
- Taste changes
- Allergic reaction

- High blood sugar
- Low red or white blood cell counts

Most of these side effects can be treated, and some can even be prevented. Talk with your treatment team to learn what you can do to help manage side effects. Be sure you know what side effects your healthcare provider needs to know about right away. Most of them go away after treatment ends, but some can become long-term problems.

Working with your healthcare provider

Talk with your healthcare providers about what side effects to look for and when to call them. For instance, it's normal to have a slight fever after immunotherapy. But if you have a high fever or other symptoms that last for more than a few days, call your healthcare provider. It could be a sign of infection. Make sure you know what number to call with questions or problems. Is there a different number for evenings, weekends, or holidays?

It may be helpful to keep a diary of your side effects. Write down physical, thinking, and emotional changes. A written list will make it easier for you to remember your questions when you go to your appointments. It will also make it easier for you to work with your healthcare team to make a plan to manage your side effects.

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