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Last Revised: January 30, 2019

Intravesical Therapy for Bladder Cancer

With intravesical therapy, the doctor puts a liquid drug right into your bladder rather than giving it by mouth or injecting it into your blood. The drug is put in through a soft catheter that's put into your bladder through your urethra. The drug stays in your bladder for up to 2 hours. This way, the drug can affect the cells lining the inside of your bladder without having major effects on other parts of your body.

When is intravesical therapy used?

After TURBT

Intravesical therapy is commonly used after transurethral resection of bladder tumor (TURBT). It's often done within 24 hours of the TURBT procedure. Some experts say it should be done within 6 hours. The goal is to kill any cancer cells that may be left in the bladder.

To treat non-invasive bladder cancer

These cancers are only in the lining of the bladder. They may be called non-invasive (stage 0), or minimally invasive (stage I) bladder cancers. They have not spread into deeper layers on the bladder wall muscles or to other parts of the body. Intravesical chemotherapy is used for these early-stage cancers because drugs given this way mainly affect the cells lining the inside of the bladder. They have little to no effect on cells elsewhere. This means that any cancer cells outside of the bladder lining, including those that have grown deeply into the bladder wall, are not treated by intravesical therapy. Drugs put into the bladder also can't reach cancer cells in the kidneys, ureters, and urethra, or those that have spread to other parts of the body.

One dose of intravesical chemotherapy might be the only treatment needed for non-invasive cancers.

Low-risk non-invasive (low-grade) bladder cancers grow slowly. They may be treated with 1 dose of intravesical chemo after TURBT. It's used to help keep the cancer from coming back.

Intravesical chemotherapy or immunotherapy may be used for intermediate non-invasive bladder cancers. Some studies suggest that immunotherapy works best. It's done once a week for 6 weeks, and may be repeated for another 6 weeks if needed. This is called induction therapy. After a 4- to 6-week break, maintenance treatments are then done for at least 1 year.

High-risk non-invasive bladder cancers might be fast-growing (high-grade), big, or there may be more than 1 tumor. They're treated with induction intravesical immunotherapy. If there's a good response to induction therapy, it's followed by 3 years of maintenance intravesical immunotherapy.

Intravesical immunotherapy maintenance treatment schedules vary. For instance, treatment may be done for 3 to 6 weeks every month, every 3 months, or twice a year. It can be done for 1 to 3 years. Your doctor will talk with you about the best plan based on the details of your bladder cancer and how it responds to treatment.

To treat higher-stage, invasive bladder cancers

One dose of intravesical chemotherapy is done within 24 hours of TURBT. But other types of treatment are usually the next steps for Stage II to IV (2 to 4) bladder cancers because they have spread beyond the lining layer of the bladder wall.

Sometimes induction and maintenance intravesical immunotherapy is used after radiation and systemic (in the blood) chemo for stage II cancers if surgery can't be done. It's seldom used for stage III. When it is, it's used along with other treatments in cases where surgery can't be done. Stage IV bladder cancers are rarely treated with intravesical therapy.

Types of intravesical therapy

There are 2 types of intravesical therapy:

- Immunotherapy
- Chemotherapy

Intravesical immunotherapy

Immunotherapy causes the body's own immune system to attack the cancer cells.

Bacillus Calmette-Guerin or **BCG** is the most common intravesical immunotherapy for treating early-stage bladder cancer. It's used to help keep the cancer from growing and to help keep it from coming back.

BCG is a germ that's related to the one that causes tuberculosis (TB), but it doesn't usually cause serious disease. BCG is put right into the bladder through a catheter. It reaches the cancer cells and "turns on" the immune system. The immune system cells are attracted to the bladder and attack the bladder cancer cells. BCG must come in contact with the cancer cells to work. This is why it's used for intravesical therapy.

Treatment with BCG can cause a wide range of symptoms. It's common to have flu-like symptoms, such as fever, achiness, chills, and fatigue. These can last for 2 to 3 days after treatment. It also commonly causes a burning feeling in the bladder, the need to urinate often, and even blood in the urine. Rarely, BCG can spread into the blood and through the body, leading to a serious infection. This can happen even years after treatment. One sign of this can be a high fever that isn't helped by Tylenol or medicines like it. If this happens, call your doctor right away. You might want to ask about other serious side effects you should watch for and call your doctor about.

Intravesical chemotherapy

For this treatment, chemotherapy (chemo) drugs are put right into the bladder through a catheter. These drugs kill actively growing cancer cells. Many of these same drugs can also be given systemically (usually into a vein) to treat more advanced stages of bladder cancer. Intravesical chemotherapy is most often used when intravesical immunotherapy doesn't work. It's seldom used for more than 1 year.

The chemotherapy solution might be heated up before it's put into the bladder. Some experts believe that this makes the drug work better and helps it get into the cancer cells. When the chemo is heated, it might be called hyperthermic intravesical therapy.

Mitomycin is the drug used most often for intravesical chemotherapy. Delivery of mitomycin into the bladder along with heating the inside of the bladder, a treatment called **electromotive mitomycin therapy**, may work even better than giving intravesical mitomycin the usual way.

Gemcitabine may cause fewer side effects than mitomycin and is less likely to be absorbed into the blood.

Valrubicin might be used if BCG stops working. But not all experts agree on this

treatment.

The main side effects of intravesical chemo are irritation and a burning feeling in the bladder, and blood in the urine.

A major advantage of giving chemo right into the bladder instead of injecting it into the bloodstream is that the drugs usually do not reach and effect other parts of the body. This helps people avoid many of the side effects linked to chemo.

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