

Urinary Bladder Cancer Treatment

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Received: November 01, 2021; **Accepted:** November 15, 2021; **Published:** November 22, 2021

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Citation: Stephenson C (2021) Urinary
Bladder Cancer Treatment. J Appl Microbiol
Biochem Vol.5 No.11:54

Perspective

The bladder is a hollow organ located in the lower abdomen. It has the shape of a small balloon and a muscular wall that allows it to expand and contract to store urine produced by the kidneys. The kidneys are located above the waist, one on each side of the backbone. The kidneys' tiny tubules filter and clean the blood. They remove waste and produce urine. Urine flows from each kidney into the bladder via a long tube called a ureter. Urine is held in the bladder until it passes through the urethra and exits the body. Bladder cancer is a disease in which malignant (cancer) cells form in bladder tissues.

Types of bladder cancer

Bladder cancer can be classified into three types, all of which begin in bladder lining cells. These cancers are named after the type of cells that transform into malignant (cancerous) cells:

Transitional cell carcinoma: Transitional cell carcinoma is a type of cancer that begins in the bladder's innermost tissue layer. When the bladder is full, these cells stretch, and when it is empty, they contract. The transitional cells are where most bladder cancers start. Transitional cell carcinoma can be classified as either low- or high-grade.

Squamous cell carcinoma: Squamous cell carcinoma is a type of cancer that begins in the squamous cells (thin, flat cells lining the inside of the bladder). Cancer can develop as a result of a long-term infection or irritation.

Adenocarcinoma: Cancer that begins in glandular cells found in the bladder lining. Mucus is produced by glandular cells in the bladder. This is a very uncommon form of bladder cancer.

Cancer of the bladder lining is referred to as superficial bladder cancer. Invasive bladder cancer is defined as cancer that has spread through the bladder lining and into the muscle wall of the bladder, or cancer that has spread to nearby organs and lymph nodes.

Treatment

Surgery: During an operation, the tumour and some surrounding healthy tissue are removed. There are various types of bladder cancer surgery.

Transurethral bladder tumor resection (TURBT): This method is used for diagnosis, staging, and treatment. During TURBT, a surgeon inserts a cystoscope into the bladder through the urethra.

The tumour is then removed by the surgeon with a tool with a small wire loop, a laser, or fulguration (high-energy electricity). Before the procedure, the patient is given an anaesthetic, which is a pain-blocking medication.

Radical cystectomy and lymph node dissection: Cystectomy and lymph node dissection were performed. A radical cystectomy involves the removal of the entire bladder as well as any nearby tissues and organs. For men, the prostate and a portion of the urethra are usually removed as well. The uterus, fallopian tubes, ovaries, and a portion of the vagina may be removed in women. Lymph nodes in the pelvis are removed in all patients. This is referred to as a pelvic lymph node dissection. The most precise method for detecting cancer that has spread to the lymph nodes is an extended pelvic lymph node dissection. In rare, very specific cases, it may be necessary to remove only a portion of the bladder, a procedure known as partial cystectomy. This surgery, however, is not the standard of care for people suffering from muscle-invasive disease.

Urinary diversion: If the bladder is removed, the doctor will devise a new method of removing urine from the body. One method is to divert urine through a section of the small intestine or colon to a stoma or ostomy (an opening) on the outside of the body. To collect and drain urine, the patient must wear a bag attached to the stoma.

Side effects of bladder cancer surgery: Prolonged recovery time

- Infection
- Bleeding or blood clots
- Discomfort following surgery, as well as injury to nearby organs

- Infections or urine leaks following a cystectomy or urinary diversion when a neobladder is implanted, the patient may be unable to urinate or completely empty the bladder.
- Anesthesia risks or other coexisting medical issues
- For a period of time, you may experience a loss of stamina or physical strength.

Therapies using medication: Chemotherapy, Immunotherapy, Targeted therapy

Chemotherapy: Chemotherapy is the use of drugs to destroy cancer cells, typically by preventing the cancer cells from growing, dividing, and proliferating. A chemotherapy regimen, or schedule, typically consists of a predetermined number of cycles administered over a predetermined time period. A patient may be given one drug at a time or a combination of drugs on the same day.

Immunotherapy: Immunotherapy, also known as biologic therapy, is intended to boost the body's natural defences against

cancer. It employs materials created by the body or in a laboratory to enhance, target, or restore immune system function. It can be administered locally or systemically.

Targeted therapy: Targeted therapy is a type of cancer treatment that targets specific genes, proteins, or the tissue environment that contributes to cancer growth and survival. This type of treatment inhibits the growth and spread of cancer cells while attempting to minimise damage to healthy cells.

Radiation therapy: The use of high-energy x-rays or other particles to destroy cancer cells is known as radiation therapy. A radiation oncologist is a doctor who specialises in the use of radiation therapy to treat cancer. External-beam radiation therapy, which is radiation therapy delivered from a machine outside the body, is the most common type of radiation treatment. Internal radiation therapy, also known as brachytherapy, is the use of implants to deliver radiation therapy. Brachytherapy, on the other hand, is not used in bladder cancer. A radiation therapy regimen, or schedule, typically consists of a predetermined number of treatments administered over a predetermined time period.