



CURESADERS

BLADDER CANCER

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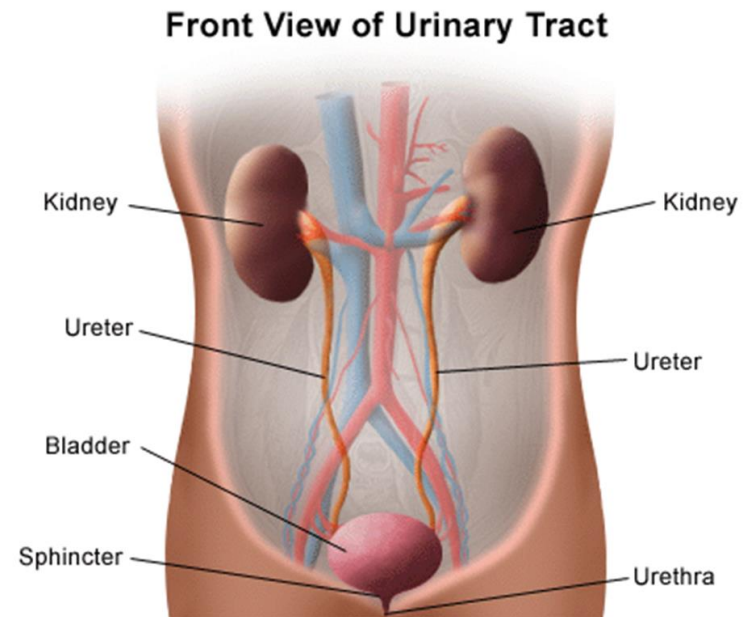
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Abstract

We are here today to raise awareness and inform you about bladder cancer. We will discuss the key statistics, risk factors, signs and symptoms, treatments, stages, and 9 genes that could be associated with recurrence of bladder cancer. There are different types of treatments for bladder cancer. There are also different signs and symptoms for bladder cancer. There are some types of diet where you can get bladder cancer and it differs with men and women. Men have a bigger chance of having bladder cancer than women. Diet risks increase the chance of having bladder cancer. There are genes that are associated with the recurrence of bladder cancer as well. There are 0 to 4 stages of bladder and they occur as the cancer progresses in the human body.

What is Bladder Cancer? [1, 2]

Bladder Cancer is when the cells in the urinary bladder, which is an organ in the body, grow too much. When the cells grows too much, it forms a tumor which can spread to other distant parts of the body over time.



Key Statistics [3]

- **About 61,700 new cases for bladder cancer in men, 18,770 new cases in women, in all, 80,470 new cases for bladder cancer per year**
- **About 17,670 deaths, which includes 12,870 in men, and 4,800 in women per year**
- **New cases for bladder cancer in both genders are decreasing over the years, but deaths are staying stable throughout the years**
- **Bladder cancer is more common in men than in women**
- **People who are older than 55 are more likely to be diagnosed with bladder cancer than people who are 55 or younger**

Key Statistics [3]

- **Whites are more likely to have bladder cancer than African Americans and Hispanic-Americans**
- **Most cases of bladder cancer are found when the cancer is still in the bladder**
- **4% of cases are found when the cancer is spread out to other distant parts of the body**
- **Half of all bladder cancer cases in both genders are caused from smoking**
- **The 5-year survival rate for all stages of bladder cancer is 77%**

Risk Factors [4]

- **Risk Factors that you can change are smoking, exposure to chemicals, specific medications or supplements, not drinking enough fluids, and arsenic in water.**
- **Risk factors that you cannot change are race, gender, age, bladder infections, bladder birth defects, genetics and family history, radiation therapy, and personal history with bladder cancer.**

Signs and Symptoms of Bladder Cancer [5]

- **Blood in the urine**
- **Having to urinate more often**
- **Pain or burning when urinating**
- **Not being able to urinate or having a weak urine stream**
- **Having low back pain**
- **Being Tired**

Stages of bladder cancer [6]

There is a system called the TNM system. The higher the number of any of the letters means the cancer is more advanced or mutated. The first stage of cancer is called stage 0. This ranges all the way to stage 4.

0 - The cancer has grown toward the empty center of the bladder but has not grown into the tissue or muscle of the bladder wall.

1 - The cancer has grown into the layer of tissue under the layer of the bladder but has not reached the layer of muscle in the bladder wall.

2 - The cancer has grown into the inner or outer muscle layer of the bladder wall, but it has not passed completely through the muscle to reach the layer of tissue that surrounds the bladder.

3 - The cancer has either grown into the layer of connective tissue under the lining of the bladder wall.

4 - The cancer has grown through the bladder wall into the pelvic or abdominal wall.

Treatments for bladder cancer [7]

Treatments for bladder cancer include:

- **Chemotherapy – drugs that kill cancer cells**
- **Radiation Therapy –use of radiation to target cancer cells**
- **Cystectomy - surgery to remove the bladder or parts of it**
- **Targeted medications to shrink to tumor or stop it from growing**
- **Immunotherapy – uses the body’s immune system to fight cancer**
- **Holistic medicine – nutrition, exercise, and other ways to treat without medicine**

Medical professionals who treat bladder cancer:

- **Primary care doctor – the patients “family” doctor**
- **Urologists - doctor who specializes in studying the urinary system**
- **Oncologists – doctors who can diagnose and treat cancer**
 - **Medical oncologists – is usually the main doctor to help with treatment**
 - **Radiation oncologists – doctor who knows how to use radiation for treatment**
 - **Surgical oncologist – a surgeon/doctor who operates on cancer patients**

There are 9 genes that could be associated with recurrence of bladder cancer [6]

The driver genes are:

EME1, AKAP9, ZNF91, PARD3, STAG2, ZFP36L2, METTL3, POLR3B, and MUC7 genes.

All these genes are tested and used in a 9-recurrence prediction model to help predict who is at high risk of recurrence of bladder cancer.

GENETICS IN BLADDER CANCER [8]

- **Bladder cancer risk is twice as high in first degree relatives than in other patients.**
- **This is because family members are exposed to the same risk factors and chemicals.**
- **Hereditary genetic changes NAT2 and GSTM1 make it difficult to decompose the toxins in the body and thus lead to bladder cancer**

Gender Difference in Bladder Cancer [9]

- **Smoking contributes more risk of bladder cancer to women who smoke than men who smoke.**
- **These gender differences could be related to differences in metabolism, smoking behavior, exposure patterns, and DNA repair mechanisms between women and men.**
- **Some potential risk factors are smoking, chewing tobacco and swallowing it.**
- **Higher body mass index (BMI) is a risk factor for bladder cancer.**
- **Other potential risk factors such as alcohol, arsenic exposure, and particulate matter inhalation affect both genders differently.**

Race Difference in Bladder Cancer [10]

- **Bladder cancer has high incidence rates in many southern and eastern European countries, in parts of Africa and the Middle East, and in North America.**

In the US:

- **Non-Hispanic whites have the highest rate of bladder cancer.**
- **Black Americans have the second highest rate.**
- **They are followed by Hispanic whites, and Asian Pacific Islanders.**

BLADDER CANCER OUTSIDE THE US [11,12]

- **Outside the US, the incidence of bladder cancer varies according to the location. The highest age-standardized incidence rate for men and women per 100,000 people is:**
- **Belgium: 17.5 cases per 100, 000**
- **Lebanon: 16.6 cases per 100,000**
- **Malta: 15.8 cases per 100,000**
- **Turkey: 15.2 cases per 100,000**
- **Denmark: 14.4 cases per 100,000**

- **Sixty per cent of cases of bladder cancer occur in higher-income countries. The lowest rates are in Asia, Latin America and the Caribbean.**

- **Survival rates vary across the world. The five-year survival rate is 76 per cent in the US, and 68 per cent in Europe, but survival tends to be better in higher-income than lower-income countries. [12]**

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