

THE SILENT KILLER: WHAT YOU MAY NOT KNOW ABOUT CERVICAL CANCER

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Abstract: This article presents scientific data on the etiology, cellular-level pathogenesis, diagnostic methods, treatment principles, and preventive measures of cervical cancer. Special attention is given to the role of human papillomavirus (HPV), immune system suppression, and lifestyle factors in the development of this disease. In addition, the cellular processes occurring in the early stages of cancer—often described as an “internal cellular battle”—are explained in a clear and accessible manner for the general reader.

Keywords: Cervical cancer, human papillomavirus (HPV), cellular alterations, diagnostics, Pap test, colposcopy, biopsy, treatment methods, prevention, HPV vaccine, women's health, oncological diseases.

INTRODUCTION

Cervical cancer is one of the most dangerous malignancies affecting the female reproductive system; however, it is also among the most preventable and the earliest detectable forms of cancer.

The disease develops gradually as slow, progressive changes occur in the cells of the lower part of the uterus—the cervix. These changes do not happen suddenly but evolve over many years, meaning that cervical cancer often progresses silently, steadily, and unnoticed within a woman's body.

Pathogenesis: How Does Cervical Cancer Begin?

The development of cervical cancer is a multistep process in which normal epithelial cells progressively transform into malignant tumor cells. At the center of this process lies human papillomavirus (HPV), particularly the high-risk oncogenic types 16 and 18.

After entering the basal (deep) epithelial cells of the cervix, HPV integrates its genetic material into the host cell's DNA. This integration disrupts the normal life cycle of the cell.

The viral oncoproteins E6 and E7 inactivate key tumor suppressor genes—p53 and retinoblastoma protein (Rb)—which are responsible for controlling cell division and apoptosis.

As a result, the following processes occur:

Uncontrolled cellular proliferation

Inhibition of apoptosis (programmed cell death)

Accumulation of genetic mutations

Consequently, epithelial cells lose their normal structure, organization, and function. This condition initially manifests as dysplasia, also known as cervical intraepithelial neoplasia (CIN).

However, HPV infection does not always lead to cancer. A strong immune system can often recognize and eliminate the virus. When immunity is weakened—due to chronic stress, smoking, vitamin deficiencies, or long-standing illnesses—the virus becomes active. At this stage, cervical cells begin to divide abnormally, structural integrity is disrupted, and a gradual progression toward malignancy begins.

The Hidden Secret of Cancer: Cellular Warfare

At the cellular level, cancer represents a breakdown of internal order and biological regulation.

Healthy cells follow a strict life cycle: they grow, divide when necessary, and die naturally once their function is complete. Cancer cells, however, defy these rules. They are cells that have escaped control and violated the body's regulatory laws. These cells:

Possess unlimited proliferative capacity and evade cell death

Induce angiogenesis by forming new blood vessels to sustain themselves

Displace and destroy surrounding healthy tissues

Spread to distant organs through blood and lymphatic vessels (metastasis)

Cervical cancer initially develops in the epithelial layer of the cervix, the body's primary protective barrier. Over time, cellular morphology, structural organization, and even genetic integrity become altered. Initially, these changes remain superficial, but without intervention, malignant cells invade deeper tissue layers.

If left undiagnosed and untreated, cervical cancer can spread to the uterine body, bladder, rectum, and eventually disseminate throughout the body via lymphatic pathways.

Early Detection: The Only Way to Save Lives

Early detection is the most effective strategy for preventing mortality from cervical cancer. Modern medical screening methods—such as the Pap test, HPV testing, and colposcopy—enable the detection of this “internal cellular battle” at its earliest stages.

Diagnosis and Prevention: Early Detection Saves Lives

Cervical cancer is one of the few cancers that can be completely cured if detected early. This outcome depends on women's awareness of their health and regular participation in screening programs.

Diagnostic Methods

In early stages, cervical cancer is often asymptomatic. Therefore, preventive screening is essential.

Pap Test (Papanicolaou test): A cervical smear is examined microscopically to detect abnormal cells. It is a simple, painless, and highly effective diagnostic tool.

HPV Testing: Detects the presence of human papillomavirus, particularly recommended for women over 30 years of age.

Colposcopy: A visual examination of the cervix using an optical instrument. If suspicious areas are detected, a biopsy is performed.

Biopsy: Histological examination of tissue samples; considered the gold standard for diagnosis.

Preventive Measures

Prevention is carried out at two levels:

Primary Prevention

The goal is to eliminate the cause rather than the disease itself.

HPV vaccination is the most effective preventive measure and is recommended for girls and women aged 9 to 45. The vaccine provides immunity against high-risk HPV types.

Maintaining personal hygiene, avoiding early sexual activity, limiting the number of sexual partners, breastfeeding after childbirth, proper use of hormonal contraceptives, and quitting smoking significantly reduce risk.

Secondary Prevention

Early detection prevents progression to advanced disease.

Every woman should undergo a Pap test at least once every three years. If HPV is detected, strict medical follow-up and adherence to treatment recommendations are essential.

Important Note

According to statistical data, mortality from cervical cancer decreases by 70–80% among women who undergo regular screening examinations. Thus, early diagnosis is not only a method of treatment but the most powerful tool for saving lives.

Lifestyle-Based Protection and Home Recommendations

Cervical cancer can only be diagnosed and treated through medical intervention. Therefore, “home-based care” refers not to self-treatment with traditional medicine, but to adopting preventive behaviors and a healthy lifestyle.

Strengthening Immunity

HPV becomes active primarily when immunity is compromised. Daily consumption of fruits and vegetables rich in vitamins A, C, and E (such as oranges, carrots, spinach, almonds, and tomatoes), adequate sleep (7–8 hours), stress reduction, and complete avoidance of smoking and alcohol help restore immune function.

Hygiene and Healthy Living

Wearing clean, ironed underwear made of natural fabrics, maintaining monogamous relationships, and using condoms significantly reduce HPV transmission risk. Special attention to hygiene during menstruation is essential.

Recognizing Early Warning Signs

Symptoms that require immediate medical consultation include postcoital bleeding, abnormal vaginal discharge with unpleasant odor or color, pelvic pain or pressure, and menstrual irregularities.

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