CERVICAL CANCER: PREVENTION, DIAGNOSIS AND MODERN TREATMENT METHODS

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Annotation:*One of the most prevalent cancers in women is cervical cancer. This article analyzes the disease's diagnosis, prevention, and contemporary treatment approaches. Screening tests, vaccinations, and advice on lowering risk factors are examples of preventive approaches. There is discussion of diagnostic techniques such the Pap test, HPV test, and biopsy. There are descriptions of several treatment modalities, including immunotherapy, chemotherapy, radiation, and surgery. According to research findings, avoiding the condition and improving the efficacy of therapy depend on early detection and preventive actions.*

Keywords:*Cervical cancer , prevention, diagnostics, modern treatment, vaccination, HPV, screening.*

One of the most prevalent malignancies in women is cervical cancer. The disease affects over 500,000 women globally each year, and around half of those instances end in death. Human papillomavirus (HPV) infection is the primary cause of the illness. Research indicates that strains 16 and 18 are responsible for over 70% of HPV infections.

Regular screening and vaccination can help prevent cervical cancer. As a result, prevention, early diagnosis, and the application of contemporary therapeutic techniques are crucial. An extensive review of cervical cancer risk factors, diagnostic techniques, and treatment options will be given in this article.

Etiology and risk factors of cervical cancer Main cause : HPV infection

of cervical cancer is infection with human papillomavirus (HPV). HPV strains 16 and 18 are considered high-risk and cause more than 70% of cervical cancers.

What kind of contagious virus is HPV?

Is a sexually transmitted virus that can cause a variety of cancers and tumors in both men and women. Once in the body, the virus attacks the DNA of cervical cells and disrupts their normal growth process. This process begins with dysplasia, a change in cells that can develop into cancer if not detected in time.

Risk factors: Cervical cancer is caused by a number of risk factors than HPV infection.

are more susceptible to infection.

Multiple sexual partners: Having more than one partner raises your risk of contracting HPV.

An HPV infection can spread swiftly if you have HIV or other illnesses that compromise your immune system.

Smoking: Tobacco products include chemicals that damage cervical cells.

Inadequate personal hygiene practices and disregard for infections raise the risk.

Genetic predisposition: the risk may be increased if cervical cancer runs in the family.

Multiple births: Women with a high number of pregnancies are more likely to have changing cervical cells.

Long-term usage of contraceptives: Research indicates that using hormonal contraceptives for an extended period of time raises the risk of cervical cancer.

Hormonal contraceptive use for an extended period of time (greater than five years).

When taken for more than five years, long-term hormonal contraceptives (oral pills, injections, or implants) may raise the risk of cervical cancer.

How does this occur?

The chemicals progesterone and estrogen, which are found in hormonal contraceptives, can influence the development and alterations of cervical cells. The consequences of these hormones throughout time may include:

By weakening the body's defenses against the virus, HPV infection might hasten the course of the illness. The cervical epithelium, which makes these cells more prone to mutation.

Effect on the immune system: prolonged exposure to hormones may result in a compromised immunological response.

What is the conclusion of the research?

According to research, the risk of cervical cancer can increase by 1.5–2 times if hormonal contraceptives are used for more than five years.

However, within ten years of quitting the medicine, the risk becomes normal.

What actions ought to be performed?

Screening and prevention

Cervical cancer can be avoided by getting the HPV vaccine and getting frequent Pap or HPV tests. Early detection of cancer or dysplasia allows for treatment.

Consultation with a gynecologist: Before using long-term contraceptives, it's crucial to have regular checkups.

Cervical cancer prevention requires routine PAP and HPV testing.

Changing to a different method of birth control: Depending on your individual health situation, you may want to look into other options.

Avoidance

Measures to prevent cervical cancer and identify it early are included in prevention. Primary prevention and secondary prevention are the two phases of prevention.

The major objective of primary prevention is to lower risk factors and defend against HPV infection in order to stop the disease from developing. The actions listed below are crucial elements of primary prevention:

There are HPV vaccines, such as Cervarix and Gardasil, to prevent HPV infection, which is the main cause of cervical cancer. Girls between the ages of 9 and 14 are advised to get these vaccinations (or women up to age 26 if necessary). By protecting against HPV strains 16 and 18, the vaccination dramatically lowers the risk of developing cancer.

is a sexually transmitted infection, hence maintaining good sexual hygiene is crucial:

Using a condom during sexual activity lowers the risk of contracting HPV.

A higher risk of HPV infection is associated with having several sexual partners.

Boosting immunity: The body can more successfully combat an HPV infection when its immune system is robust. The following suggestions are crucial for boosting immunity:

Eat foods high in vitamins C, E, and A, such as nuts, fruits, and vegetables.

Consuming antioxidant-rich foods (carrots, berries, and green tea).

Sports and physical activities increase immunity.

Give up smoking: Research indicates that tobacco's toxins harm cervical cells. The risk of cancer linked to HPV infection is increased by smoking.

Secondary defense

Measures for early cancer identification and treatment are included in secondary prevention. These techniques help women with HPV infection or dysplasia (cell alterations) avoid developing cancer.

The Pap smear test, or PAP test, is used to identify early alterations in women's cervix cells. Beginning at age 21, it is advised that women undergo a PAP test every three years. Additional testing can be conducted every five years if the test results are normal.

HPV test: This test is done to find out whether cervical cells are infected with HPV. It is advised that women over 30 get tested for HPV every five years. If HPV is found, more testing and expert monitoring are necessary.

Colposcopy: A technique known as a colposcopy is advised to look at the cervix's cells under a microscope if the results of an HPV or Pap test are unclear. This process can take a biopsy and find unhealthy cells.

Dysplasia treatment: Cryotherapy, laser therapy, or surgery are used to eradicate precancerous lesions or dysplasia if they are found. Cervical cancer can be avoided in this way.

Conclusion

Cervical cancer are to adopt a healthy lifestyle, receive routine checkups, and receive the HPV vaccine. Regular HPV and Pap testing, in particular, can aid in the early detection and treatment of the illness.

Third-level prevention

Measures to improve the quality of life for people with cervical cancer and stop the illness from recurring are included in tertiary prevention. At this point, stress management, a healthy lifestyle, and routine medical monitoring are the major priorities.

1. Regular follow-up with a gynecologist and oncologist is necessary for cervical cancer monitoring and rehabilitation.

Every three to six months, examinations (HPV, PAP, and ultrasonography diagnostics) are advised.

Based on a personalized treatment plan, patients may receive specialist physiotherapy treatments during the recovery phase.

It's critical to balance hormones and concentrate on general health if surgery or radiation therapy has been done.

2. A nutritious diet and a healthy lifestyle

Consuming meals high in proteins (fish, nuts, chicken, legumes), omega-3 fatty acids, and antioxidants (carrots, tomatoes, berries, and green tea)

Juices and natural herbal teas are good for boosting immunity.

It is advised to stay away from fast food, carbonated drinks, and too much sugar.

3. Reduce stress and get more exercise.

Meditation, yoga, and breathing techniques are thought to be beneficial for lowering stress.

It is advised to engage in physical activity for at least half an hour each day, such as swimming, walking, or light gymnastics.

Maintaining a regular sleep schedule—at least 7-8 hours—allows your body to recuperate.

4. Diagnostic techniques

To find cancer early and increase the efficacy of treatment, a variety of diagnostic techniques are employed.

4.1. Although cervical cancer may not have any clinical symptoms, you should consult a physician if you encounter any of the following symptoms:

Inconsistencies in the menstrual cycle: periods that are longer or shorter than normal.

After sexual activity, bleeding could be a sign of cervical mucous injury.

Lower abdominal pain and discomfort, particularly persistent pain that does not go away, can be concerning.

In the later stages of the illness, nausea and weight loss may develop.

4.2. Instrumental and laboratory tests

The best screening technique is the PAP test, which enables early detection of cervical cell alterations.

To identify carcinogenic HPV strains, an HPV test is conducted.

Colposcopy: Using a microscope to examine the cervix in order to find suspicious regions and do a biopsy.

A biopsy involves taking questionable tissue from the cervix and analyzing it in a lab.

MRI and ultrasound (USG) are used to evaluate overall health and track the spread of malignancy.

5. Surgery, radiation, chemotherapy, immunotherapy, and targeted therapy are all current treatments for cervical cancer. The patient's overall health and the disease's stage are taken into consideration while choosing the course of treatment.

5.1. Techniques for surgery

Conization: A portion of the cervical cells that are damaged is eliminated in the early stages. Women of reproductive age can use this technique.

is progressed, the lymph nodes, ovaries, and uterus are also removed.

5.2. Chemotherapy and radiation

High-energy rays are employed in radiotherapy, also known as radiation therapy, to destroy cancer cells.

Chemotherapy: Cytotoxic medications are used to prevent cancer cells from growing. This technique is frequently applied in the latter phases or before to or following surgery.

5.3. Targeted treatment and immunotherapy

Pembrolizumab: This drug stimulates the immune system to combat cancerous cells. In the latter phases of cancer progression, this technique is employed.

Targeted therapy: Using medications that specifically target the tumor to slow cell proliferation. Cancers with certain molecular alterations may respond well to this treatment.

CONCLUSION

In conclusion, patients should have routine medical follow-up in order to prevent cancer from returning.

Early disease detection is aided by diagnostic techniques.

Modern techniques like surgery, radiotherapy, chemotherapy, and immunotherapy are employed, and the choice of treatment is based on the disease's stage.

Patients' quality of life can be enhanced and the chance of disease recurrence decreased by leading a healthy lifestyle, avoiding stress, and eating well.

Overall findings and recommendations

One of the most prevalent and fatal malignancies in women worldwide is cervical cancer. High-risk human papillomavirus (HPV) infection is its primary cause, and preventing the illness is crucial. The best strategies to stop the disease from developing are HPV vaccination, routine screening, and leading a healthy lifestyle.

Women should have routine Pap and HPV tests because the disease may not show any symptoms in its early stages. Cancer risk can also be decreased by maintaining a good diet, boosting immunity, and abstaining from bad behaviors.

Modern techniques like surgery, radiation, chemotherapy, immunotherapy, and targeted therapy are among the treatment choices available, which are chosen according to the disease's stage. Tertiary prophylaxis is advised for cancer patients in order to enhance their quality of life and avoid recurrence of the disease.

Offers

Enhancing preventative actions:

Increase the number of HPV vaccine recipients, particularly among 9–14-year-old girls.

Increasing medical knowledge in schools and universities regarding HPV and cancer.

Encouraging routine diagnostics: women should get Pap and HPV screenings every year.

Encourage the expansion and affordability of screening programs.

promoting a healthy lifestyle by educating women about alcohol consumption, smoking cessation, and proper nutrition.

effects of stress reduction and physical exercise on women's health.

Creation of contemporary therapeutic approaches:

To increase access to early cancer detection and treatment, the health system should receive more funding.

Novel medications and treatments.

Support groups for women with cancer, as well as patient rehabilitation and psychological assistance.

Extend rehabilitation initiatives to enhance post-treatment quality of life.

We can lower the incidence of cervical cancer, safeguard the health of women, and extend life expectancy by putting these suggestions into practice. This disease will be prevented and properly treated by the growth of the health system and the population's increased medical literacy.

REFERENCES:

1. Printed literature

2. Kumar, V., Abbas, AK, Aster, JC Robbins and Cotran Pathologic Basis of Disease. 9th ed. Philadelphia: Elsevier, 2015. – P. 1021–1025.

3. Schiffman, M., Castle, PE, Jeronimo, J., Rodriguez, AC, Wacholder, S. "Human papillomavirus and cervical cancer." The Lancet. 2007 ; 370(9590): 890–907.

4. Bosch, FX, de Sanjosé, S. "Human papillomavirus and cervical cancer—burden and assessment of causality." Journal of the National Cancer Institute Monographs. 2003; 31: 3–13.

5. zur Hausen, H. Papillomaviruses and Cancer: From Basic Studies to Clinical Application. Cambridge: Cambridge University Press, 2008. – P. 78–85.

6. Munoz, N., Castellsagué, X., de González, AB, Gissmann, L. "HPV in the etiology of human cancer." Vaccine. 2006; 24(Suppl 3): S1–S10.

7. Berek, JS Berek & Novak's Gynecology. 15th ed. Philadelphia: Wolters Kluwer Health, 2012. – P. 569–589.

8. World Health Organization (WHO). Comprehensive Cervical Cancer Control: A Guide to Essential Practice. 2nd ed. Geneva: WHO Press, 2014. – P. 46–55.

Electronic resources

9. World Health Organization (WHO). "Cervical cancer." Retrieved from: https://www.who.int/health-topics/cervical-cancer

10. Centers for Disease Control and Prevention (CDC). "HPV and Cancer." Last reviewed: 2023. Available at: https://www.cdc.gov/cancer/hpv

11. National Cancer Institute (NCI). "Cervical Cancer—Patient Version." Accessed on 2024. Retrieved from: https://www.cancer.gov/types/cervical

12. American Cancer Society (ACS). "What Causes Cervical Cancer?" Last updated: 2024. Available at: https://www.cancer.org/cancer/cervical-cancer

13. International Agency for Research on Cancer (IARC). "HPV and Cervical Cancer: The Global Burden." Accessed on 2024. Retrieved from: https://www.iarc.fr/