

Preventing Degeneration of the Cervical Canal and its Consequences

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Abstract:

Among women aged over 45, dangerous degeneration frequency occurs in the cervical canal. Initially, it manifests as cystic glandular hyperplasia. Certainly, serious reproductive system diseases, especially the possibility of preventing them, concern modern women and even the parents of school-age girls. In this article, you can familiarize yourself with factors that exacerbate this alarming risk, methods of prevention, and strategies against degeneration in the cervical canal, along with explanations and opinions on the matter. In cervical canal diseases, the incidence of cervical cancer deaths among women, as a cause of cervical canal disease, is about 7-8 per thousand among women. If epithelial cancer occurs mostly in women aged 30, invasive cancer occurs in women aged 40 and older. Understanding the histological structure of this disease can identify at which stage the cancer is. Detecting the process at an early stage is considered a factor in reducing the mortality risk among women and applying appropriate treatments.

Keywords: HPV, vaccine, Gardasil, cervical cancer risk factors and causes, adenocarcinoma, squamous cell carcinoma, hyperchromasia, polymorph.

Research indicates that one of the most common causes of cervical canal degeneration in women is the human papillomavirus (HPV), mainly transmitted through sexual contact. The use of protective measures during sexual intercourse does not completely prevent infection, as the virus can pass through latex condoms. Transmission can also occur through skin-to-skin contact and oral-genital contact. The virus may remain asymptomatic and await favorable conditions, such as weakened immune systems. It can manifest itself even after decades. Various pathological processes can occur in the cervical canal, including congenital anomalies, inflammation processes, and growths. Cervical polyps occur in 2-5% of cases, usually emerging within the endocervical canal. They tend to be pedunculated, spherical, or hemispherical with a diameter of up to 3 cm. Sometimes, they may protrude into the cervical canal, leading to obstruction or protrusion externally. Polyps can also

become atrophic. Microscopic examination reveals a fibromyxomatous stroma with enlarged endocervical glands.

Polyps consist of cylindrical epithelium and produce mucus. At the onset of hypertrophy, the cylindrical epithelium can transition to a stratified squamous epithelium, which may become ulcerated, increasing the risk of malignancy. Cervical cancer incidence among women is about 7-8 per thousand cases. While epithelial cancer mostly affects women around 30 years old, invasive cancer occurs in women aged 40 and older. It is noteworthy that in 83.3% of cases, squamous cell carcinoma is detected. This type of cancer in older women tends to be endophytic, leading to infiltration and a poor prognosis. Successful treatment is more likely in the early stages, emphasizing the importance of early and accurate diagnosis.

Risk factors for the development of cervical polyps (excluding HPV, which can lead to cellular mutations after its introduction):

- ✓ Early onset of sexual activity
- ✓ Early pregnancy (due to thinning of the cervical walls)
- ✓ Frequent changes in sexual partners
- ✓ Smoking (due to carcinogens in tobacco smoke)
- ✓ Infections and sexually transmitted diseases
- ✓ Improperly selected hormonal contraceptives
- ✓ Long-term diets lacking vitamins

Each year, the World Health Organization reports nearly 500,000 cases of this disease and nearly 7 million people infected with the papillomavirus virus. In Russia alone, approximately 8,199 cases of the disease result in the death of women each year. Therefore, scientists and physicians actively seek ways to combat this widespread and dangerous disease, developing and implementing preventive measures. One such measure is vaccination against cervical cancer.

How does vaccination against cervical cancer work?

Vaccination is a preventive measure and does not treat existing infections. Given that cervical cancer is associated with the human papillomavirus in infected women, vaccination aims to prevent its transmission. According to statistics, vaccination reduces the risk of developing the virus in 80% of cases.

Vaccination against cervical cancer is currently being implemented and actively utilized in more than eighty countries worldwide. Some countries have included it in their national immunization schedules. There is already substantial evidence of successful vaccination campaigns against cervical cancer. For example, Australia actively promotes vaccination against cervical cancer. The country has a wide-ranging mandatory vaccination registry for its population. Australia utilizes public information channels to disseminate information, and there are mechanisms in place for financial assistance in case of vaccination-related complications. Since 2007, vaccination has been available for 12-year-old schoolchildren in Australia. Girls up to the age of 26 could benefit from vaccination against cervical cancer for free. Four years after the program's initiation, the results showed a decrease in cervical canal abnormalities in young women and a reduction in cases of genital warts. Following this success, after five years, physicians decided to extend vaccination to boys up to the age of 14 to further reduce the spread of genital warts among the population.

How should vaccination against cervical cancer be approached?

In some regions of Russia, preventive programs have been in place since 2008. The Joint Committee for Vaccination and Immunization recommended vaccination for girls in schools. However, vaccination is carried out in polyclinics for children and is only provided free of charge in some regions. Payment for vaccination is possible in medical clinics and vaccination centers. Therefore, it seems that the implementation of vaccination among our population has been quite successful.

Two vaccines are commonly used worldwide: the bivalent vaccine, "Cervarix," and the quadrivalent vaccine, "Gardasil." The recommended age for vaccination against cervical cancer is usually between 12 and 14 years old, according to information from the Joint Committee for Vaccination and Immunization. However, currently, more individuals are being recommended for vaccination between the ages of 10 and 13. Due to its transmission through sexual contact, vaccination before sexual activity is considered the most effective. In addition, it is recommended for girls aged 16-25, followed by vaccination based on doctor's recommendation. Research is still ongoing, but initial evidence suggests that vaccination at a younger age may be beneficial. Vaccination against papillomavirus protects against other oncogenic viruses, prevents cervical dysplasia, and helps in easier and more effective treatment of cervical diseases. Both Gardasil and Cervarix vaccines are approved for use in Russia, aiming to preemptively protect against various HPV strains. Gardasil suspension, produced by a well-known pharmaceutical company using the latest genetic engineering technologies, is tetravalent, meaning it protects against four types of the virus. At the same time, a nine-valent injection of Gardasil is available. This broad-spectrum vaccine can be used not only to prevent genital warts but also to prevent other genital infections in both men and women. "Cervarix," on the other hand, is a two-component vaccine developed by a British pharmaceutical company targeting the two main oncogenic strains of HPV. The effect of the main components in this suspension is enhanced by the AS04 adjuvant system, which induces long-term immunity against infection. Like Gardasil, it is only administered intramuscularly. These vaccines contain no live or dead microorganisms but only the essential parts of the virus membrane necessary to induce immunity against human papillomavirus. Therefore, they are safe, and vaccination against cervical cancer does not cause adverse effects such as HPV infection and infertility. Vaccination Schemes for Accepting Drugs Both drugs can only be administered intramuscularly. The site of injection is the deltoid or external side. Both vaccinations are given three times. • "Gardasil" is given in a volume of 0.5 ml on the first day and then twice more 2 and 6 months after the first vaccination. An accelerated administration course is available - after the first injection, one month later, then after the second injection, 3 months later. • "Cervarix" is also given three times, each 0.5 ml, without the need for re-vaccination through the help of an adjuvant substance. After the initial dosage, the second dose is given 1 month later, followed by the third dose 6 months after the first injection. Vaccines are available in vials or sterile syringes, in the form of suspensions, so when packaging, there are 2 reinforcement units (syringes and needles) in a vial, which are thoroughly shaken before use. There should be no foreign particles in the vial, and the preparation should be checked for correct storage and expiration date. Characteristics of vaccination reactions The side effects of these vaccines are almost similar to most vaccines. They occur in local and general reactions: • Redness or slight swelling at the injection site may occur; • Allergic reaction in the form of itching and rash; • Body temperature may rise, weakness, dizziness, and headache may occur; • Possible gastrointestinal reactions such as nausea, vomiting, and epigastric pain. Initially, it is advisable to consult a gynecologist and discuss whether this vaccination is suitable for your child. After the procedure, it is better to be under the supervision of a doctor for 30 minutes and report any adverse reactions. Symptomatic treatment is used to treat uncomfortable reactions: antipyretic and antiallergic drugs. Usually, they disappear within a few days. Situations where drugs cannot be used Like any other drug, vaccines also have contraindications for use: • Individual intolerance to components or strong allergic reactions to the first injection; • Exacerbation of chronic diseases; • Increase in body temperature, exacerbation; • Relative contraindication - poor blood clotting.

Pregnant women and children under 9 years of age should not use the drug, as its effect on this group of patients has not been well studied. Opinions on vaccination: positive and negative aspects. Of course, vaccination against cervical cancer, which has recently emerged, and its associated risks are still ongoing. After all, it is possible that after 15-20 years of vaccinating against papillomas, they may progress to cancer, so it is not too early to speak with confidence about positive outcomes from its introduction. Vaccination does not guarantee 100% protection against HPV infection, as, firstly, it may occur for other reasons, and secondly, drugs provide protection against only the main HPV strains. But, as you know, not all. Based on the comments of specialists in vaccination against cervical cancer, it is undoubtedly a positive point that this vaccination is introduced to protect against human papillomavirus infection. The number of women affected by cervical cancer is increasing year by year, and vaccination is the only means of preventing the disease today. Recommendations for vaccination against cervical cancer. According to the opinions expressed on the Internet, it is possible to conclude that the awareness of our country's population about this vaccination is very low. Mostly, these are people who are strongly opposed to

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