

PRECANCEROUS DISEASES OF THE CERVIX

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The article is devoted to the modern understanding of the etiopathogenesis of background and precancerous diseases of the cervix. The most important role in the occurrence of background and precancerous diseases of the cervix is played by environmental factors, i.e. exogenous and modifying factors, which may include trauma, inflammation, viral infection.

Key words: cervix, congenital erosion, ecto and endocervix, underlying disease.

Статья посвящена к современному представлению об этиопатогенезе фоновых и предраковых заболеваний шейки матки. Наиболее важная роль в возникновении фоновых и предраковых заболеваний шейки матки играют средовые, т.е. экзогенные и модифицирующие факторы, к которым могут быть отнесены травма, воспаление, вирусная инфекция.

Ключевые слова: шейки матки, врожденная эрозия, экто и эндоцервикс, фоновые заболевание.

The term "background processes" combines diseases that differ in etiology and morphological picture, against which precancerous and cervical cancer can develop. The emergence and development of pathological conditions of the vaginal part of the cervix is a complex and lengthy process, many aspects of which have not yet been sufficiently studied. Numerous studies by morphologists, oncologists, gynecologists, virologists indicate the polyetiology of background and precancerous diseases of the cervix - [1, 2, 4, 8, 10, 11]. The formation of pathological conditions of the cervix with the participation of two factors - environmental and genetic. The most important role in the occurrence of background and precancerous diseases of the cervix is played by environmental, i.e. exogenous and modifying factors, which can include trauma, inflammation, viral infection. Genetically determined

(endogenous) factors include hormonal shifts associated with the implementation of specific functions of the female body, as well as the state of immunity. A lot of research has been devoted to the etiopathogenesis of background and precancerous diseases of the cervix and various theories have been developed: traumatic, inflammatory genesis, immunological, dishormonal. A certain importance in the occurrence of ectopia is assigned to the violation of the processes of intrauterine development of the fetus. It is known that "congenital erosions" are the result of hormonal changes in the mother's body. The border of the ecto- and endocervix in ontogenesis is unstable and, starting from 30-31 weeks of development, is located on the vaginal part of the cervix, forming "congenital erosion of the cervix". In the occurrence of background and precancerous diseases of the cervix, many

researchers attach great importance to cervical trauma that occurs during childbirth, during curettage of the cervical canal, electro- and surgical interventions on the cervix, which are accompanied by a violation of trophic and metabolic processes in the tissues of the cervix. Particular importance in the occurrence of cervical pathology is attached to the first abortion. According to V.O. Vekhnovsky (2014), during the examination of 160 women who underwent the first abortion, pathological changes of the cervix were detected in 145 - [4].

A significant place in the occurrence of background and precancerous diseases is given to inflammatory processes in the cervix. Recently, the role of viral infection in the occurrence of precancerous diseases and cervical cancer has been proven. A number of researchers attach great importance to herpes virus (serotype II) and human papilloma viruses in the development of precancerous and cervical cancer, especially types with high oncogenic risk (types 16 and 18) - [2, 4, 11]. By DNA hybridization, papillomavirus infection and genital herpes virus were detected in 90% of women operated on for preinvasive and invasive cervical carcinoma, and only 11 - 29% in unchanged multilayer squamous epithelium.

Explaining the mechanism of malignancy in papillomavirus infection of C. Hausen (2011) proposed the concept of the initiating factor, according to which the human

papillomavirus itself does not cause malignant transformation, but contributes to the development of a precancerous condition, while the action of initiating factors leads to malignant degeneration. According to the author, such initiating factors may be chemical and biological carcinogens, herpes simplex virus type 2 - [2, 4]. Hormonal drugs, sexually transmitted diseases, chemical contraceptives, smoking were attributed to possible factors accelerating the occurrence of the malignancy process.

According to a number of authors, a certain role in the development of cervical dysplasia belongs to chlamydia infection - [1, 2, 4, 6, 8, 12]. According to I.B. Manukhin et al. (2016) patients with background and precancerous diseases of the cervix had a high incidence of chlamydia infection (48.98%), the presence of which is most characteristic of patients with ectopia. Krasnopolsky et al. (2016) revealed a high content of chlamydia in the vaginal contents in the isolated form of cervical condylomatosis (in 47.8% of cases). It should be noted that chlamydia was more often detected when cervical warts were combined with ectopia. This is probably due to favorable conditions for the introduction and colonization of microorganisms into the cylindrical epithelium.

The research data of foreign authors confirm the role of infection in the failure of regeneration up to the development of cervical cancer in the ectopic zone, where the cylindrical and metaplastic epithelium are most sensitive to infectious agents - [2, 8]. But, according to studies, the infection shows its oncogenic potential against the background of increased mitotic cell division with the most pronounced metabolic activity due to the constant influence of estrogens in patients with an altered immune system, especially when combined with HIV infection - [2, 10].

The cervix has an autonomous immune system, represented by local and humoral immunity - [10, 11]. Local immunity is formed by lymphoid structures and macrophages of the cervical stroma, immunoglobulins of classes A, M, G and locally secreted sIgA - [2, 4]. The first line of defense is IgA and IgM: IdM has hemolytic properties and neutralizing activity against bacteria and large viruses, and IgA is a typical immunoglobulin of the mucous membranes, whose main function is to block

the adhesion of microorganisms to the epithelial cells of the mucous membrane - [7, 8]. IgG provides secondary immunity by blocking macrophages and stimulating suppressor T lymphocytes - [2]. A significant role in protecting the genital tract is played by the complement system produced by the mucous membrane of the cervix and vagina. The complement attaches to IgA, which leads to the opsonization of microorganisms and subsequent phagocytosis by neutrophils. The state of local immunity is a decisive factor in determining the severity, duration and recurrence of inflammatory diseases of the cervix, papillomavirus lesions and CIN - [1, 4, 6, 10]. However, the immune system of pregnant women targets external stimuli even more aggressively, while forming immunoresistance to the fetus - [3, 5, 11]. Steroid hormones have a modulating effect on the function of local immunity of the cervix. Thus, estrogens contribute to an increase in the thickness of the vaginal epithelium, the secretion of mucins of the complement system. It was found that vaginal dysbiosis develops against the background of estrogen deficiency: the concentration of lactobacilli decreases and the number of fecal group bacteria increases - [8].

There is no consensus on the effect of progesterone on local immunity. Thus, a number of authors believe that progesterone weakens the immune system; others, on the contrary, believe that when progesterone is administered, the number of Langerhans cells increases - [2, 7, 9]. Given the dependence of the immune status on the level of estrogens, it can be assumed that against the background of estrogen deficiency, progesterone increases the risk of developing inflammatory diseases of the cervix and weakens local immunity, and against the background of normal or slightly elevated estrogen levels during pregnancy, this effect is absent - [1, 12].

Thus, the presented literature data allow us to conclude that the search for rational methods of treating cervical diseases is a promising task, not only in terms of preventing cervical cancer, but also preserving the structural and functional characteristics of the cervix as the most important factor in the reproductive health of the female body. Photodynamic therapy presents great opportunities in this regard.

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