

## THE EFFECT OF CHEMOTHERAPY ON THE SQUAMOUS EPITHELIUM OF THE CERVIX

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**Abstract.** The squamous epithelium of the cervix (cervix) is one of the most common tumor localizations in women. The development of these tumor processes is often associated with the Human Papillomavirus (HPV), which is one of the main causes of cervical cancer and its primary lesions. In modern medicine, surgery, radiotherapy and chemotherapy are used to treat this disease. This article analyzes the effect of chemotherapy on the squamous epithelium of the cervix and its clinical effectiveness. Cervical cancer is the second or third most common type of cancer among women worldwide, with approximately 0.5 million cases recorded annually. In 1980, the number of cervical cancer cases was estimated at 378 thousand, but in recent years this figure has reached 500 thousand per year.

**Keywords:** Cervix, human papillomavirus, cervical cancer, radiation therapy, chemotherapy, squamous epithelium, clinical efficacy, tumor, surgery, radiotherapy.

### Materials and Methods

This study included 50 patients with squamous cell carcinoma of the cervix. Their ages ranged from 30 to 60 years, and all had stage II or III disease. Patients were treated with neoadjuvant chemotherapy (NC) based on cisplatin and paclitaxel. The following parameters were studied during the study:

- The effect of chemotherapy on cellular structures (by histological examination).
- Clinical efficacy indicators (indicators of remission or progression).
- Frequency and severity of side effects.

### Results

#### Histological effect of chemotherapy

After chemotherapy, significant apoptotic changes in tumor cells were noted in 65% of patients. This indicates the effectiveness of the treatment in inhibiting the proliferation of tumor tissue. In 20% of patients, a decrease in tumor size of up to 50% was observed. Located in the lower part of the cervix, we studied it by dividing it into two parts: the ectocervix and the endocervix. In the ectocervix, the submucosal glands were normally visible. Stratified non-keratinizing squamous epithelium with basal cells in it: the deepest layer; dense nuclear chromatin, uniform oval nuclei oriented perpendicular to the basement membrane, and scant cytoplasm. Parabasal cells: located above the basal cell layer; slightly more cytoplasm than basal cells; several cell layers thick, intermediate cells: pink or transparent due to glycogen accumulation, and cells containing a lot of cytoplasm were identified in such cells. Surface cells: small, round nuclei; abundant pink or transparent cytoplasm; The cells were flattened and oriented parallel to the basement membrane. In response to hormones, the superficial cells predominated in the early cycle due to estrogen, and the intermediate cells predominated in the late cycle due to progestins. Loss (atrophy) of the intermediate and superficial cells occurred in the postmenopausal period, during which rare melanocytes, Langerhans cells, and endocrine cells were identified.

#### 1. Clinical efficacy

According to the results of the study, clinical improvement was observed in 80% of patients, of which 30% achieved complete remission. However, disease progression continued in 10% of patients. This is mainly explained by resistance to chemotherapy.

## 2. Side effects

The following side effects were observed in 70% of patients against the background of chemotherapy:

- o Changes in the hematopoietic system (leukopenia, thrombocytopenia).
- o Digestive system disorders (nausea, vomiting).
- o Decreased immune system (moderate infections).

## Discussion

Chemotherapy, especially cisplatin and paclitaxel-based treatments, have shown high efficacy in patients with squamous cell carcinoma of the cervix. However, an individualized approach is required, as chemotherapy negatively affects not only tumor cells, but also healthy tissues.

Future prospects: Identification of chemotherapy-sensitive patients through genetic analysis and molecular marker studies may improve treatment outcomes.

## Conclusion

Detection and early diagnosis of pathological changes in the squamous epithelium of the cervix. Early detection of morphological and functional changes in the squamous epithelium of the cervix after chemotherapy and radiation therapy will help to improve diagnostic methods. This, in turn, will allow to prevent dangerous conditions that may develop during or after therapy.

The results of the study, when applied in the practice of doctors, will serve to increase the effectiveness of treatment and improve the quality of life of patients. Also, these scientifically based approaches create broad opportunities for the development of the healthcare system and the introduction of innovations.

Although chemotherapy is an effective treatment for squamous cell carcinoma of the cervix, further research is needed to minimize its side effects and optimize treatment strategies. An individualized and integrated approach, as well as the introduction of new drugs, will allow for more effective treatment of this disease.

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