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Effect of Non-Adjuvant Chemotherapy for Malignant Breast Tumors

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Abstract: The importance of using non-adjuvant chemotherapy for malignant breast tumors in women is described. Detailed information is provided on how this technique creates a number of possibilities, such as reducing tumor growth.

Key words: Malignant breast tumors, non-adjuvant chemotherapy.

Introduction

Relevance. Breast cancer is the most common malignant tumor in women, characterized by the presence of a variety of clinical forms. Breast cancer currently ranks first among all oncological diseases in Uzbekistan. 2 million women worldwide are diagnosed with breast cancer annually. In the Samarkand region alone, 300 women are newly registered with breast cancer annually. The disease is most common among women aged 40-60. Female gender is the strongest breast cancer risk factor. Approximately 99% of breast cancers occur in women and 0.5–1% of breast cancers occur in men. The treatment of breast cancer in men follows the same principles of management as for women.

Certain factors increase the risk of breast cancer including increasing age, obesity, harmful use of alcohol, family history of breast cancer, history of radiation exposure, reproductive history (such as age that menstrual periods began and age at first pregnancy), tobacco use and postmenopausal hormone therapy. Approximately half of breast cancers develop in women who have no identifiable breast cancer risk factor other than gender (female) and age (over 40 years).

Family history of breast cancer increases the risk of breast cancer, but most women diagnosed with breast cancer do not have a known family history of the disease. Lack of a known family history does not necessarily mean that a woman is at reduced risk.

Certain inherited high penetrance gene mutations greatly increase breast cancer risk, the most dominant being mutations in the genes BRCA1, BRCA2 and PALB-2. Women found to have mutations in these major genes may consider risk reduction strategies such as surgical removal of both breasts or chemoprevention strategies.

The incidence rate is increasing year by year in all economically developed countries. Several risk factors play a role in the development of the disease. The increased risk of developing breast cancer is associated with impaired functioning of hormone-producing organs. Of particular importance are dysfunction of the pituitary gland, hypothalamus, thyroid gland, and ovaries. The risk of developing breast cancer has been found to be increased in women with early onset of menstruation and late cessation of menstruation - decreased in women who gave birth before the age of 18, and in women who have given birth many times.

The pathological and anatomical characteristics of breast cancer reflect the histological nature of the tumor. They include the size of the tumor, the location of the primary focus in the mammary gland, the type of growth, the morphological structure, the degree of differentiation and malignancy, the presence of regional metastases.

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The size of the primary tumor is an indicator of the biological activity of tumors and the main prognostic factor in breast cancer. With an increase in tumor size, its aggressiveness, the intensity of lymphogenous and hematogenous metastases increase. The location of the tumor in the mammary gland has great prognostic significance, which is explained by the paths of lymph flow in different quadrants of the mammary gland.

Other risk factors. In recent years, genetic abnormalities have been given great importance in the development of breast cancer. The literature describes two types of molecular abnormalities in the development of cancer: gene mutations and the occurrence of cell proliferation. Mutations occur in key genes that control cell growth, differentiation, and cell proliferation. As a result, they either become active or, conversely, lose their activity. With the help of proliferation, a "tumor-forming" effect occurs.

Chemotherapy is often used alongside surgery to treat cancer. If your cancer treatment plan includes adjuvant chemotherapy or neoadjuvant chemotherapy, that means you will be receiving both chemotherapy and surgery to treat your cancer.

Objective

Chemotherapy is the use of powerful drugs to kill or slow the growth of cancer cells. It is frequently administered before or after surgery to improve results. The different terms indicate the order in which you will get these treatments:

- Neoadjuvant chemotherapy is delivered before surgery with the goal of shrinking a tumor or stopping the spread of cancer to make surgery less invasive and more effective.
- Adjuvant chemotherapy is administered after surgery to kill any remaining cancer cells with the goal of reducing the chances of recurrence.

Materials and Methods

Whether or not doctor recommends chemotherapy before or after surgery, depends on several factors, including:

- Cancer type and stage
- Whether or not the cancer has spread to lymph nodes
- The goal of treatment, whether it is to rid your body of cancer, slow the cancer's growth and progression, or ease the symptoms of your cancer
- How well your body is likely to tolerate multiple treatments

Result. Adjuvant chemotherapy and neoadjuvant chemotherapy are frequently used in the treatment of breast, colon, lung, bladder, and prostate cancers. For example, a woman with invasive breast cancer or a very large tumor may undergo neoadjuvant chemotherapy to shrink a tumor before breast surgery so a lumpectomy (surgery to remove only the cancer and surrounding tissue) can be performed instead of a mastectomy (removal of the entire breast).

Conclusion. It may receive adjuvant chemotherapy after breast surgery to kill any cancer cells that may have been too small to detect during surgery to keep them from growing and spreading.

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