



IMPROVING THE DIAGNOSIS AND DRUG TREATMENT OF PATIENTS WITH METASTATIC BREAST CANCER, TAKING INTO ACCOUNT PROGNOSTIC FACTORS

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Abstract: Breast cancer is a malignant tumor characterized by rather aggressive growth and the ability to actively metastasize. This pathogenesis is caused by a complex interaction of genetic, hormonal, metabolic, exogenous and other factors [1] and is the most common malignant neoplasm among women in the world [2].

Keywords: breast cancer, prognosis, genetic, hormonal.

Introduction

Old age and being born a woman are the strongest risk factors for breast cancer. Potentially modifiable factors associated with increased risk in women include weight gain after age 18 and/or overweight or obesity (in the case of postmenopausal breast cancer); menopausal hormone therapy (a combination of estrogen and progestin), formerly called hormone replacement therapy; alcohol consumption; and physical inactivity. Breastfeeding for at least one year reduces the risk. Unchangeable risk factors include a personal or family history of breast cancer; some benign breast conditions such as atypical hyperplasia; a history of DCIS or lobular carcinoma in situ (LCIS); high breast tissue density (the amount of glandular and connective tissue relative to adipose tissue measured on a mammogram); high doses of chest radiation under the age of 30 (for example, for the treatment of lymphoma); and inherited genetic mutations in breast cancer predisposition genes (for example, BRCA1 or BRCA2). Reproductive and hormonal factors that increase the risk include a long menstrual history (menstrual periods that start early and/or end late in life); not having children or having children after the age of 30; high natural levels of estrogen or testosterone; and recent use of hormonal contraceptives. Early diagnosis reduces the risk of death from breast cancer and expands treatment options. Women are encouraged to develop an individual screening plan with their medical team based on personal preferences, family history and risk assessment. Women with an average risk of developing breast cancer are recommended by the American Cancer Society to undergo mammography annually at the age of 45 to 54 years; people aged 55 and older either switch to mammography every two years, or continue to undergo annual examinations; and at the age of 40 to 44, there is an opportunity to start an annual mammography. In general, mammographic screening should be continued as long as the general state of health is good, and life expectancy is 10 years or more. Some high-risk women are recommended to have annual magnetic resonance imaging (MRI) of the breast along with mammography, often starting at an earlier age than the general population. Breast cancer is characterized as a tumor that often metastasizes to the bones (from 13.5% to 85%) [3, 4], while the skeleton ranks third after the lungs and liver in terms of the frequency of localization of metastatic damage [4, 5, 6, 7]. Isolated bone metastasis occurs in 17-37% patients with enlarged

breast cancer [8]. Breast cancer is the most common malignant hormone-dependent tumor in women. The incidence rate is steadily increasing. The main carcinogenic factor is the effect of estrogens on the epithelium of the ducts of the gland [17]. In 2022, approximately 287,850 women and 2,710 men will be diagnosed with invasive breast cancer for the first time in the United States, while 51,400 more cases of ductal carcinoma in situ (DCIS) will be diagnosed in women. It is estimated that 43,780 deaths from breast cancer will occur in 2022 (43,250 in women, 530 in men). [18] Since the mid-2000s, the incidence of invasive breast cancer in women has increased by about 0.5% per year. The death rate from breast cancer among women peaked in 1989. and has since declined by 42% as of 2019, mainly due to earlier detection through screening, as well as increased breast cancer awareness and improved treatment. This decrease means approximately 431,800 fewer breast cancer deaths over this time period than would be expected in the absence of this progress. However, the mortality rate of black women remains 41% higher than that of white women, despite the lower incidence. [18]

Breast cancer occupies the leading place in morbidity among other malignant tumors in the world and the 5th place in the number of deaths. According to the Global Cancer Observatory, in 2020, more than 2.26 million cases of breast cancer were registered worldwide, which is 11.7% of all cases of malignant neoplasms in persons of both sexes. According to standardized and "rough" indicators of the incidence of breast cancer, as well as in absolute values, it is ahead of all malignant neoplasms. So, the standardized indicator in 2020 was 47.8 cases per 100 thousand. a person, and the "rough" indicator is 58.5 cases. The total number of deaths in 2020 reached 685.0 thousand people (6.9% of all cancer deaths). In terms of absolute mortality figures (of both sexes), breast cancer is inferior to lung, colon, rectum and anus, liver and stomach cancers and ranks 5th in the ranking, but according to standardized and "rough" values it is already in 2nd place (13.6 and 17.7 cases per 100 thousand people, respectively).[5] Gender is the most serious risk factor for the development of breast cancer: the majority of patients are women. Breast cancer accounts for about 21.7% of cancer cases in women in 2020. In terms of mortality, breast cancer ranks 1st in women (15.9% of all deaths from malignant neoplasms). In men, breast cancer is a rare pathology. The incidence is 1 case per 100 thousand people, i.e. in men breast cancer occurs approximately 100 times less often than in women, is 0.1–1.5% of all cases of malignant neoplasms and 0.5–2.0% of all breast tumors. But at the same time, breast cancer occurs more aggressively in men than in women. In the structure of the causes of cancer mortality in men, breast cancer accounts for 0.3%, which is quite a lot for such a rare disease. In the last decade, there has been an increase in the number of men suffering from this disease. Family history of breast cancer increases the risk of its development, however, most patients with diagnosed breast cancer have no family history of cases of this disease in close relatives. Certain inherited high-tolerance mutations in genes significantly increase the risk of developing breast cancer, with mutations in the BRCA1, BRCA2 and PALB-2 genes being dominant.[5]

- Clinical options
 - o Inflammatory (mastitis-like) cancer
 - o Bilateral breast cancer

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