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SCREENING, PREVENTION AND EARLY DIAGNOSIS OF BREAST CANCER (REVIEW)

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SUMMARY
Screening, prevention and early diagnosis of breast cancer. The article provides data designed to provide healthcare professionals with practical standards for screening, preventive examinations and evaluation of pathological breast tumors. The outlined methodology for the prevention and early diagnosis of breast cancer allows its application at all levels of practical healthcare, starting with examination rooms of the general hospital network.
KEYWORDS: *Screening, prevention, early diagnosis, breast cancer.*

Preserving the reproductive health of the nation is an integral part of the demographic policy of Uzbekistan, therefore the organization of events aimed at improving the prevention, diagnosis and treatment of women with cancer of the reproductive organs remains an urgent problem that needs to be solved at the state level. According to the World Health Organization (WHO), the emergence and development of malignant neoplasms of the female reproductive system is largely determined by environmental conditions, as evidenced by a wide range of fluctuations in incidence rates in different countries of the world, especially pronounced in breast cancer (BC), body and cervical cancer uterus

One of the most characteristic features of the increasing number of cases of malignant tumors in women in economically developed countries is a significant increase in the incidence of cancer, which occupies a leading place in the structure of cancer morbidity and mortality.

In the structure of cancer incidence among women in Uzbekistan, RGD ranks first [1]. At the beginning of 2011, more than 140 thousand people were registered in oncological institutions . n patients with RRD. More than 16.5 thousand cases are registered annually in Uzbekistan . New cases of RD, of which 25% are women of reproductive age. More than 7.8 thousand people die every year . n patients, more than 20% of them are of reproductive age. Over the past 20 years, the incidence of RRD has increased 2.5 times, and the annual increase is more than 2%. The peak incidence of RRD occurs between the ages of 50–75 years [1].

In connection with such statistics, the issues of screening, prevention, diagnosis and treatment of patients with RRD, the organization of which still has significant shortcomings, become particularly relevant. Despite the fact that malignant neoplasms of the mammary gland (GIT) belong to tumors of visual localization, advanced cases in 2012 amounted to 20.5%, and in some regions this figure reached more than 30%. In 2011, during preventive examinations, 47.6% of patients with RD were identified, but the value of this indicator in some regions does not exceed 25%. Special treatment covered 83.4% of patients with newly diagnosed tumors (in some regions from 70.6 to 97.4%) [1].

Deficiencies in the organization of the treatment and diagnostic process lead to death from this pathology during the first year in 10.8% of patients (for comparison, in the USA this figure does not exceed 2%). When treating patients with generalized forms of RDD, costs increase by 25-30 times compared to the treatment of patients with tumors identified at an early or preclinical stage. That is why early diagnosis is of great importance, as it improves the 5-year survival rate of patients with RCD and reduces the cost of antitumor treatment [2,4].

An effective way to improve the detection of malignant neoplasms of the gastrointestinal tract can be the introduction of effective screening, prevention and early diagnosis programs. It is known that due to the introduction of government screening programs in developed countries over the past 15 years, mortality rates from RDD have decreased by 25-30%.

The European Parliament Resolution defines the fight against CBG as a priority task that can be effectively solved in European countries [4].

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Early diagnosis of RRD is possible subject to the following programs : self-examination; medical and preventive examinations, observation and treatment of precancerous pathology; screening examinations and mammography studies (currently in Europe and the USA, the widespread use of screening mammography is recommended for women aged 50-69 years)[9,16] .

It is known that in 80–90% of cases the disease is detected by the patients themselves, in 15–18% by a doctor during a preventive examination, and during mammographic screening – in 4–6% of those examined [5,7]. When conducting screening, it is necessary to take into account the epidemiological, statistical, technical, personnel situation in the region where the screening is carried out, as well as the financial support of the planned study.

The stages of organizing mass screening of gastrointestinal tumors can be divided into :
collection of complete information about the presence of factors contributing to the occurrence of RRD;
examination and palpation of the gastrointestinal tract in women with the aim of preliminary dividing the subjects into risk groups for further in-depth examination ;

Mammography.
For proper planning of organizational measures for the purpose of actively identifying patients with RRD, it is necessary to clearly define the concepts of “screening”, “preventive examination”, “clinical examination”.

Screening is a system of organizational measures for mass periodic examination of a healthy population for the purpose of early (preclinical) detection of cancer diseases, such as breast cancer. Screening studies of the gastrointestinal tract are carried out in women without symptoms of RRD in order to detect the disease as early as possible. The main goal of all screening programs is to reduce mortality through early diagnosis of RRD.

A preventive examination is an active detection of HD disease with the mandatory participation of a medical professional. An individual preventive examination is carried out by a mid-level medical worker in a pre-medical office or a paramedic and obstetric station. The goal is to identify the visual form of cancer. If RRD is suspected, the patient is referred to an obstetrician-gynecologist, therapist, surgeon, or mammologist . A targeted preventive examination is carried out by a mammologist to identify gastrointestinal diseases. A comprehensive preventive examination is carried out by a group of doctors in order to identify various nosological forms of oncopathology , in particular RGD.

Clinical examination is a periodic examination of women registered with a mammologist due to a high risk of developing RZD, as well as those undergoing treatment for benign and malignant neoplasms of the gastrointestinal tract.

In some cases, screening, preventive examination and clinical examination may be combined or be stages of the patient’s diagnostic route. For example, screening → formation of a “risk group” → preventive examination in a risk group → clarification of the diagnosis of HD disease → treatment → medical examination[4,8].

Planning and conducting screening is not fixed and depends on the specific demographic, organizational and economic conditions of providing medical care in the state and even individual regions of one country (for example, the influence of population density, age, gender structure of the population in the screening region).

There is a direct economic relationship between costs and effective detection of preclinical cases of RRD. In some cases, the cost of diagnosing RMS is tens of times higher than the cost of treatment. Even economically prosperous countries experience problems with financial resources in healthcare when carrying out screening and preventive work. It should be remembered that when choosing between economic costs and the effectiveness of screening for a doctor, the interests of the patient must be a priority. It is worth emphasizing that proper planning for the implementation of screening programs can improve 5-year survival rate in RRD by more than 30% [4]. No known treatment method provides such effectiveness.

Based on the results of randomized trials of breast cancer screening, the International Agency for Research on Cancer (IARC), Lyon, France, and the WHO Cancer Division recommend screening all women in the “target” cohort aged 50–69 years using a single test, mammography. , which is repeated every 2 years.

The program for the prevention and early diagnosis of cancer has two main directions: primary (etiopathogenetic) and secondary prevention, which consists of the diagnosis and treatment of precancerous diseases. Since the etiopathogenesis of RZP is not fully understood , the possibilities for primary prevention of RZP are limited [2, 3]. The main efforts of researchers are currently aimed at improving the system of secondary prevention of RRD.

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Preventive examination of the patient should begin with an assessment of the degree of risk. At the same time, it should be remembered that approximately 75% of women newly diagnosed with RRD do not have risk factors.

After collecting anamnestic data on risk factors, groups of patients are formed who are subject to mandatory referral for mammography.

The most obvious risk factor is age—the incidence of RDD increases with age. The family history should contain information about immediate relatives (mother, sister, daughter) who had RRD, and the age at which they became ill. A patient diagnosed with perimenopausal breast cancer has a significantly higher risk (4-5 times) of developing the disease than others. If a subject's immediate family has cancer of both gastrointestinal tracts or RGC, the risk for that woman may be 8 to 10 times higher than the risk in the general population. It is very important that the doctor learns about the results of all previous diagnostic biopsies and previously diagnosed HD diseases. For a woman who has had RGC, the risk of developing a new primary cancer of the second gland is approximately 0.5–1% for each remaining year of life[6].

During the examination, the doctor must obtain detailed information about the course of pregnancy and childbirth in the woman, in particular about the number of births and the age at which the woman first gave birth to a child. A woman who has not had children, or who gives birth after age 30, has a significantly higher risk of developing the disease[18].

*Genetic counseling/testing is recommended in the following cases: 1) if there is data in the personal or family history indicating a genetic predisposition to the development of malignant tumors (family history refers to RD or GC). The risk varies depending on the age of the patient and the age of the relative (s) with cancer. Women at very high risk may require earlier screening or additional screening examination) ; 2) whether the test results can be correctly interpreted; 3) if the results contribute to the diagnosis of or influence the medical or surgical management of a patient or family member at hereditary risk of developing malignant tumors.

**Women under 30 years of age who have received radiation therapy to the chest require additional testing.
After the survey, patients are divided into risk zones and given recommendations.

And a risk zone. An examination by a surgeon, therapist or gynecologist is mandatory. If pathology is detected, treatment and medical examination are required. Examination by a mammologist at least once every 12 months using ultrasound in women aged > 40 years. Sonography once a year + mammography once every 2 years for women aged >40 years. Teaching the rules of self-testing.

Risk zone II. Annual mandatory examination by a mammologist , obstetrician-gynecologist, general practitioner, surgeon or local oncologist once every 6 months + sonography for women aged <40 years. Mammography for women aged >40 years once a year. Teaching the rules of self-testing.

Risk zone III. Examination by an obstetrician-gynecologist, therapist, surgeon or local oncologist once a year, at the age of <40 years - sonography once every 6 months, at the age of >40 years - 1-2 times a year; at the age of >40 years - mammography once a year. Teaching the rules of self-testing. An explanation of the influence of risk factors that increase the likelihood of developing HD, recommendations for their elimination, as well as treatment.

The following are risk factors, in cases of ≥3 of which the patient should be referred for mammography.

1. RCD in close relatives or another oncological disease in the patient.
2. Age ≥50 years (annual examination).
3. Dyshormonal hyperplasia of the gastrointestinal tract (localized forms or nodular components, discharge from the nipple, fibrocystic mastopathy).
4. Endocrine disorders (thyroid gland pathology, diabetes mellitus, hypothalamic-pituitary-adrenal diseases, obesity of II and III degrees - excess of normal body weight by ≥20 kg).
5. Reproductive dysfunction: abortion after 35 years, first birth after 30 years, infertility, early or late onset of menstruation.
6. Diseases of the reproductive organs - tumors of the uterus and appendages, inflammatory diseases, menstrual irregularities.
7. Proliferative diseases after treatment (history, according to biopsy).

The low percentage of detection of gastrointestinal tumors by doctors during preventive examinations is due to the virtual absence of mammologists capable of competently assessing the condition of the gastrointestinal tract, conducting appropriate treatment of precancerous diseases and monitoring patients at risk.

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By its nature, a GI review conducted by different specialists is subjective, and therefore different interpretations of the same factors are possible. Let us note the basic requirements for conducting a physical examination of the gastrointestinal tract and the sequence of its elements:

the search must be carried out in a calm environment that ensures confidentiality;
It is recommended to examine the patient in a standing and supine position;
It is necessary to record data on the size, location, mobility and consistency of any tumor formation. Clinically suspicious are slow-moving tumor-like formations that can grow together with surrounding tissues. However, it is known that the clinical manifestations of gastrointestinal tumors are extremely variable. Also note any skin changes such as retraction, erythema, or peeling of the nipple skin;
each nipple should be lightly squeezed to inspect the discharge;

The lymph nodes in the axillary area should be examined. The purpose of their study is to determine whether they are clinically negative (normal size, soft, mobile). If the nodes are suspicious, it is necessary to evaluate their consistency, determine whether they are single or multiple, mobile or stationary;

The results of the examination, even if no pathology is detected, must be fully documented.
Convincing scientific evidence to accurately determine the optimal age for mammography. The results of scientific studies confirm the advisability of performing mammography in women aged 50–70 years [4–7]. There is debate about the frequency of screening for women aged ≥75 years. Routine mammographic screening of women under 40 years of age is not very effective [4–7].

It is known that periodic screening Mammological examination of women who have no complaints reduces mortality from RRD. Screening mammography is the contribution of radiologists to providing comprehensive medical care to patients. Quality criteria for mammography are essentially the same as for other radiological examinations. For radiologists to perform well, it is necessary to establish monitoring and maintenance schedules for equipment, ensure image quality standards, perform standard image evaluation procedures, carefully maintain documentation, and periodically review breast room results.[28]

In regions where there are a sufficient number of mammologists , screening mammography is an x-ray examination method for identifying “hidden” breast cancer at an early stage in women who do not have pronounced symptoms. In addition, during the study, the women examined should be divided into two groups - with low and high risk of the disease. The results may show most women that they do not have any significant abnormalities, while others may be told that they have an abnormality and need further testing. Studies are usually limited to angular views of the craniocaudal and mediolateral regions of each gastrointestinal tract. Additional views are sometimes required to optimally visualize gastrointestinal tissue, but these should not be performed routinely. If pathology is suspected, further imaging studies, diagnostic mammography, or biopsy may be suggested[12].

The goal of all mammography examinations is to facilitate the detection of preclinical forms of breast cancer. Unlike screening mammography, gastrointestinal mammography for special problems (diagnostic mammography and ancillary procedures) is aimed at the specific analytical examination of patients with abnormalities that are detected clinically or during screening. A diagnostic examination of HD should lead the doctor to a final conclusion about the clinical manifestations, as well as verification of the diagnosis, which allows him to give special recommendations for the treatment of the patient.

During preventive examinations of young women (<40 years), mammography can be replaced by sonography . As a result of ultrasound examination, an absolute increase of up to 20% in the detection rate of invasive breast cancer in women with a dense gastrointestinal tract, in whom the sensitivity of mammography decreases, increases the risk of developing breast cancer [6].

If the doctor does not see nodular neoplasms during a gastrointestinal ultrasound, the patient is referred to an endocrinologist-mammologist (in the presence of diffuse mastopathy) or is recommended to undergo a control ultrasound once a year (in the absence of pathology in the gastrointestinal tract).

If nodular neoplasms (fibroadenoma, cyst, etc.) are detected, the patient should be examined using mammography or pneumocystography (Fig. 2). If a fibroadenoma is detected, surgical intervention with histological examination is recommended; in the presence of a cyst, puncture aspiration with cytological examination of the exudate is recommended; If proliferative or malignant processes are suspected, surgical intervention with histological examination is necessary. If the cyst is only punctured, the patient should be re-examined after 1-1.5 months to see if the cyst has recurred. If the cyst recurs rapidly after aspiration, the patient should be referred for surgery.

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If a neoplasm is suspected of being malignant, an urgent sectoral resection of the gastrointestinal tract with histological examination is necessary (the operation should be carried out at an oncology clinic or oncology institute). If the diagnosis of RMS is confirmed, radical surgery should be performed followed by combined treatment.

If, during ultrasound or mammography , the patient is diagnosed with diffuse neoplasms (Fig. 3) in the gastrointestinal tract, treatment and observation are carried out on an outpatient basis. Among the diffuse forms, fibrous forms of dysplasia with ovarian failure of various origins and cystic forms of mastopathy with various concomitant diseases are distinguished. The doctor has the opportunity to use laboratory methods to determine hormonal levels in diffuse forms of gastrointestinal hyperplasia. After this, drug complexes are formed, which are prescribed depending on the level of estrogens, progestins and the clinical form of dyshormonal hyperplasia. The assessment of the situation must be carried out on an individual basis. So, for example, with low estrogen levels there should usually be a picture of hypoestrogenism with the development of mastopathy, but in fact it turns out that concomitant hyperthyroidism, dysfunction of the liver and corpus luteum lead to clinical hyperestrogenism with the development of cystic components of fibroadenomatosis . This situation prompts us to look for a new approach to the formation of treatment tactics, taking into account clinical, radiological, cytohistological data and the results of hormonal studies, which are assessed by their clinical implementation. This indicates the possibility of an integrated approach to assessing the form of dishormonal hyperplasia and prescribing differentiated treatment.

The following forms of dishormonal hyperplasia are distinguished, which simultaneously reflect the degree of their development and differ significantly in treatment tactics: Fibrous ; fibrocystic; adenosis; fibroadenomatosis; involutive-irbromatous; mastopathy with galactophoritis or galactorrhea; mixed diffuse forms; nodular forms of dishormonal hyperplasia.

Treatment of patients with dyshormonal hyperplasia requires an individual approach, taking into account the pathogenesis, concomitant diseases, the woman’s phenotype, the nature of the pathology in the gastrointestinal tract (clinical, radiological data), which is accompanied by certain changes in hormonal homeostasis.

A biopsy is required for solid, dominant and persistent tumor processes. A patient with a solid tumor should be referred to a surgeon, even if the mammogram is negative. In the case of a neoplasm that cannot be palpated (see Fig. 4), but is detected by mammography, it is worth taking targeted images and, if possible, performing a puncture or core biopsy under ultrasound guidance. After receiving a conclusion after a biopsy confirming a benign process, the patient is subject to observation and treatment on an outpatient basis. If the answer is “suspicion of a malignant process” or “malignant process,” surgical treatment is necessary.

Micro- or macrocalcifications are detected on mammographic images, targeted mammography with magnification and compression is mandatory. If, upon enlargement, the process is regarded as benign, X-ray monitoring is necessary after 1 month to determine the tactics of further treatment. If the result is inconsistent, it is imperative to perform a sectoral resection with urgent histological examination and carry out further treatment depending on the histological conclusion.

All nodular forms of dishormonal hyperplasia are subject to cytological or histological biopsy, and if proliferative processes are suspected, surgical treatment with urgent histological examination in an oncology institution, since treatment of cancer patients in a general medical network worsens the prognosis of the disease by more than 3 times. Evaluation of the effectiveness of the results obtained is associated with specific recommendations for practical actions in relation to patients both at the individual, group and population levels.

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