## **BREAST CANCER PROPHYLAXIS**

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Abstract: Breast cancer is on the first place among the types of cancer in women. It is a major disease where prophylaxis plays an important part. The advantage of screening is the improvement of the survival capacity of women with breast cancer; it decreases the mortality rate with almost 20% in the case of women aged between 40-49 years old and with about 30% in the case of women aged between 50-69 years old. The components of breast screening are breast clinical examination, self examination of the breast and mammography. Mammography is the golden standard with a variable sensibility in detecting the breast cancer, depending on the patients' age.

Keywords: breast cancer, prophylaxis, screening

**Rezumat:** Cancerul de sân se află pe primul loc în ierarhia cancerului la femei. Este una din bolile majore în care profilaxia joacă un rol important. Beneficiul screening-ului este îmbunătățirea supraviețuirii femeilor cu cancer de sân, reduce mortalitatea legată de boală cu cca. 20% în cazul femeilor cu vârsta între 40-49 de ani și cu cca. 30% în cazul femeilor cu vârsta între 50-69 de ani. Componentele screeningului mamar sunt examinarea clinică a sânilor, autopalparea sânilor și mamografia. Mamografia reprezintă goldstanardul cu o sensibilitate variabilă în depistarea cancerului de sân în funcție de vârsta pacientei.

Cuvinte cheie: cancer de sân, profilaxie, screening

Because of its high frequency, breast cancer is an important issue of Public Health all around the world, being on the first place in cancers hierarchy in women, with more than one million new cases yearly and more than 400000 deaths (5,6). In the United States of America, breast cancer represents 30% of all cancers of this group, being the second cause of death due to cancer, after the bronchopulmonary cancer (7,9). Studies have shown that 1 out of 8 (12,2%) American women will develop breast cancer during their lifetime (10, 25). In Romania, breast cancer is the most frequent malign tumour in women, recording almost 6660 new cases and 3000 deaths in the year 2001. These figures represent an incidence of 58/100000 and a mortality of 26/100000 among the female population (25).

It is one of the most studied neoplasias, bearing huge epidemiologic interest (1,2). Further epidemiologic research is necessary in order to evaluate the joint contributions of the hereditary and environmental factors, with a view to improve the understanding of the breast cancer etiology and to supply explanations for the global differences regarding the incidence and mortality rates. Statistic data state that half of the women who were diagnosticated with breast cancer and who were properly treated, would live the rest of their life without presenting any recurrent tumour, while 1/3 would die due to this cancer. The risk for a woman to die for cancer is of about

3,6%. Prognostics gravity is related to the recurrence risk; recurrence risk is constant during the first years of life. Survival after 5 years is of 65% and of 50% after 10 years (11).

Tab	le no.	2	Breast	cancer	diagnosis

Anamnesis	*family history (ovarian or breast			
	cancer) *menopausal status,			
	*menarche occurrence age,			
	*number of regular			
	menstruations			
	*number of abortions			
	*breast feeding			
	*use of oral contraceptives			
	*Hormonal Replaceable Therapy			
	(HRT) *women with AD BRCA1			
	gene, have 50% chances of			
	developing breast cancer (85%)			
	*nipple pains or discharge			
Clinical examination	Nipple inspection (retraction,			
	deviation, erosion, loss of colour,			
	nipple sanguinolent discharge,			
	Skin inspection (redness, edema,			
	venous circulation, skin forceps,			
	presence of satellite nodules or			
	ulceration)			
Paraclinical	Breasts and ganglions			
examination	palpation over and under and the			
	clavicle, bilaterally and axillary			
	in order to identify the size of the			
	tumours, as well as the shape,			
	consistency, localization,			
	mobility and adherence.			
	Mammography			

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The risk of mortality due to breast cancer may be higher in women with pre-existent risk factors.

# Table no. 1 Breast cancer risk factors (altered after Donegan W.L.)

High risk	Low risk			
More than 40 years old	Less than 30 years			
	old			
Mother or sister with breast	First term			
cancer	pregnancy before			
	the age of 20			
Breast cancer antecedents	Surgical			
	menopause before			
	35 years old			
Ovarian, endometrial or				
colon cancer antecedents				
Cowden disease				
Li-Fraumeni syndrome				
Mutations of BRCA1 and				
BRCA2 genes				
Prolonged therapy with				
exogenous estrogens				
Caucasian women				
Obesity				
Urban environment				
Developed socioeconomic				
level				
Early menarche (above 5				
years old)				
Lack of pregnancies				
Jewish women				
First term pregnancy after 30				
years old				

A constant and continuous increase of incidence may be observed in the last years, while mortality remained unchanged - 60-70% as against the incidence (12). The causes would be the identification of breast cancer in early stages by mammographic screening and the improvement of the therapeutic methods. (12). Incidence is increasing significantly in the fourth decade, reaching high values before the age of 50. After menopause, it continues to increase, but much slowly.

Table no.	<b>3 Breast</b>	cancer	classification
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Non-invasive breast cancer	*DCIS (ductal carcinoma in situ) the majority of lesions are detected only by mammography (82%) (17) *LCIS (lobular carcinoma in situ) frequently bilateral, six times rarely than DCIS (0,5-3,6%)		
Invasive breast cancer	*Invasive ductal cancer (75%), frequently with metastases in axillary ganglions (21) * Invasive lobular carcinoma (5- 10%) mammographic alterations can be falsely negative in 19-43%		

of cases
* Tubular carcinoma (2%) has a
good prognostic
*Modular carcinoma (5-7%)
occurs in young women
*Colloid or mucinous carcinoma
(2-3%) occurs in advanced age
* Paget disease (1-2%) occurs
under the form of eczematiform
lesions of the nipple and areola
which may became ulcerous and
hemorrhagic.
*Inflammatory carcinoma
(Carcinomatous mastitis) is a
form of local advanced cancer

### BREAST CANCER SCREENING

Breast cancer is one of the neoplasias that can be detected by screening; it meets the criteria defined by WHO for a disease to make the object of a screening (7):

- the disease has a large prevalence and gravity through the medical and social consequences; thus, it becomes an important issue of Public Health;

the disease has preclinically detectable phase;

- the treatment of the disease detected before the clinical symptoms is more advantageous in comparison with the treatment of the disease after symptoms start;

- the screening test should meet acceptable levels of accuracy and costs;

- the screening test and the conduct to be followed should be acceptable for all risk persons and for the health system professionals.

The screening test makes part of the methods used for the early detection of diseases, being classified as a secondary prophylaxis measure (1). Screening is meant for the asymptomatic apparently healthy people. The main benefit of the early detection of breast cancer is to win the survival battle.

Starting with the end of the 80's, a large consensus was set up regarding the fact that the mammographic screening significantly reduced mortality due to breast cancer.

This consensus was based on eight randomized studies for breast cancer screening in North America and Europe, as well as on numerous individual studies and scientific articles on the same theme, which compared the combination between mammography and clinical examination with the absence of mammography. The combined result of these studies is a significant reduction with at least 24% of mortality due to cancer in women aged between 40-74 years old and who were invited to screening.

In the case of the women aged between 50 and 69 years old, the combined result of these studies that compared mammography with its absence, showed the protective results of mammography and a significant decrease with at least 24% (20-35%) of mortality due to breast cancer. On the contrary, the women between 40-49 years old, have registered for many years controversies on

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the use of mammography; its efficacy is more reduced and is not significant in any of the research even if the data compliance showed a reduced and late benefice in favour of cancer detection (23). Yet, meta-analyses showed that in the case of this age group, mammography reduced significantly the mortality rate with 20%.

For the age group of more than 70 years old, few women participated in randomized trials in order to be able to draw a conclusion on screening effects. A study made in Holland proved that mammography of women aged between 65-74 years old, brought about a decrease of mortality due to breast cancer with 55%. A meta-analysis made by Kerlikowske in 1995 that aimed at 13 randomized studies proved a significant reduction of mortality in women aged between 60-74 years old, after 7 up to 9 years of surveillance (13).

*Mammary screening component parts* are: mammary clinical examination, breasts self-examination, mammography.

Periodical clinical examination of breasts and the self-examination are less expensive methods and if they are well organized, they may help to an early diagnosis of breast cancer (21). The isolated breasts clinical examination is not efficacious for mortality decrease. It has a more reduced sensitivity than mammography, regarding breast cancer detection (63% vs. 88%); sensitivity increases along with the age (21). Breast self-examination has also a reduced sensitivity (15-25%) in detecting breast cancer (20).

Mammography is the most important screening method in identifying the infraclinic breast carcinoma. It is the golden standard with sensitivity in discovering breast cancer, which may vary according to the age: in young girls, with dense breasts - reduced sensitivity, in patients up to 50 years old - sensitivity of 63-80%; in patients more than 50 years old, sensitivity is of 89-94%. Mammography is made bilaterally regarding the two standard views: craniocaudal and mediolateral oblique views. The views should be perfectly symmetrical and reproducible (20). The mammography quality and its interpretation depend on the device performance and its interpretation, the sensitivity of the film used and on the examiner's experience. Mammographic signs of malignity are micro-calcifications and alterations of density which consist in tumoral masses (spiculate masses associated with architectural distortions and agglomerated microcalcifications disposed linearly, branched or in a discrete mass). The result may be: positive test - anomaly which may correspond to a carcinoma or negative test - without anomalies that may indicate the existence of cancer.

The recommendations of the American Cancer Society for mammary screening are that asymptomatic women more than 50 years old should make a mammography yearly, a monthly self-examination and a clinical examination yearly, while those between 40-50 years old should be submitted to a clinical and mammographic examination every two years (3,24).

The use on a large scale of the mammographic screening programmes in the U.S.A. brought about a

rapid increase of the number of cases diagnosticated with breast cancer that could not be identified by the selfexamination.

Thus, the results of certain mammographic screening trials proved a decrease of mortality due to breast cancer in the women of more than 50 years old, due to screening with 50% regarding the Hip study; of 40% in the Sweden research and of 16% in the Edinburgh study.

 Table no. 4 Mammographic screening – retrospective trials

Study	Batch	Age	Inci-	Rhythmic	Follo
			dence	ity	w-up
				(months)	(year
					s)
Hip	62000	40-64	2	12	10
Sweden	77000	40-74	1	33	12
Edinburgh	68000	45-69	2	18	12

The factors the screening quality depend on are: physical characteristics of breasts, patients' age, followed up length, clinician's experience, the experience of radiologist and physicist, quality of mammographic device, interpretation system and comparative results of the clinical studies (17).

The purpose of screening in breast cancer is to reduce mortality in the entire population; life quality and morbidity should also be taken into account, as well as the decrease of the mutilating treatments and the use of chemotherapy, social and professional reinsertion (15,16). The main benefit for the early detection of breast cancer is to win the survival battle.

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