

Risk Factors Associated in Breast Cancer Patients Mexico 2023

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ABSTRACT *Breast cancer is a global problem, with many new cases recorded annually with a significant number of deaths, although prevention plays an important role in the benefits thanks to the Early Detection of cancer. An important factor related to breast cancer survival is the time in which the diagnosis is made. The objective of the study is to determine the risk factors associated with breast cancer in two ISSSTE units. Epidemiological study of cases and controls, analytical, observational, cross-sectional, retrospective, carried out in women with and without breast cancer who attended the Clinic Hospital ISSSTE Coatzacoalcos and the Clinic Hospital ISSSTE Ciudad de México in the years 2021 and first semester of 2022. To calculate the sample size, the Schelesselman tables were used. Data were analyzed and descriptive statistics were used and the odds ratio was calculated. 50 cases and 30 controls with a mean of 52.29 years of age with a deviation of ± 9.83 for the cases and 42.81 (DE ± 11.01) for the controls were studied. The age in the patients with breast cancer yielded an odds ratio (OR) equal to 5.75 (95% CI), a hereditary family history of breast cancer in 88% of cases, and the oldest age at first pregnancy was 34 years. Lifestyle with sedentary lifestyle and with BMI of obesity in 70% of both cases and controls. Only 52% of the patients with breast cancer breastfed and in the controls 43.33% breastfed. The results suggest that age and lifestyle can influence the evolution of cancer as well as family history, but in this case 88% of patients in the cases did not have a family history of cancer against the control cases that all had a history of cancer. Relatives of cancer and do not have the disease.*

KEYWORDS: Breast cancer, histological types, risk factors, traditional parameters,

INTRODUCTION

Breast cancer is defined as the malignant tumor that is characterized by loss in the control of growth, development and cell multiplication, with the capacity to produce metastasis; When referring to a malignant epithelial neoplasm (new growth) we speak of carcinoma and if the malignant tumor is confined to the epithelium that covers a duct or a lobule without exceeding the basement membrane we will speak of carcinoma in situ (Kopans, 1999). Breast cancer originates in the lining cells (epithelium) of the ducts

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(85%) or lobes (15%) of the glandular tissue of the breasts. At first, the cancerous tumor is confined to the duct or lobe (in situ), where it usually causes no symptoms and has minimal potential for metastasis (WHO 2016).

It seems certain that, like the rest of solid tumors, it is the result of alterations in DNA (lesions or mutations) that cause an uncontrolled proliferation of cells, but despite this, its etiology is not yet known, although the BRCA1 and BCRA2 genes have been isolated in women with hereditary breast cancer. It has been found in women with abnormal genes a 50% risk of developing the disease.

Breast cancer is the leading cause of death from non-preventable cancer, which although it is one of the most studied tumors, remains one of the few known. With early detection, a better prognosis has been obtained despite the multiple studies that have proven its benefit, there is still no universal agreement as to who should be screened, how often it should be performed in each individual and when it should cease. The effectiveness of screening has been demonstrated in asymptomatic women especially through the use of mammography, which, although it is the main technique, there are other methods such as Magnetic Resonance and Nuclear Medicine.

Breast cancer continues to be a health problem worldwide, so this work aims to identify the risk factors for breast cancer, describing the variables in addition to the most frequent histological types that occurred in patients with breast cancer in two ISSSTE Hospitals in 2023.

Table 1: Kopans, Traditional parameters

TRADICIONAL PARAMETERS	PROGNOSIS FOR BREAST CARCINOMA
Tumor factors	Guest Factors
Lymph node status	Age
Size tumor	Menopause state
Histological/nuclear grade	Family History
Lymphatic/vascular invasion	Previous neoplastic disease
Pathologic stage (TNM)	Immunosuppression
Steroid receptor status (ER/PR)	Host inflammatory response
DNA content (ploidy, S phase)	Nutrition
IEC (on-site)	Previous chemotherapy

Justification

In Mexico, breast cancer occupies one of the first places of mortality, in 2014 there were 11,372 new cases of breast cancer with an incidence rate of 22.56 per 100,000 inhabitants over 10 years, in the specific group of women aged 25 years and older, in 2015 there were 6252 deaths in women with a crude rate of 18 deaths per 100,000 women. The entities with the highest mortality from breast cancer are: Sonora. (28.6), Nuevo Leon (26), Coahuila 25.7), Chihuahua (24.8). Mexico City (24.7), Sinaloa (22.2) and

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Veracruz (15.7). The highest incidence in the number of cases occurred in the group of women aged 50 to 59 years, with 45% of all cases. They are regularly economically active women, causing an impact on the health system since the longer it takes to have the diagnosis, the greater the expenditure on treatment and the prognosis will not be so favorable.

Due to the increase in cases of breast cancer, which occurred in two ISSSTE clinics in Coatzacoalcos, Veracruz and ISSSTE Mexico City in 2023, this work was carried out with the aim of identifying the risk factors associated with breast cancer.

This study was carried out where variables are handled quantitative, as well as qualitative, described in tables obtaining the percentages of the samples of sick women, as well as control sample of women with a history of breast cancer without being sick. Observing that the variables described above age, lactation and lifestyle play an important role in the disease.

With the information obtained, it gives us the benefit of being able to implement prevention campaigns for the Timely Detection of Cancer and to be able to support women who are at risk of suffering from the disease and who have a better prognosis of life.

Description of the problem

The Panamerican Health Organization (PAHO) in 2020 reported that 2.3 million women worldwide were diagnosed with breast cancer, and 685,000 died from the disease. At the end of the same year, 7.8 million women who had been diagnosed with breast cancer in the previous five years were still alive, making breast cancer the most prevalent in the world. Globally, disability-adjusted years of life lost (DALYs) in women with breast cancer are estimated to exceed those due to any other cancer. Breast cancer affects women of any age after puberty in every country in the world, but rates increase in their adult lives. This study was interested in identifying the risk factors present in the sample of 50 women with breast cancer.

METHODOLOGY

Universe

1. Inclusion criteria: Women with breast cancer attending ISSSTE units and/or at risk age.
2. Exclusion criteria: Women who do not suffer from breast cancer, outside the age ranges and/or non-ISSSTE beneficiaries.

The statistical sample is an analytical, observational, cross-sectional, retrospective case-control epidemiological study of 50 women in the age ranges of 20 to 70 years, including the qualitative and quantitative variables to identify the risk factors present and histopathological result of the biopsy in the study population during the period 2021-2022 in two units of the ISSSTE.

Sample**Table 2. Descripción of variables**

Variables	Characteristic	Description	Operationalization (value)
Family history	Independent/qualitative/nominal	Genetic load that influences the phenotype of a population.	Present or absent
Age	Dependent/quantitative/discrete	How long a person or other living being has lived since birth.	Ranges: 20 to 39 years. /40 to 70 years.
Place of origin	Independent/ qualitative/nominal	Place where someone, under normal circumstances, should have been born.	Mexico city/ Coatzacoalcos Veracruz/ Minatitlán Veracruz /Las Choapas Veracruz
Educational level	Independent/qualitative/nominal	The highest level of education a person has completed.	Incomplete or complete primary/ Incomplete or complete high school, incomplete or complete baccalaureate/technical/professional career/master's degree or doctorate.
Occupation	Independent/qualitative/ordinal	Work that prevents spending time on something else.	Worker / housewife / pensioner.
Lifestyle	Independent/qualitative/nominal	Living conditions in which people integrate the world around them and which includes eating habits	Lifestyle: healthy or deficient according to BMI= normal/overweight/obese.
Lactation	Independent/qualitative/nominal	Optimal way of feeding infants	Yes/No
Deed	Dependent/quantitative/discrete	No. Total number of pregnancies a woman has had, regardless of outcome.	Number of children
Contraceptives/thr	Independent/qualitative/nominal	Safe and effective method to temporarily prevent pregnancy	Yes/No
Menarche	Independent/quantitative/discrete	First menstrual period	Age of onset of menstruation
Menopause	Independent/qualitative/nominal	Last menstruation	Yes/No

Source: Variables that are identified as risk factors in breast cancer. Own elaboration with data obtained from two Hospitals (2021-2022).

Table 3. Data tabulation

Data	No/Range Percentage	Percentage
Family history	with/background = 06 without/ antecedents = 44	12% 88%
Age	20 to 39 years = 4 young people 40 to 70 years = 46 older	8% 42%
Place of origin	25 Coatzacoalcos 25 Mexico City	50% 50%
Educational level	46 with bachelor's degree 02 primary and incomplete secondary 02 primary and secondary complete (high school)	92% 04% 04%
Occupation	31 Workers 13 Retirees 06 Housewives	62% 26% 12%

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Lifestyle (BIM)	35 Obesity 11 Overweight 04 Healthy	70% 22% 08%
Lactation	24 lactating women 26 women Non-lactation	48% 52%
Deed	0 = 03 women 1 = 17 women 2 = 21 women 3 = 08 women 4 = 01 woman	6% 34% 42% 16% 02%
Contraceptive s/ thr	Contraceptives = 30 Without contraceptives =20	60% 40%
Menarche	Normal range = 49 Late range = 01	98% 02%
Menopause	With menopause = 43 No menopause = 07	86% 14%

Source: Number and percentage of 50 women suffering from breast cancer according to the data that was identified. Own elaboration with data obtained from two ISSSTE Hospitals (2021-2022).

Table 3.

Shows control of women with a history of breast cancer without being sick

		Cases / Controls		
		Sick		
older	a	46 (92%)	b 20 (66.66)	66
young	c	04 (8%)	d 10 (33.3%)	14
		m1 50	mo 30	
		E= 46	OLDER PATIENTS	
Cases	E= 04	YOUNG PATIENTS		
Controls	Ê= 20	NO OLDER PATIENTS		
	Ê= 10	NO YOUNG PATIENTS		

All ratio= $ad / bc = \frac{460}{80} = 5.75$

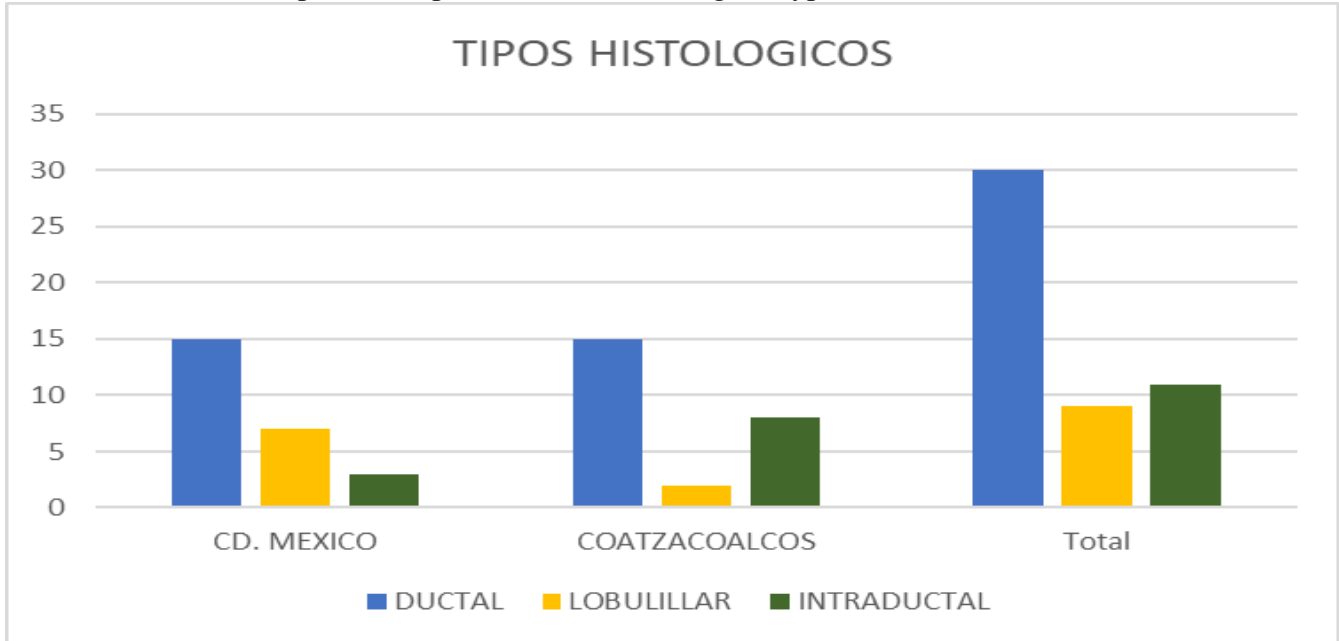
IMC DE MUESTRA CONTROL	%
09 OVERWEIGHT WOMEN	30.00%
20 OBESITY WOMEN	66.66%
1 HEALTHY WOMEN OF BUN	3.33%

AGE RANGE 20 TO 39 YEARS = 10 YOUNG WOMEN

AGE RANGE 40 TO 70 YEARS = 20 OLDER WOMEN

Source. All ratio between cases and controls. The number of cases of sick older and younger women and the control sample of non-sick older and younger women (2021-2022) are shown. Source

Graph 1. Comparison of two histological types in ISSSTE clinics.



Source: multicenter study conducted from 2021 to the first quarter of 2022

RESULTS

Based on the analysis of the tables described above, the following results were obtained, finding that age plays an important role in relation to the development of cancer in women over 40 years of age. Since there is a positive association between age and the development of cancer, identifying that a woman older than 40 years has 5.75 times more risk of developing cancer than a younger woman.

It is important to note that early menarche is an important factor in breast cancer, but in our sample no woman had early menarche. Another risk factor identified in the study was overweight and obesity, since women with a BMI greater than 25, have a 76% higher risk of developing cancer than a woman with a lower BMI. A factor identified is breastfeeding in which 52% did not breastfeed against 48%. The relative risk indicates the importance of breastfeeding is a protective factor since a woman who breastfeeds more than 4 months decreases the risk of developing the disease by 111%.

Hereditary family history only 16% have a risk of developing cancer according to the data obtained in the relative risk. Therefore, sociodemographic data are significant in the study as risk factors. In this work we identified that the most frequent histological type in ISSSTE patients was the Infiltrating Ductal in patients over 56 years of age, however, when screening asymptomatic patients, we identified the Ductal In Situ

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histological type in children under 50 years of age, this histological type has a better response to oncological treatment and increases their survival

DISCUSSION

The data shown by Calero (2019), on the probability of suffering from breast cancer shows an intimate relationship with increasing age, and the incidence of the disease is two to three times higher than the probability of dying from breast cancer, As an example, the probability of death at age 65 is similar to the incidence of the disease at age 45, in the present study, the results show that a woman over 40 years of age, 5.75 times more suffer from breast cancer, which shows that age, by the biological process of the human being is a risk factor for the development of cancer.

Another important fact found in the present study is the background, since the results showed when making an association between the history of breast cancer, the results found were that women with a history of breast cancer had 12% more risk of cancer than those who do not have. Although the percentage is lower than in the other factors, it is of great importance since it is directly related, although it is not decisive.

According to Henderson in their study conducted on cancer genetic determination in 2021, they identified that patients treated for a primary breast tumor have a risk of developing a second breast cancer three to five times higher than the general population.

Within these patients there is a subgroup of women in which the probability is even higher, these are patients treated at a young age, less than 50 years with life expectancy of more than 20 years with ductal carcinoma in situ and histological types with a good prognosis, in that same study, women with a family history of breast cancer and those who had a multicentric primary tumor were identified as having an increased risk of contralateral breast cancer. The American Cancer Society, in its latest report, reports that being overweight or obese after menopause increases the risk of breast cancer. Before menopause, your ovaries produce the most estrogen, and adipose tissue produces only a small part of the total amount. After menopause (when the ovaries stop producing estrogen), most of a woman's estrogen comes from adipose tissue.

Excess adipose tissue after menopause can raise estrogen levels and increase your chance of breast cancer. In addition, women who are overweight tend to have higher blood insulin levels. Higher insulin levels are linked to some types of cancers, including breast cancer. This may explain what was identified in this study, since a woman with a body mass index greater than 25, has 76% more risk of cancer than a woman lower than that index.

According to Niurka (2020), in her study, risk factors associated with breast cancer carried out in Pinar del Río Cuba, in a follow-up that was carried out to women with exclusive breastfeeding, identified that women with this practice reduced by 75% the risk of developing breast cancer, which coincides with the present study which shows that a woman who lactates more than four months, decreases by 111%, the

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probability of developing cancer. The relative risk indicates the importance of breastfeeding is a protective factor since a woman who breastfeeds more than 4 months decreases the risk of developing the disease by 111%. breast cancer of the ductal histological type. However, it is important to consider that the other two types that were presented, such as lobular and intraductal, were also present to a lesser extent. Traditional prognoses for breast carcinoma.

The predominant risk factors such as sociocultural changes that were associated with the transition and the processes that sustain it (breastfeeding patterns). From these results, it is also evident the need to promote a culture of self-care among women regarding breast cancer, both because of the social and economic cost involved in its treatment, and because of the permanent problems it can leave when death can be avoided. Timely detection should be a priority by improving health services, organizing permanent breast cancer campaigns improving their efficiency and effectiveness.

Health services must provide for the necessary requirements to meet the needs of prevention (detection, control) and cure of this condition, considering that there is a lag in primary care services for the most disadvantaged population groups, to which, in addition, technologically advanced health services will have to be offered, such as the use of mammography in women considered at high risk of disease. Finally, it is necessary to underline the importance of generating lines of research on the various risk factors, as well as the social, cultural and economic processes that can sustain them, such as the identification of women at risk through tests to determine the predisposing gene in premenopausal women (BRCA1); the impact of hormone replacement supplementation; the promotion of breastfeeding as a health practice in the mother-child binomial, as a primary prevention measure; as well as the increase in coverage of secondary prevention of breast cancer, through the study of mammography in high-risk women.

CONCLUSION

It is concluded that social factors such as age, breastfeeding practices, eating habits that promote overweight and obesity are determinants for the development of breast cancer, as evidenced by the present study.

Although the genetic component is predisposing for the development of cancer in the present study, it is not decisive for women to develop cancer, since this factor studied represented the lowest percentage of all the factors that were associated.

It is concluded that timely detection plays an important role in asymptomatic patients without palpable lesions, which confirms that screening all women with a history of age between 40 and 69 years plays an important role in survival thanks to timely diagnosis giving a better prognosis and quality of life. BMI greater than 25 is related to an unhealthy lifestyle that may be present in breast cancer disease. On the other hand, it is important to encourage breastfeeding to reduce the risk factor for breast cancer disease.

It is worth mentioning that breastfeeding time after 4 months can be an important factor in reducing the risk of breast cancer.

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The emotional support to the patient is of paramount importance, as well as the follow-up of each of the cases of breast cancer being the timely and quality attention to achieve the management in time and form to the oncology area and in this way achieve at the time the treatment indicated by the specialty in a timely manner and thereby reduce the risks of death.

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