

Clinical-Epidemiologic Characterization of Patients with Breast Cancer in a Family Medicine Unit

Caracterización clínico-epidemiológica de pacientes con cáncer de mama en una unidad de medicina familiar

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Summary

Objective: analyze the clinical-epidemiological characterization of patients with breast cancer in the Family Medicine Unit (UMF) No. 9, of the Mexican Institute of Social Security (IMSS) in Acapulco, Mexico from 2018 to 2021. **Methods:** cross-sectional, descriptive, retrospective study which included 71 patients with a positive diagnosis of breast cancer, assigned to the FMU No. 9, in Acapulco, Mexico, from 2018 to 2021. The studied population was obtained from the Institutional Cancer Registry of the Epidemiology system; the source of information was the electronic clinical record, from which clinical-epidemiological information, mammography report, histopathological result, and clinical stage were collected. Descriptive statistics were performed using simple frequencies and percentages with the obtained data. **Results:** 46.4% (33/71) of breast cancer cases were registered in 2018. 32.4% were 61-70 years old, 98.6% were women, 42.3% were overweight, and 31.0% had type 2 diabetes mellitus (DM2). According to the BI-RADS (B) classification, 38.0% presented a B4. Regarding the histopathological report, ductal carcinoma was the most common with 76.1% (54/71). **Conclusions:** a significant percentage of breast cancer was detected in patients who were overweight, and had type 2 diabetes mellitus, nearly 40% of the patients had lesions of intermediate suspicion of malignancy, while three quarters of the patients presented with ductal carcinoma. It is extremely important to strengthen the primary care level through health promotion, and encourage breast and clinical self-examination during the first medical contact to detect risk factors and clinical signs suggestive of the disease, which will reduce morbidity and mortality.

Key words: Breast cancer; Risk factor; Clinical Characteristics; Mammography.

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Resumen

Objetivo: analizar la caracterización clínico-epidemiológica de pacientes con cáncer de mama en una unidad de medicina familiar. **Método:** estudio transversal descriptivo, se incluyeron 71 pacientes con diagnóstico de cáncer de mama de 2018 a 2021. La población de estudio se obtuvo del Registro Institucional de Cáncer del sistema de epidemiología; la fuente de información fue el expediente clínico del que se recabó información clínico-epidemiológica, reporte de mamografía, resultado histopatológico y etapa clínica. Con los datos obtenidos se realizó estadística descriptiva mediante frecuencias simples y porcentajes. **Resultados:** 46.4% (33/71) de casos de cáncer de mama se registró en el año 2018. 32.4% tenía 61-70 años de edad, 98.6% era mujeres, 42.3% tenía sobrepeso y 31.0% presentó diabetes mellitus tipo 2. 38.0% se detectó con estadio B4 de acuerdo con la clasificación BI-RADS. El tipo histológico más común con 76.1% (54/71) fue el carcinoma ductal. **Conclusiones:** un porcentaje importante de cáncer de mama fue detectado en pacientes que presentaron sobrepeso y diabetes mellitus tipo 2, cerca de 40% de las personas tuvo lesiones de sospecha intermedia de malignidad, mientras que en tres cuartas partes estuvo presente el carcinoma ductal.

Palabras clave: cáncer de mama, factor de riesgo, características clínicas, mamografía.

Introduction

Breast cancer is the most common malignancy due to its high incidence, and prevalence. It is one of the leading causes of death and disability in women ≥ 40

years of age and is considered a global public health problem.¹⁻⁴ Western Europe has the highest incidence of the disease.⁵ In 2020, the World Health Organization (WHO) reported 210 000 women diagnosed with breast cancer, and 68 000 deaths³ in America.

In Mexico, breast cancer has been the most common malignant tumor in women since 2006, surpassing the incidence of cervical cancer.⁶ Likewise, there has been a steady increase in both, the incidence, and mortality rates; in 2019 alone, the incidence rate was 35.24 cases per 100,000 women over 20 years of age.⁷ Annually, the Mexican Institute of Social Security (IMSS) diagnosis approximately 15,000 patients with breast cancer.⁸

The WHO has recommended sensitizing the population to the importance of breast self-examination, and to consult a health professional if any abnormality is identified, and also emphasizes the use of mammography as a universal screening program for early diagnosis of breast cancer.^{9,10}

This disease is characterized by its histological and clinical heterogeneity, and the presence of genetic factors. Its impact is related to demographic, and epidemiological transitions. Several risk factors associated with breast cancer have been described, among the non-modifiable ones are age, gender, race, early puberty, late menopause, breast density, and certain mutations in key genes; among the modifiable factors are high-fat diet, alcohol consumption, smoking, thoracic radiotherapy history, first pregnancy after 30 years of age, nulliparity, no breastfeeding, fewer pregnancies, DM2 diagnosis as comorbidity, use of hormone therapy, among others.⁹⁻¹²

Having one or more of the above mentioned factors increases the probability of presenting this condition during lifetime; therefore, these factors should be monitored, and be subject to review, and intervention, to reduce the biological, psychological, and economic impact of this disease.^{3,4,13,14}

Due to the above, the objective of this research was to perform a clinical-epidemiological characterization of patients with breast cancer in the Family Medicine Unit (FMU) No. 9, IMSS in Acapulco, Mexico from 2018 to 2021.

Methods

A descriptive cross-sectional study carried out based on records of people diagnosed with breast cancer; according to the following criteria: IMSS beneficiaries, assigned to FMU No. 9, both genders, without age restriction, and with a histopathological diagnosis of breast cancer. Patients with incomplete records who did not have enough study variables for this research were eliminated.

A total of 102 electronic clinical records of patients diagnosed with breast cancer, and confirmed by histopathological study were reviewed. Thirty-one files were excluded, 28 due to lack of information, and 3 duplicates. Seventy-one met the eligibility criteria. The studied population was obtained from the Institutional Cancer Registry of the Epidemiology System.

Data were collected through a card designed and filled out by the researchers to record relevant information of the patient for the objectives of the study. The template included patients' sociodemographic and clinical-epidemiological information, including year of diagnosis, age, gender, family

history of breast cancer, type 2 diabetes mellitus (DM2) presence, smoking, body mass index (BMI), age at menarche and menopause, number of pregnancies, lactation, and hormone use. The results of the mammography study (BI-RADS classification), affected breast, histopathological report, clinical stage, and treatment used were collected.

The CIETMAP 2.1 statistical package was used for data analysis. Descriptive statistics were performed using simple frequencies and percentages.

The research protocol was approved by the corresponding local research committee and complied the current IMSS regulations.

Results

The age range of the studied population was 30 to 79 years, with an average of 60 years and mean of 58 (SD±11).

78% (57/71) of the cases were overweight or obese, BMI average was 28 (SD±5).

The clinical findings reported were palpable mass in 76.1% (54/71), breast pain 4.2% (3/71), mastitis 2.8% (2/71), and nipple eversion in 1.4% (1/71) (Table 1).

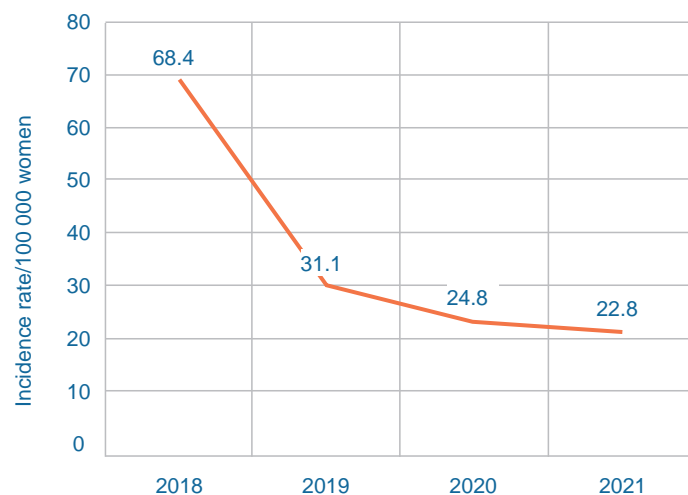
Using the regional population base for the clinic's area of influence, the incidence rate during the study period, was estimated. In 2018, 46.4% (33/71) patients were identified with a diagnosis of breast cancer, which corresponds to an incidence rate of 68.4 cases per 100,000 women ≥25 years of age who were assigned to the IMSS. The other values corresponding to the different years are shown in Figure 1.

Of the 70 women with breast cancer, the minimum age of menarche was 9 years, maximum 17 years, mean 13.17 (SD±1.51). While for menopause the age

Table 1. Sociodemographic and Clinical Characteristics of Breast Cancer Patients

		Frequency N=71	Proportion
Age	30 to 40 years	4	5.6%
	41 to 50 years	17	23.9%
	51 to 60 years	16	22.5%
	61 to 70 years	23	32.4%
	>70 years	11	15.5%
Gender	Female	70	98.6%
	Male	1	1.4%
Breast Cancer Family History	Yes	17	23.9%
	No	54	76.1%
Type 2 Diabetes Mellitus	Yes	22	31.0%
	No	49	69.0%
Body Mass Index	Malnutrition	1	1.4%
	Normal	15	21.1%
	Overweight	30	42.3%
	Obesity	27	36.5%
Smoking	Yes	5	7.0%
	No	66	93.0%
Clinical Findings	Yes	57	80.3%
	No	14	19.7%

Figure 1. Breast Cancer Incidence Rate per 100,000 Women



range was 34 to 58 years, mean 47.34 (SD±5.06). (Table 2)

The stage of the disease in patients according to the BI-RADS international classification (B) found that 38.0% (27/71) corresponded to B4, 26.8% (19/71) in stage B5, 21.1% (15/71) in stage B3, 12.7% (9/71) in stage B0, and 1.4% (1/71) in B6.

49.3% (35/71) of cases were in clinical stage II, 32.4% (23/71) in stage III, 12.7% (9/71) in stage I, and 5.6% (4/71) in stage IV.

The lesion in the right breast was in 52.1% (37/71) of the cases, in contrast to the left breast that reported 43.7% (31/71), and only 4.2% (3/71) bilateral.

Ductal carcinoma was the most common histologic type reported in 76.1% (54/71) of cases, lobular carcinoma in 11.3% (8/71), other histologic types in 11.3% (8/71), and metaplastic carcinoma in 1.4% (1/71).

The treatment given was individualized according to the clinical stage, immunohistochemical studies, extension, and other criteria. Mastectomies were performed in 64 patients. Complementary chemotherapy was used in 59 patients, while hormone therapy was included in 38, and radiotherapy was prescribed in 24. Immunotherapy was used in 6 patients and multimodal treatment (combination of the aforementioned therapies) in 17 (Figure 2).

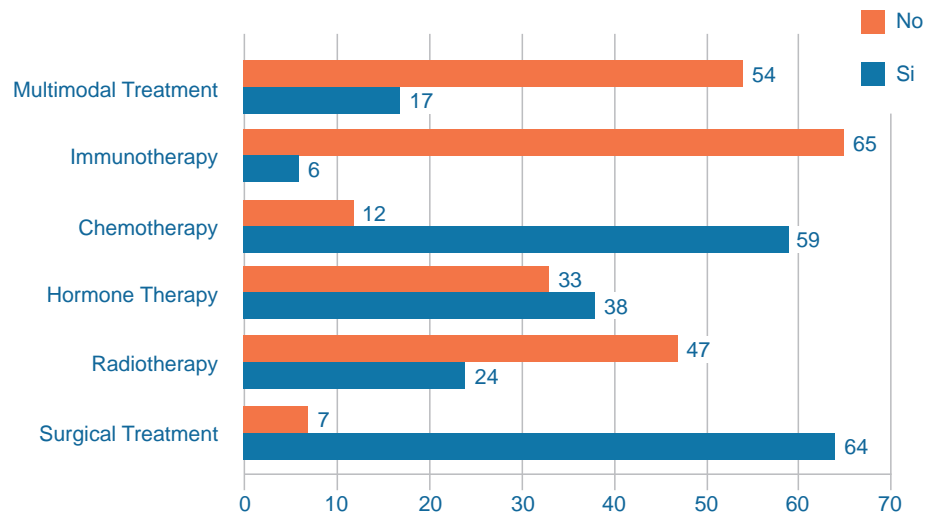
Discussion

The incidence rate of breast cancer during the study period was higher than that reported in the national and international literature.^{7,15} The differences can be explained by the quality of the electronic records, the data collection strategy, as well as by social, and biological variations in the population.¹⁶⁻¹⁸

Table 2. Gynecological and Obstetric History of Patients with Breast Cancer

		Frequency N=70	Proportion
Age of Menarche	<10 years	2	2.9%
	10 to 12 years	21	30.0%
	13 to 15 years	44	62.9%
	>15 years	3	4.3%
Menopause	<40 years	6	8.6%
	40 to 45 years	10	14.3%
	46 to 50 years	29	41.4%
	>50 to	7	9.6%
	Not applicable	18	25.7%
Number of Pregnancies	1 pregnancy	10	14.3%
	2 to 3 pregnancies	34	48.6%
	4 to 5 pregnancies	12	17.1%
	>5 pregnancies	9	12.9%
	Nulliparity	5	7.1%
Breast Feeding	Yes	61	87.1%
	No	9	12.9%
Hormonal Contraceptive Methods	Yes	18	25.7%
	No	52	74.3%

Figure 2. Treatment Given to Patients with Breast Cancer



The increase in age was a relevant factor in the frequency of breast cancer in our study, this was similar to that reported in other research whose population base is at the second level of care.¹⁹⁻²¹ In contrast, these trends have been different in studies with early diagnostic strategies.²²

It has been proposed that the incidence of this pathology will continue to increase as a reflection of a longer life expectancy, reproductive history, and environmental exposure to risk factors.⁹ Likewise, the presence of lesions in a man, in this study, supposes factors associated to family history, exposure to radiation, or BRCA2 mutations.^{2,23-26}

Overweight affected more than a third of the population, which differs from other observations.^{20,21} On the other hand, DM2 was a morbidity present in almost 30% of the cases, similar to that reported in Europe.²⁷ These two conditions favor the presentation of breast cancer due to the increase in the conversion rates of androgenic precursors into estrogens through aromatization, which leads to an increase in the volume of adipose tissue.²⁸ The main gynecological and obstetric antecedents found in breast cancer patients in this research were early menarche, late menopause, fewer pregnancies, contraceptive use; this coincides with other study reports in heterogeneous populations. Nulliparity, as well as breastfeeding were not consistent with another research.^{20,21,29}

It was found that four out of five patients identified some abnormality in the breast, referring to a palpable mass as the most frequent, which coincides with what has been reported by other authors.^{30,31} For this reason, the performance of intentional searches

significantly increases the detection of this disease.

BI-RADS stage 4 with greater involvement of the right side, and the histological type ductal carcinoma were two characteristics that were most frequently found in the population, these findings are consistent with those reported in other studies.^{21,22,29,32-34} Therefore, timely diagnosis, and early histopathological classification will define the management, and improve the prognosis.³⁵⁻³⁷

Based on the identified findings, it is recommended to emphasize early screening of patients at risk at the different levels of care. The mechanisms should involve primary prevention, dissemination of messages that raise awareness among the population, and primary-level physicians, as well as standardization of the registration and follow-up system, for breast cancer patients.

One of the limitations of the study was the lack of contrast of statistical hypotheses, in addition to the fact that, being a study in persons with social security, it is subject to selection bias and lack of information in the electronic file; for this reason, its representativeness may be restricted.

Conclusions

Relevant clinical-epidemiological factors present in breast cancer patients were identified, such as age, gender, presence of comorbidities such as DM2, and overweight. A decrease in breast cancer cases was observed from 2019 to 2021, which could be explained due to the mammography service suspension during the peak months of COVID-19 pandemic transmission.

It is essential to strengthen the primary care level through health pro-

motion, adopting healthy lifestyles, encouraging breast self-examination, as well as clinical examination by first contact medical personnel.

Authors Contribution

MJ S-M, II U-A: conceptualization, development, writing, data collection, data analysis, discussion of results, and writing. R R-R, T O-R, Y E-R: conceptualization, development, writing, discussion of results, ML P-S: conceptualization, development, writing, data analysis, discussion of results, and writing. All authors critically reviewed the paper and approved the publication of this paper.

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Conflicts of interest

The authors declare not having conflicts of interest.

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