Female breast symptoms in patients attended in the family medicine practice

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Background: there are few studies on breast symptoms (BS) in patients attended at primary care units in Mexico. The aim was to determine the frequency and types of BS overall and by age-group and establish which BS were related to diagnosis of breast cancer.
Methods: data from all female patients with breast disease related diagnosis, attended from 2006 to 2010, at the Family Medicine Unit 38, were collected. The frequencies of BS were determined by four age-groups (< 19, 20-49, 50-69, > 70 years) and likelihood ratios for breast cancer for each breast related symptom patient, with a 95 % confidence interval (CI).
Results: the most frequent BS in the study population were lump/mass (71.7 %) and breast pain (67.7 %) of all breast complaints, and they were more noted in women age group of 20-49 years. Overall, 120 women had breast cancer diagnosed with a median age of 53.51 + 12.7 years. Breast lump/mass had positive likelihood ratios for breast cancer 4.53 (95 % CI = 2.51-8.17) and breast pain had increased negative LR = 1.08 (95 % CI = 1.05-1.11).
Conclusions: breast lump/mass was the predominant presenting complaint among females with breast symptoms in our primary care unit, and it was associated with elevated positive likelihood of breast cancer.

Key words
breast symptoms
primary health care
breast neoplasms

Breast disease in women encompasses a spectrum of benign and malignant disorders. The most common breast problems for which female patients consult a family physician are breast pain, nipple discharge and palpable mass.[1] The frequency of breast cancer varies with the age of the patient and the presenting complaint. The age-standardized incidence and mortality rate for breast cancer in Mexico has increased since the past decade.[2] While cervical and uterine cancers are more commonly diagnosed, breast cancer is the leading cause of cancer-related death among women and also accounts for a large burden of premature death, since 60 % of women who died of breast cancer were aged between 30 and 59 years.[3] In Mexico, there are certain states, such as Jalisco, where breast cancer mortality has first place in malignant tumors in women (15.82 × 100 000 women) and where frequency is nearly similar to that of cervix uterine cancer (17.9 % *versus* 18.8 %;[4,5]). In this state, between 50 and 60 % of all cases of breast cancer are detected at advanced stages.[6]

A number of studies have focused on psychosocial and cognitive factors impacting patient diagnosis delay, including older age, low socioeconomic status, and limited knowledge regarding benefits of early detection. These studies have expressed fatalistic perspectives about breast cancer, such as benign attribution of symptoms, and lack of education about perceived seriousness of breast symptoms.[7-9] Comparably, there are relatively few studies of the presentation of breast symptoms in primary care units of Mexico and these have not been well described. Therefore, it is crucial that breast symptoms are appropriately investigated and describe the presentation to ensure that women who have breast cancer are accurately diagnosed and treated, and those who have breast symptoms but do not have breast cancer are reassured on the basis of appropriate testing.[10] With the purpose to inform and strengthen the preventive and early participation of the family physicians and health team, the aims of this study are to determine the frequency and types of breast complaints overall and by age-group and establish which breast related symptoms are most associated with a diagnosis of breast cancer.

Methods

Some data were collected from the department of clinical file of the Family Medicine Unit 38 (FMU 38) of *Instituto Mexicano del Seguro Social* in Tampico, Tamaulipas, Mexico. Those data provided us a list of all female patients from all ages in this Unit with breast disease related diagnosis, according to the International Classification of Diseases,[11] attended between

Sintomatología mamaria femenina en medicina familiar

Resumen

Introducción: en México, en las unidades del primer nivel hay pocos estudios sobre los síntomas mamarios. El objetivo fue determinar la frecuencia de los síntomas y los más asociados con el diagnóstico de cáncer.
Métodos: se recabó información de las pacientes atendidas de 2006 a 2010 con enfermedad de mama de una unidad de medicina familiar. Se determinaron las frecuencias de los síntomas mamarios en los grupos etarios < 19, 20-49, 50-69, > 70 años y los cocientes de probabilidad (LR) de cáncer de mama para cada síntoma, con un intervalo de confianza (IC) de 95 %.
Resultados: casi todas las quejas derivaron de una masa o tumoración (71.7 %) y dolor mamario (67.7 %). Presentaron cáncer de mama 120 mujeres, con un promedio de edad de 53.51 + 12.7 años. La tumoración/masa en el seno tuvo un LR+ para cáncer de mama de 4.53 (IC 95 % = 2.51-8.17) y un LR– para dolor mamario de 1.08, 95 % (IC 95 % = 1.05-1.11).
Conclusiones: la presentación de la tumoración/masa predominó como queja en nuestra unidad y estuvo asociada con un LR+ para cáncer de mama.

Palabras clave
enfermedades de la mama
atención primaria de salud
neoplasias de la mama

January 2006 to December 2010. We used data recorded from electronic file of the Information System of Family Medicine version 4.2. Those who had a record of the first breast symptoms described in their first consult with a final diagnosis of benign disease (absence of neoplasm), or had a confirmatory breast cancer diagnosis from the Regional General Hospital 6, *Instituto Mexicano del Seguro Social*, were also included. If the information was missing or incomplete in patients with breast cancer diagnosis, those patients were interviewed by telephone. The ethics and research committee 2802 approved the study and the information was coded to protect the privacy and confidentiality of patients (only the authors had access to that material).

Breast symptoms were classified in breast lump/mass, breast pain or tenderness, nipple complaint (discharge, inversion, ulceration), and other breast complaint (change in symmetry, skin color or texture changes, edema, induration, local hyperthermia).

Statistical analysis was exploratory and descriptive; SPSS version 12 (SPSS Inc, Chicago IL, USA) was used for analysis, which included the determination of the frequency of breast symptoms by 4 age-groups (< 19, 20-49, 50-69, > 70 years) and likelihood ratios for breast cancer for each breast related symptom patient, with 95 % confidence intervals.

Likelihood ratios can be useful in determining just how much concern for breast cancer should increase (or decrease) for a particular patient sign or symptom. A true-positive result occurred when a woman reported a breast-related reason for encounter and the episode resulted in a breast cancer diagnosis, whereas a false-positive result occurred when a woman reported a breast related reason for encounter and the episode did not result in a breast cancer diagnosis. A true negative result occurred when a woman did not report a breast related reason for encounter and did not have the episode result in a breast cancer diagnosis, whereas a false-negative result occurred when a woman did not report a breast-related reason for encounter, although the episode resulted in a breast cancer diagnosis. The positive likelihood ratio should be much larger than 1, with an LR+ > 3, markedly increasing the likelihood of clinical disease; the negative likelihood ratio should approach 0, with an LR– < 0.1, markedly decreasing the likelihood of disease.[12]

Results

Of the 7210 patients identified with breast disease related diagnosis, 2901 were first-time consultations. Of them, 197 male patients were excluded, 648 were

Table I Breast symptoms reported in consult by age-group and likelihood ratios based on final diagnosis of breast cancer

Breast symptoms	< 19 years	20-49 years	50-69 years	> 70 years	LR +		LR –	
	n	*n*	*n*	*n*	*n*	CI 95 %	*n*	CI 95 %
Breast lump/mass	107	941	281	30	4.53	2.51-8.17	0.93	0.92-0.95
Breast pain	99	952	268	23	0.31	0.21-0.44	1.08	1.05-1.11
Nipple complaint	8	202	45	8	3.13	2.18-4.50	0.89	0.85-0.94
Other breast complaint	16	65	16	4	3.39	2.14-5.37	0.86	0.79-0.95

CI = confidence interval, LR+ = positive likelihood ratio, LR– = negative likelihood ratio

not eligible because they did not record breast related symptoms, and 12 patients with breast cancer diagnosis did not have contact because they had wrong address, phone number or they were dead. In total, 2044 files were included in the study. The most frequent complaints in the study population were lump/mass (*n* = 1467, 71.7 %) and breast pain (*n* = 1387, 67.7 %); of all breast complaints, these symptoms were more noted in women age group of 20-49 years. Overall, 120 of the 2044 women had breast cancer diagnosed with a median age of 53.51 + 12.7 years, range 25-87 years. The first symptom presented was lump/mass (*n* = 108, 90 %), and it followed breast pain (*n* = 45, 37 %), nipple complaint (*n* = 38, 31 %) and other breast complaint (*n* = 18, 15 %). Most of breast cancer occurred in women over 40 years (104 cases).

Likelihood ratios for breast symptoms reported in a consult to a family physician, and based on a final diagnosis of breast cancer, are shown in table I. We found a positive likelihood ratio for cancer in breast lump/mass 4.53 (95 % CI; 2.51-8.17). Nipple complaint (LR+ = 3.13; 95 % CI, 2.18-4.5) and other breast complaints (LR+ = 3.39; 95 % CI, 2.14-5.37) have the same likelihood ratios of having breast cancer diagnosed. Patients who reported having breast pain didn't have a positive likelihood ratio for breast cancer (0.31; 95 % CI; 0.21-0.44), and patients who didn't report breast pain showed increased negative likelihood ratio (LR– = 1.08; 95 % CI, 1.05-1.11) for breast cancer.

Discussion

In this study, a lump or mass in the breast was the main reason that prompted women to consult the family physician. A 71.7 % of women reported a palpable mass in breast, and among women with diagnosis of cancer this figure was 90 %. Fibroadenomas and cysts are the most common causes of benign breast masses.[13] Although 90 % or more of palpable breast masses in women from 20 to 50 years are benign, excluding breast cancer is crucial in the assessment of these masses.[14] The findings in the study confirm that a lump is the predominant cause in women who are seeking care in our primary care unit. Lumps are associated with elevated positive likelihood ratio for breast cancer. Breast pain is another common complaint in patients reporting at our family physician. It is more common in premenopausal women than in postmenopausal women. It may be cyclical or noncyclical and it is rarely a presenting symptom of breast cancer.[15] In the study of Romero *et al*,[16] breast pain was reported in 150 female patients in Mexico. Of these, only one patient had breast cancer. Amaro *et al*,[17] reported that of 84 premenopausal and 84 postmenopausal women (of the FMU 94), none of these showed a correlation between risk factors for breast cancer and clinical findings of the breast examination. In an interesting finding, patients showed an increased negative likelihood ratio for breast cancer: only 37 % of the patients with breast cancer reported breast pain and the other 63 % (*n* = 75) reported that they didn't have breast pain. In comparison, the positive likelihood ratios for nipple complaint and other breast complaints are the same and less comparable to breast lump/mass.

The family physicians have a big challenge in breast symptoms assessment of women seeking daily care, making early referrals to the breast clinic according to our clinical practice guidelines.[18,19] Thereby, they could ensure breast cancer is diagnosed and treated promptly to improve the prognosis and survival of the patients. Newton *et al*.[20] reported that approximately one third of symptomatic patients required referral to a specialist. Also, 34 general practitioners in South Wales reported a referral rate of 55 %.[21] Donnelly[22] diagnosed cancer in 4 of the 46 patients referred by their general practitioners by having a lump, but they denied presenting it themselves. The study of Bright *et al*.[23] found in 32 Mexican women with confirmed stage I-IIIC of breast cancer an average time interval of 1.8 months from symptom onset to first primary care consultation, with an additional average of 6.6 months from first primary care consultation to confirmed diagnosis, and 0.6 months form diagnosis to treatment initiation. These patients underwent an average of 7.9 clinic visits before confirmed diagnosis and this represents a protracted referral time from primary to specialty care accounts for the bulk of delay. The predominant risk factors for patient delays in breast cancer diagnosis include lack of awareness that breast symptoms could be due to cancer and lack of awareness of personal risk. The primary care physician should start clinical evaluation of most patients with a breast complaint and determine their personal risk for breast cancer with a complete medical record and physical examination. He must record all data of patient narrative on computer and describe management actions for specific conditions as well as requesting the appropriate screening. Family physicians have the mission of promoting health education in awareness of breast symptoms such as breast lumps as a risk factor for breast cancer.

The study presents some limitations, such as misclassification of patient reported symptoms during primary care consultation, because we based our study on medical records of past years and there is no way to know if a mistake was made while recording the consult, and we did not considered other variables, as, for example, risk factors for breast cancer. We didn't find other studies on breast symptoms reported in family practice in Mexico to compare our results. Future

studies might benefit from better prospective design, and large study populations to ensure adequate knowledge in Mexican family practice.

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