

Guidelines for International Breast Health and Cancer Control–Implementation

Supplement to Cancer

Breast Cancer in Latin America

Results of the Latin American and Caribbean Society of Medical Oncology/Breast Cancer Research Foundation Expert Survey

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The incidence of breast cancer in Latin American countries is lower than that in more developed countries, whereas the mortality rate is higher. These differences probably are related to differences in screening strategies and access to treatment. Population-based data are needed to make informed decisions. A 65-question telephone survey that included 100 breast cancer experts from 12 Latin American countries was conducted in 2006 as an exploratory analysis of the current state of breast cancer treatment in these regions at both at the country level and at the center level. Greater than 90% of countries had no national law or guideline for mammography screening. The access rate to mammography was 66.3% at the country level and 47% at the center level. Variation in care based on level (country vs center) was indicated for the timing of treatment after diagnosis, timing from initial diagnosis to treatment, and the time from surgery to initial chemotherapy. However, the more sophisticated diagnostic testing for hormone receptors and biomarkers were available at most centers (>80%), and, overall, nearly 80% of patients started treatment within 3 months of diagnosis. Variation in care between breast cancer care at the center level versus the country level indicated a need for national cancer care programs. Alternative data collection strategies for understanding the state of breast cancer control programs in developing countries can help identify areas of improvement. *Cancer* 2008;113(8 suppl):2359–65. © 2008 American Cancer Society.

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Latin America and the Caribbean represent approximately 10% of the population of developing countries and comprise 10% of the world's new cancer cases each year.¹ However, the incidence of breast cancer (defined as the number of new cases in a population per unit of time) in Latin American countries is lower than that in more developed countries. The greatest incidence is observed in Uruguay and Argentina, with 110.9 and 88.1 cases per 100,000 inhabitants, respectively, compared with 143.8 cases per 100,000 inhabitants in the United States.¹

According to projections for the year 2050, the incidence and mortality rates in developing countries are expected to increase at a significantly greater rate than in developed countries.² This predicted increase is related to population growth, aging, lifestyle changes, and the worldwide tendency for migration to urban communities; it also may be related to difficulties in the application of preventive plans and early diagnosis programs in poorer countries. Population expansion alone will have a significant impact on the number of individuals requesting healthcare services. Projections in Latin America and the Caribbean for the year 2025 predict an increase in healthcare costs of approximately 47%.³ Currently, there are enormous differences in healthcare expenditures between developed and developing countries; developed countries spend nearly 10% of their gross domestic product on healthcare, whereas poorer countries spend 5% to 6% or less.³ Reported differences in tumor stage at presentation and available treatment options between developed and developing countries may have an impact on both expenditures and outcomes.⁴⁻⁷ The lack of data on the socioeconomic status of cancer patients limits our understanding of the contributions of economics to cancer incidence and mortality rates, however socioeconomic status appears to be related to breast cancer incidence, mortality, and survival rates.⁸

Although breast cancer incidence is higher in developed countries, the mortality rate is lower than in developing countries.⁹ These differences likely are related to differences in screening strategies and access to treatment.¹⁰ The objective of the current investigation was to survey expert opinion leaders in Latin America and the Caribbean for the purpose of performing an exploratory analysis on the current state of breast cancer care in these regions. This investigation forms the basis for ongoing studies, with the ultimate goals of establishing minimal clinical recommendations or guidelines for breast cancer and to propose projects or programs, based on a more informed position, that take advantage of the available resources according to feasible objectives.

MATERIALS AND METHODS

This study was designed by an advisory board of the Latin American and Caribbean Society of Medical Oncology (SLACOM) that was composed of 5 medical oncologists who prepared a survey of 65 questions on epidemiology, screening, diagnosis, treatment, research, palliative care, and medical education. Input was requested from representatives from the countries that were included in the investigation (Argentina, Bolivia, Brazil, Chile, Colombia, Honduras, Mexico, Panama, Paraguay, Peru, Uruguay, and Venezuela) to ensure that local characteristics were captured in the survey.¹¹

In total, 100 breast cancer leaders from 12 different countries were included in the telephone survey. Breast cancer leaders were defined as follows: a medical director from a main institute or cancer center in the country or region; presidents or past presidents of scientific societies related to breast cancer care; and well recognized specialists or experts proposed by other opinion leaders. The number of specialists surveyed in each country was proportional to the country population, with the countries divided into 3 categories as follows: large (Mexico, Brazil, and Argentina), medium (Peru, Chile, Colombia, Venezuela, Paraguay, and Uruguay), and small (Panama, Honduras, and Bolivia). A further division was made according to the type of specialty as follows: medical oncologists (30%-60%), gynecologists or breast cancer surgeons (20%-35%), and radiotherapists (10%-15%).

Before the initial survey, participants were contacted and invited to participate. A 30- to 40-minute telephone interview was conducted by a physician who specialized in epidemiology surveys. If necessary, a second telephone or personal interview was conducted to complete the 65 questions (see Table 1 for selected survey questions). Participants were asked to evaluate breast cancer care in their own center and in their own country. Results were analyzed using simple descriptive statistics.

RESULTS

Epidemiology: Cancer Registries

Nearly 75% of the interviewed experts stated that some type of population-based cancer registry with incidence data from the last 5 years was available. There are country-based pathology registries in Mexico, Paraguay, Panama, Uruguay, and Venezuela. Other countries have only provincial or municipal registries (6 in Argentina, 1 in Brazil, 2 in Chile, 1 in Colombia, 2 in Honduras, and 3 in Peru).

TABLE 1
Selected Survey Questions and Answer Choices by Topic

| Topic | Survey Question (Answer Choices)* |
|---|--|
| Cancer registry | Do you know if in your COUNTRY there is some type of population-based cancer registry that may have supplied incidence data of the last 5 years? (Yes, No, Do not know) |
| Access to mammography | Is there any law or regulation in your country forcing periodical mammographic screening and covering the WHOLE country? (Yes, No, Do not know) |
| Origin of initial diagnostic suspicion | In your CENTER [COUNTRY], in the majority of the cases , who determines the initial diagnostic suspicion of breast cancer? (Patient, Physician [any specialty], Early detection program, Do not know) |
| First specialist consulted upon suspicion | In your CENTER [COUNTRY], which of the following specialists is contacted the most frequently in case of an initial diagnostic suspicion of breast cancer? (General physician; Breast surgeon or gynecologist; General surgeon; Do not know) |
| Delay between mammographic/clinical suspicion and histopathologic confirmation | In your CENTER [COUNTRY], how long, on average , do you estimate is the lapse between the mammographic or clinical suspicion and the histopathologic confirmation? (Do not know, Less than 1 mo, Between 1 mo and 3 mo, >3 Mo) |
| Hormone receptor markers available | In your CENTER [COUNTRY], are resources available to perform hormone receptors determinations? (Yes, No, Do not know, <25%, 25%-50%, 50%-75%, >75%) |
| Biologic markers: (Ki-67, Her-B2) | In your CENTER [COUNTRY], is there availability to perform other molecular determinations (Ki-67, Her-2B, ...)? (Yes, No, Do not know) |
| Delay from diagnosis to surgery or primary systemic treatment | In your CENTER [COUNTRY], how much time do you estimate, in the majority of cases, elapses between the final diagnosis (pathology) and the surgery or specific presurgery treatment (chemotherapy, radiotherapy) if the latter is performed? (<1 Mo, Between 1 mo and 3 mo; > 3 mo, Do not know) |
| Delay from surgery to first treatment (hormone therapy, chemotherapy, radiotherapy) | In your CENTER [COUNTRY], how much time do you estimate, in the majority of cases, elapses between the surgery and the specific hormone, chemotherapy, or radiotherapy treatment? (<1 mo, Between 1 mo and 3 mo; > 3 mo, Do not know) |
| First surgical treatment (stages I, II, and IIIA) | 1) In your CENTER [COUNTRY], is the surgery, in the majority of cases, the first treatment proposed? Stage I (Yes, No, Do not know), stage II (Yes, No, Do not know), stage IIIA (Yes, No, Do not know). 2) Which of the following specialists performs this first surgery in the majority of cases at your CENTER [COUNTRY]? Gynecologist/breast surgeon (<25%, 25%-50%, 50%-75%, >75%); General surgeon (<25%, 25%-50%, 50%-75%, >75%) |
| Sentinel lymph node dissection | In your CENTER [COUNTRY], is the search for sentinel lymph node carried out? (Do not know, Yes, No-not submitted to other institutions, No-but systematically submitted to other institutions, No-do not know if submitted to other institutions) |
| Adjuvant chemotherapy before surgery | In your CENTER [COUNTRY], in the majority of operable patients, is chemotherapy proposed before the surgery and, in such cases, who proposes it? Stage I-II (Do not know, Not proposed, Proposed by oncologist, Proposed by surgeon, Proposed by gynecologists, Proposed by breast surgeon, Proposed but do not know by whom) |
| Costs of chemotherapy and hormone therapy | In your CENTER [COUNTRY], in the majority of cases, who covers the greater part of the cost ($\geq 80\%$) for the chemotherapy/hormone therapy? (Health insurance/HMO, Patient [own pocket], Do not know) |
| Anthracycline-based chemotherapy | In the majority of cases at your CENTER [COUNTRY], is the chemotherapy based in anthracyclines? (Yes, No, Do not know) |
| Tamoxifen treatment | In your CENTER [COUNTRY], what percentage of patients do you estimate receives tamoxifen? (>95%, 80%-95%, <80%, Do not know) |
| Palliative care | In your CENTER [COUNTRY], what is the availability of opioids for the majority of terminal patients? (Do not know, Not available, Available but do not know if received, Available and generally received, Available but generally not received) |
| Physician autonomy | In your CENTER [COUNTRY], is the choice of adjuvant or palliative treatment free for the professional or preset by the medical coverage system (drugs bank, oncology vademecum), in >80% of cases ? Adjuvant hormone therapy/chemotherapy (Preset by coverage; Free choice; Do not know) |
| Follow-up | Who does the follow-up for the majority of patients in your CENTER [COUNTRY]? (Breast surgeon/Gynecologist/Surgeon, Oncologist, Both, None) |
| Research level | In your COUNTRY, how would you qualify the development of the [clinical-epidemiological research] [basic research] on breast cancer? (Insufficient, Sufficient, Do not know) |
| Research reasons | In your COUNTRY, which do you consider are the main reasons that make the (clinical-epidemiological research/basic research) on breast cancer insufficient? (Lack of support to the institutions, Lack of time of the specialists, Lack of interest on behalf of the specialist, Lack of training in research, Insufficient economic remuneration, Lack of structure, Obstacles in regulatory mechanisms, Other reasons, Do not know) <i>Mark all the options you consider in the corresponding gray cells. In case of 'Other reasons,' please specify under "Remarks"</i> |
| Research support | In your COUNTRY, where are the majority of the clinical-epidemiological research activities in breast cancer carried out? (Public centers, Private centers, National oncology group, Regional oncology group, Universities) |

Her-B2 indicates human epidermal growth factor receptor B2; HMO, health maintenance organization.

* English version, only for publication. The original survey was in Spanish.

TABLE 2
Breast Cancer Screening and Diagnosis by Country and Center

| Question Topic | Answer | % Country (n=95) | % Center (n=100) |
|---|---------------------------------------|---------------------|---------------------|
| Access to mammography | All the population | 66 | 47 |
| | High and medium income | 32 | 52 |
| | Low income | 0 | 1 |
| | Unknown | 2 | 0 |
| Origin of initial diagnostic suspicion | Patient | 79 | 48 |
| | Physician | 19 | 49 |
| | Screening | 0 | 2 |
| | Unknown | 2 | 1 |
| First specialist consulted upon suspicion | Breast cancer surgeon or gynecologist | 83 | 82 |
| | Surgeon | 4 | 4 |
| | Physician | 13 | 9 |
| | Oncologist | 0 | 5 |
| Delay between mammographic or clinical suspicion and histopathologic confirmation | <1 mo | 2 | 46 |
| | 1-3 mo | 60 | 45 |
| | >3 mo | 32 | 7 |
| | Unknown | 6 | 2 |
| Hormone receptor markers available | Yes | 52 | 90 |
| | No | 42 | 10 |
| | Unknown | 6 | 0 |
| Molecular samples available (Ki-67, Her-B2) | Yes | 5 | 83 |
| | No | 90 | 17 |
| | Unknown | 5 | 0 |

Her-B2 indicates human epidermal growth factor receptor B2.

Breast Cancer Screening and Diagnosis

Screening programs

More than 90% of respondents indicated that there were no national laws or guidelines in their country for mandatory mammographic screening. Access to mammography reportedly was available to 66% of patients at the country level and 47% of patients at the center level. (Table 2).

Initial suspicion of cancer

Seventy-nine percent of respondents indicated that the initial suspicion of cancer was prompted by the patient, and 19% indicated that the cancer was detected by the attending physician. The first specialist seen by a patient was a gynecologist or a breast cancer surgeon according to 82% or 83% of respondents, respectively, and similar results were reported at the center and country levels (Table 2).

A delay <3 months between the suspicion of cancer and a mammographic or clinical examination months was reported by 62% of respondents at the country level and by 91% of respondents at the center level (Table 2). Hormone receptor status and biologic marker determinations (human epidermal

TABLE 3
Treatment Related Survey Questions by Country and Center

| Question Topic | Answer | % Country (n=95) | % Center (n=100) |
|---|---------|---------------------|---------------------|
| Delay from diagnosis to surgery or primary systemic treatment | <1 mo | 15 | 81 |
| | 1-3 mo | 76 | 18 |
| | >3 mo | 6 | 0 |
| | Unknown | 3 | 1 |
| Delay from surgery to first treatment (hormonal, QT, RT) | <1 mo | 20 | 76 |
| | 1-3 mo | 69 | 22 |
| | >3 mo | 5 | 1 |
| | Unknown | 6 | 1 |
| Is surgery first treatment at stage I? | Yes | 100 | 100 |
| | No | 0 | 0 |
| Is surgery first treatment at stage II? | Yes | 100 | 99 |
| | No | 0 | 1 |
| Is surgery first treatment at stage IIIA? | Yes | 5 | 2 |
| | No | 90 | 98 |
| | Unknown | 5 | 0 |

growth factor receptor 2/*neu* [HER-2/*neu*], Ki-67) reportedly were considered available at the center level by 83% and 90% of respondents, respectively.

Treatment

A time <1 month from diagnosis to first treatment (either surgery or adjuvant chemotherapy) was reported by 15% of respondents at the country level and by 81% of respondents at the center level. However, the majority of patients the country and center levels began their treatment in <3 months (91% and 99%, respectively) (Table 3).

A time <1 month from surgery to the initiation of chemotherapy was reported by 20% of respondents at the country level and by 76% of respondents at the center level. Nevertheless, almost all patients started chemotherapy during their first 3 months after surgery (89% and 98%, respectively) (Table 3).

The first treatment modality for stage I and II breast cancer was surgery according to 100% of respondents at both the country and center levels. The first treatment modality for stage IIIA breast cancer was neoadjuvant chemotherapy according to >90% of specialists. Mastectomy was reported as a common surgical option (>50%) but usually was performed by general surgeons or gynecologists (Table 3).

Sentinel lymph-node dissection was performed at 71% of centers according to those surveyed. The administration of adjuvant chemotherapy was performed by an oncologist at the country level according to 85% of respondents compared with 54% at the center level, which may be attributed to the increas-

TABLE 4
Cost and Accepted Treatments From Survey Questions by Country and Center

| Question Topic | Answer | % Country (n=95) | % Center (n=100) |
|--|--------------------------------------|---------------------|---------------------|
| Follow-up physician | Oncologist | 73 | 24 |
| | Surgeons or breast cancer specialist | 10 | 14 |
| | Surgeons and oncologist | 17 | 61 |
| Palliative care available | Yes | 82 | 93 |
| | No | 2 | 2 |
| | Unknown | 7 | 0 |
| | Available but not given | 3 | 5 |
| | Available but does not know if given | 6 | 0 |
| Anthracycline-based chemotherapy available | Yes | 96 | 99 |
| | No | 0 | 0 |
| | Unknown | 4 | 1 |
| Tamoxifen treatment available | >95% of patients | 48 | 35 |
| | 80% to 95% | 38 | 46 |
| | <80% | 7 | 18 |
| | Unknown | 6 | 1 |
| Payer of chemotherapy/hormone therapy | Government | 67 | 28 |
| | Health insurance | 13 | 53 |
| | Patient | 17 | 19 |
| | Unknown | 3 | 0 |

ing participation of tumor boards (38%) in the decision to offer multimodality treatment at more developed institutions.

Cost and Accepted Treatments

Systemic treatments

For systemic treatments, costs estimates to be covered mainly by governments were 67% at the country level compared with 28% at the center level. Patient participation in payment was 17% at the country level and 19% at the center level. Health insurance company participation was 13% at the country level and 53% at the center level (Table 4).

Accepted treatments

Chemotherapy treatments with anthracyclines are accepted widely both at the country level (96%) and the center level (99%). Tamoxifen also is used widely at the country level: >95% of patients receive it in 48% of responding countries. At the center level, >95% of patients receive tamoxifen at 35% of centers (Table 4). The difference probably is because of the use, at the center level, of other, new-generation hormone treatment alternatives.

Physician autonomy in treatment choices

The reported ability of a physician to select an appropriate adjuvant treatment (free selection rather than predetermined by coverage or insurance) was 53% at the country level and 74% at the center level.

Follow-up

At the country level, follow-up is performed mainly by oncologists (73%), and in only 10% of countries is it performed by surgeons or breast cancer specialists. At the center level, 24% of follow-up is performed by oncologists alone, 14% is performed by surgeons or breast cancer specialists, and 61% is performed by both surgeons and oncologists (Table 4).

Palliative care

Palliative care and access to opioids and narcotics were considered available by 82% of respondents at the country level and by 93% of respondents at the center level (Table 4).

Research and Education

Nearly 94% of the surveyed experts considered breast cancer clinical-epidemiologic research development insufficient in their country. The main identified reasons were insufficient economic support (78.7%) and lack of available time (61.8%). A similar response was observed for basic research: Eighty-three percent of the experts considered the development of basic research on breast cancer insufficient. The majority of research activities were performed in public, private, or public-private centers (46.3%, 16.8%, and 22.1%, respectively), with only approximately 1% attributed to universities or cooperative groups.

DISCUSSION

Breast cancer incidence and mortality are increasing in developing countries.^{12,13} This expanding illness burden is a problem that requires a concerted global response, joining country and regional organizations together with international or global support and advice. Latin America has almost 10% of the world's breast cancer incidence and mortality, and the availability of regional information about the state of breast cancer care is essential to perform informed program planning. There is a general lack of objective information available because of poor or absent cancer registries, limited clinical and scientific data, and missing or poor-quality governmental data. The lack of epidemiologic data, along with a lack of political commitment, are 2 critical issues in Latin America, with only a few exceptions mainly in small countries. Alternative methods to obtain information are needed, and this study presents a tentative approximation from the opinions of experts with many years of experience in treating patients with breast cancer.

The correlation between physicians' perception of reality and governmental programs, normatives, or laws will be covered extensively in another article (SLACOM/Breast Cancer Research Foundation II), in which a complete review of country capacity in the region that has been studied will be compared with the results from this survey. This first article is focused only on the description of breast cancer in the region from the experts' perspective.

Concerning breast cancer prevention, the low commitment to mammographic screening indicated in the survey is an important concern, because low compliance is associated with a high frequency of breast cancer detection by the patient, who usually presents at diagnosis with more advanced stage disease. The survey indicated a high proportion (79%) of patient-detected breast cancer. Conversely, the survey indicated that postdiagnostic screening with hormone receptors and biologic marker determinations (HER-2/*neu*, Ki-67) is available at most centers, suggesting an emphasis on diagnostic and treatment-based healthcare systems. Mastectomy was considered a common surgical option, but it generally was performed by general surgeons or gynecologists rather than by breast cancer specialists.

A delay <3 months between the suspicion of cancer and a mammographic or clinical examination was reported more often at the center level (92%) than at the country level (62%), indicating a clear perceived variation in care based on the treatment location or the healthcare system. The administration of adjuvant chemotherapy by an oncologist was

more likely to occur at the country level than at the center level, which may reflect the increasing participation of tumor boards (38%) in the decision to offer multimodality treatment at more developed institutions. The short interval observed between diagnosis and treatment may be attributed to the therapeutic focus, medical education, and organization of the healthcare systems.

Clinical and epidemiologic cancer research is fundamental for advancement in cancer care; and, for this reason, data on patients from different parts of the world should be mandatory, and research should be encouraged in developing countries. Our survey demonstrated that the majority of research activities are attributed to public, private, or public-private centers (46.3%, 16.8%, and 22.1%, respectively), with only 1% attributed to universities or cooperative groups. These numbers clearly suggest that there is poor support from governments or governmental bodies for cancer research in Latin American and Caribbean countries.

The survey results demonstrated no great differences between the centers and the countries with regard to therapeutic standards, suggesting that medical education could be considered adequate. Our survey suggests that adequate palliative care for patients (chemotherapy, hormone therapy, and morphine) is available. It is important to note that the current study results are limited by potential expert bias and the lack of ability to validate expert opinion with complementary clinical or scientific data.

The challenge for the future is to promote breast cancer control on a global basis and in a comprehensive manner. National cancer plans and adequate epidemiologic data are needed for all countries and are considered an urgent need according to the World Health Organization¹⁴ and the International Union Against Cancer¹⁵ recommendations. Global and local political commitment is essential to ensure that these epidemiologic cancer programs are in place in every country.

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