

# TIME BETWEEN THE DAIGNOSTIC AND THERAPEUTIC STEPS OF BREAST CANCER IN THE SUS

Luciana Martins da Rosa\*  
Vera Radünz\*\*  
Odaléa Maria Brüggemann\*\*\*

## ABSTRACT

Descriptive research, with quantitative approach, which aims to describe the time-interval from diagnosis to therapeutic treatment in breast cancer in women treated by the oncologic institution of the public health system of Santa Catarina/Brazil and to characterize the socio demographic profile of these women. The data were collected in all of the medical records of women met exclusively by the public health system (24), in 2009. The data were analyzed by descriptive statistics, 41,5% of women were in the age group 40-49 years, had elementary school, were housewives, presented stage III of the disease. The time interval of the mammography at the beginning of the treatment of the disease fluctuated between 31 and 233 days, between the surgery and the adjuvance 21 and 136 days. Intervals found do not meet scientific recommendation. The biggest time interval was found in the steps to perform the biopsy, to initiate the treatment and adjuvant chemotherapy. The results point to the need for the adoption of strategies for the scientifically recommended time intervals. Those strategies should include fast process in the realization of mammograms, biopsies and surgery to remove the breast carcinoma.

**Keywords:** Breast Neoplasms. Oncology. Delayed Diagnosis.

## INTRODUCTION

Breast cancer remains the most incident cancer in women. In 2008, the disease involved 1.284.155 women and caused 458.503 deaths in the world. In Brazil, in the same year, the incidence reached 42.566 new cases and 12.573 deaths<sup>(1)</sup>.

Late diagnosis of the disease is vital to the progression of the disease (advanced staging) and for poor prognoses. So, the detection and early treatment are still the best option for the control of the disease<sup>(2-5)</sup>.

In specialized institutions in the oncologic attendance of Santa Catarina/Brazil, the distribution of cases by clinic staging for breast cancer in the year 2002 and 2008 presented these percentages: stage *in situ* – 3,9% and 2,1%; stage I – 17,5% and 25,5%; II – 36,8% and 23,4%; III – 21,1% and 20,8%; IV – 11,9% and 6,1%<sup>(6,7)</sup> (data between 2003 and 2007 were not found registration by Cancer Hospital Registration until the moment of this study).

It should be noted that women diagnosed

from stage II have local advanced disease, lymph nodule and metastatic involvement<sup>(8)</sup>, which may hinder or prevent healing treatments.

In the State of Santa Catarina, the distribution of cases by clinical staging for breast cancer in the year of 2008 manifested itself with the following percentages: stage *in situ* – 1,5%; stage I – 18%; II – 30%; III – 17%; IV – 5,6%; without information – 27%<sup>(7)</sup>.

So, in the advanced staging of breast cancer identified in institution specialized in oncological care of Santa Catarina/Brazil, we make the question: What is the time interval between the diagnostic and therapeutic steps for women attended exclusively by the Unified Health System (SUS)? Does this time interval meet the recommended scientifically?

We emphasize that, to reduce mortality from breast cancer, it is recommended that every woman with a palpable nodule in the breast and other suspicious alterations entitled to receive diagnosis within 60 days, and among the first signs and symptoms of the disease and the beginning of the treatment the time should not exceed three months<sup>(8)</sup>. Adjuvant chemotherapy

\*Nurse. PhD in Nursing. Specialist in Oncology nursing. Professor, Department of Nursing, Universidade Federal de Santa Catarina. Member of the Research Group Caring & Comforting - Postgraduate Program in Nursing, Universidade Federal de Santa Catarina. Florianópolis. Santa Catarina. Brazil. Email: luciana.m.rosa@ufsc.br.

\*\*Nurse. PhD in Nursing. Professor, Department and Postgraduate Program in Nursing, Universidade Federal de Santa Catarina. Leader of the Research Group Caring & Comforting. Florianópolis. Santa Catarina. Brazil.

\*\*\*Nurse. PhD in Nursing. PhD in Gynecology. Professor, Department and Postgraduate Program in Nursing, Universidade Federal de Santa Catarina. CNPq researcher. Florianópolis. Santa Catarina. Brazil.

in breast cancer must be performed within 60 days after the surgery and adjuvant radiation in up to 120 days<sup>(8-9)</sup>.

Therefore, the objective of this study is to describe the time interval between the diagnostic and therapeutic steps of breast cancer in women assisted in the SUS in oncology institution of Santa Catarina/Brazil and characterize the socio-demographic profile of these women.

We believe that the knowledge of that reality contribute to the adoption of measures that might reduce the degree of the disease and improve the quality of life and survival of women who will still receive the diagnosis of breast cancer.

## METHODOLOGY

Descriptive study, with a quantitative approach, carried out in an institution specialized in oncological care of Santa Catarina, approved by the Research Ethics Committee of the study setting, under the opinion 009/2010. This institution was chosen as reference in oncological care in the State of Santa Catarina.

The data collection was carried out from May to November of 2010.

Women with breast cancer who began the treatment of the disease in the year 2009, were included, attended exclusively by SUS (from diagnosis to treatment), according to records found in the medical records (professional records and examination reports) and dealt with the following therapeutic sequences: neo-adjuvant chemotherapy (NC), followed by surgery to remove the breast and neoplastic nodule and adjuvant chemotherapy (AQ) or adjuvant radiotherapy (AR), called in this study by therapeutic scheme I or surgery to remove the breast neoplastic nodule followed by AC or AR, called in this study, therapeutic scheme II. The exclusive service by SUS was established as inclusion criteria so that it can recognize the reality of service time by the public health system and therapeutic sequences, therapeutic scheme I and II, to be the most frequent sequences for the breast cancer in SUS.

The instrument designed for collection and registration of data was tested with five medical records. In this pre-test, it was verified the need for inclusion of the variables: "date of the beginning of adjuvant radiation therapy". To do

so, it was asked to include amendment to the Research Ethics Committee, approved by the opinion 020/2010.

So, it was set for the collection of data of the following variables: age, origin, education, profession/occupation, stage of disease, mammography or ultrasound date, biopsy date, biopsy report date, surgery date, start and end date of neo-adjuvant chemotherapy, start date of the adjuvant chemotherapy and start date of the adjuvant radiation.

For the selection of medical records, it was asked for the Billing Area of the institution, list of codes of the High Cost Procedures Authorization (APACs) which register the NC and AC, this being the only way of identification of patient records, in the existing database at the institution. From these codes, it was requested for the Computer Division, a list of names of women with breast cancer who began the treatment of the disease in the year 2009 to then be localized the women's records.

The list provided by the Computer Division totaled 138 women, where 86 of them registered therapeutic sequences included in this study, but only 24 had performed all the steps only by SUS.

After the collection, the data were entered into the database in the Microsoft Excel Program. After processing, they were analyzed by descriptive statistics, including calculations of time intervals between the various diagnostic and therapeutic steps. Considering the lack of data in some records and the limited number of attendance performed exclusively by SUS, it was decided to present the minimum and maximum time found between the diagnostic and therapeutic steps. The implementation of the measures of central tendency was only possible in the results related to the time interval between the surgery and adjuvance.

## RESULTS AND DISCUSSION

The age of women with breast cancer has fluctuated between 25 and 78 years. The age group of 40 to 49 years was the one that presented the highest percentage (41,5%), followed by the age group of 50 to 59 years (29,2%). Other socio-demographic variables that have obtained the highest percentages were:

women with schooling up to the elementary school (54,2%), profession/occupations involving domestic activities (45,8%), stage III (45,8%), followed by the stage II (33,4%). These and other findings are presented in Table 1.

The most frequent age group of women studied differs from international studies that indicate the age of group of 50 to 60 years as the most incident. Studies show that increasing age represents a risk factor for breast cancer, so that the incidence doubles every ten years longer lived until menopause<sup>(10)</sup>. The American Cancer Society published that 95% of breast cancer cases are diagnosed in women 40 years old or more<sup>(11)</sup>, this requires specific health policies for women over 40 years.

As for education, the reality of being the most frequent elementary school among women investigated, it confirms the indication of

epidemiological that show that the lower the educational level, the greater the stages of diseases and lower survival rates<sup>(12)</sup>.

The study that included women with breast cancer met in this scenario study institution points out that, in relation to survival stratified by level of schooling, women with upper level show better overall survival at five years (92,2%), when compared to women with high school (84%), elementary school (73,6%) and illiterate (56%), where illiterate women had a 7,40 times risk of dying that those of higher level, and the ones with elementary school, with 3,76 times higher risk<sup>(12)</sup>. Comparing these results with the results of this study it was showed the risk of stratified survival rate reduction for education that women with education up to high school are exposed, when compared to women who have higher education.

**Table 1.** Socio-demographic data and staging of women with breast cancer.

| Variables                     | n  | %    |
|-------------------------------|----|------|
| <b>Age</b>                    |    |      |
| 20-29                         | 1  | 4,2  |
| 30-39                         | 3  | 12,5 |
| 40-49                         | 10 | 41,5 |
| 50-59                         | 7  | 29,2 |
| 60-69                         | 2  | 8,4  |
| 70-79                         | 1  | 4,2  |
| <b>Occupation</b>             |    |      |
| Housewife                     | 6  | 25,0 |
| ASG/housekeeper/house cleaner | 5  | 20,8 |
| Nurse Technician              | 3  | 12,5 |
| Nurse                         | 1  | 4,2  |
| Other occupations             | 8  | 33,3 |
| SRP                           | 1  | 4,2  |
| <b>Scholarship</b>            |    |      |
| Illiterate                    | 2  | 8,4  |
| Elementary school             | 13 | 54,1 |
| High School                   | 6  | 25,0 |
| Higher education              | 3  | 12,5 |
| <b>Stages degree</b>          |    |      |
| I                             | 5  | 20,8 |
| II                            | 8  | 33,4 |
| III                           | 11 | 45,8 |
| IV                            | 0  | 0,0  |



Comparing the stages of diseases found in this study with the stages for the year of 2008 (last record provided by RHC study scenario and Integrator RHC-INCA)<sup>(7)</sup>, it is observed raising of the percentage of stages II and III and decreased percentage of stage I. Stages *in situ* and IV were not found in this study. This finding suggests elevation of the staging of the disease. It is noted that women with breast cancer in stages II and III have tumors up to two inches and/or axillary lymph nodule involvement and then may present the dissemination of the disease to tissues near the breast, to the breast lymph nodules, beneath the collarbone and near the neck and, consequently, be subject to lower survival rates<sup>(13)</sup>.

The cities of origin of women were: Canelinha (4,2%); Garopaba, (4,2%); Governador Celso Ramos (12,5%); São José (12,5%); Palhoça (16,6%). Florianópolis had the higher percentage level, 50% of the cases.

Of the 24 investigated records, (100%), 16 (66,7%) showed no record of the date of the examination of image that diagnosed the disease; 10 (41,7%) did not provide the date of the collection of the material and/or receipt of the material by the laboratory; 11 (45,8%) did not record the date of the issuance of the report of the biopsies. These findings demonstrate failures in the system of registration of data on medical records of women with cancer in the study scenario, which made the use of inferential statistics for analysis of data.

Other studies, like this one, also present the lack of professional records hindering scientific research<sup>(9,14)</sup>, a reality that needs to be modified in order to contribute to the growth and development of the research in Brazil.

The therapeutic scheme I was held by seven women (29,2%) and therapeutic scheme II was carried out by 17 women (70,8%). The adjuvant chemotherapy was performed by 22 women (91,7%) and the adjuvant radiotherapy for 2 women (8,3%).

Table 2 presents time intervals (minimum and maximum between the various diagnostic and therapeutic steps lived by the women with breast cancer who did the therapeutic scheme I (7women). The time interval of image examination until the beginning of the neo-adjuvant treatment, therapeutic scheme I,

fluctuated from 31 to 182 years. The steps that define this time period refer mainly to the development of the breast biopsy and consultation with oncologist to start the neo-adjuvant chemotherapy. The maximum time found between surgery and adjuvance was 88 days.

Table 3 presents the time intervals (minimum and maximum between the various diagnostic and therapeutic steps experienced by women with breast cancer who underwent the therapeutic scheme II (14 women). The time interval of image examination until the beginning of the surgical treatment, therapeutic scheme II, fluctuated from 42 to 233 days. The steps that define this time period refer mainly to the development of the biopsy and the consultation with oncologist. The maximum time found between the surgery and the adjuvance was of 136 days.

Analyzing the results related to the maximum time interval between the image until the diagnosis examination (biopsy report was considered as a diagnosis of the disease), in the therapeutic scheme I and II, we find respectively 104 and 217 days, and for the beginning of the treatment, by neo-adjuvant or surgical therapy, we found 216 and 281 days, and comparing them with the scientific recommendations that indicate that the diagnosis must be held within 60 days and the beginning of the treatment in up to three month<sup>(8-9)</sup>, it is observed that, for some women, the beginning of treatment exceeds the recommended. In this way, the time delays, findings in this study, contribute to justify the advanced staging of the disease actually investigated and indicate that women served in this time interval may have survival rates decreased.

The detection and the beginning premature of cancer treatment are related to higher cure rate of women with breast cancer. The faster is the institution of the treatment of the disease (no metastatic period), the greater the chance to be a curative surgery and to not happen dissemination of the disease, and lower will be the stages of the disease<sup>(15)</sup>.

Delay in diagnosis is associated with higher with higher risk of lymph nodule metastasis and tumor size, determinants of staging<sup>(16)</sup>. Therefore, the use of methods of early detection

and screening of breast cancer continue to be extremely important for early diagnosis and

increased rate of healing and survival of women with breast cancer<sup>(17)</sup>.

**Table 2.** Time intervals between diagnostic steps, neo-adjuvant chemotherapy, surgery and chemotherapy or adjuvant radiation – Therapeutic scheme I. Florianópolis/SC/Brazil. 2010.

| Diagnostic Steps  | Time Intervals         |                        |
|---|------------------------|------------------------|
|   | Minimum time<br>(days) | Maximum time<br>(days) |
| Image examination until breast biopsy                     | 0                      | 64                     |
| Breast biopsy until biopsy report                         | 0                      | 40                     |
| Biopsy report until beginning of neo-adjuvance            | 5                      | 112                    |
| Beginning of neo-adjuvance until the end of neo-adjuvance | 42                     | 175                    |
| End of neo-adjuvance until surgery                        | 14                     | 35                     |
| Surgery until beginning of adjuvance                      | 21                     | 88                     |
| Image examination until beginning of neo-adjuvance        | 31                     | 182                    |

**Table 3.** Time Intervals between diagnostic steps, surgery and chemotherapy or adjuvant radiation – Therapeutic scheme II. Florianópolis/SC/Brazil. 2010.

| Diagnostic steps                      | Time intervals         |                        |
|---------------------------------------|------------------------|------------------------|
|                                       | Minimum time<br>(days) | Maximum time<br>(days) |
| Image examination until breast biopsy | 20                     | 169                    |
| Breast biopsy until biopsy report     | 0                      | 48                     |
| Biopsy report until the surgery       | 10                     | 64                     |
| Surgery until beginning of adjuvance  | 35                     | 136                    |
| Image examination until the surgery   | 42                     | 233                    |

It is noted that, the registration in the records investigated began from the image examination, there were no records as the disease was first identified, whether by tracing by perception of women or by clinical examination of the breast, but considering that 45,8% of women were in stage III, where probably the disease was already palpable by the woman. Some authors state that generally women who detect the nodule through self-examination of the breast, this discovery lead the women to see the doctor, who diagnoses breast cancer<sup>(2-18)</sup>. Then, in the time interval investigated here, also it should be added the time interval from symptom of the image examination. This investigation was poisoned by the absence of records in medical records.

There are few available studies in Brazil that present data to investigate the time between the signs and suspicious symptoms of breast cancer and the first consultation of the health service<sup>(9)</sup>.

As for the time intervals between the surgery and the adjuvance with chemotherapy, found in therapeutic schemes I and II, the average was 73

days, the median of 76 days and mode (multimodal series) was 62, 70, 77, 83 and 100 days. It was identified that 22 women that performed this therapeutically (100%), 18 (82%) exceeded the recommendation of 60 days to the beginning of the adjuvance, being three (14%) of the therapeutic scheme I and 15 (68%) of therapeutic scheme II.

This demonstrates that the schedule of consultations for initiates the adjuvant treatment should be the main factor for this finding. The women of the therapeutic scheme I are already being met in the scenario study institution, before the surgery, and the therapeutic scheme II, in the majority, open records in the institution after medical evaluation post-surgery.

Of the two women who carried out the adjuvance with radiotherapy, in schemes I and II, the therapeutic started in 72 and 82 days, respectively, after the surgery, in these cases, the time interval until the adjuvance answered the recommended, that is, up to 120 days.

Brazilian study (Londrina-Paraná) found more than 90 days between the diagnosis and the beginning of the breast cancer treatment<sup>(19)</sup>. Another Brazilian study (Santo André-São Paulo) found a median interval of 72 days between the mammography and biopsy (minimum interval of 4 days and maximum of 1095 days)<sup>(15)</sup>. Canadian studies found time interval between the diagnosis of breast cancer and the beginning of the treatment of 34 days<sup>(4)</sup> and 22 days<sup>(5)</sup>.

The results of the Brazilian studies coincide with the delays found in this study and justify the differences rates of survival found in women treated in Brazil and in developed countries<sup>(10)</sup>. In Canadian studies, the highest percentage of women when diagnosed with breast cancer was in stage I of the disease, indicative of curative treatment and higher rates of survival.

In this context, the greatest time intervals were found between the mammography and biopsy, biopsy report and the neo-adjuvance or surgery and surgery and the adjuvance. This finding reflects the need to increase the number of specialized health professionals to meet the large number of cases of women with breast cancer. The expansion of these professionals would make agile the diagnosis and the beginning of the treatment, therefore would be contributing to the early diagnosis, to the development of curative treatments, to reduce spending on the therapeutic, for elevation of rates of survival and mortality.

The reality of SUS requires of women with breast cancer care by health centers, waiting for exam scheduling of images, searching for mastologist in the polyclinics or health specialist units, waiting for the biopsy, issuance of the report, scheduling and attendance by oncologist. The results showed that there is not a standard time between these steps among different women and a standardization of operational procedures.

To change the reality in Brazil and other countries, with respect to the delays in the diagnosis and treatment of breast cancer, as well as health policies, it should be invest in the analysis and use of strategies to reduce the

cultural and environmental barriers to access to health services<sup>(20)</sup>.

As to the limitations of the study include three aspects: the first was the lack of computerized data bank in the study scenario, which hindered access to patient records to be included in research; the second aspect was the lack of data registration in the patient records, which limited the collection and made it impossible the application of statistical inference tests; the third relates to the low number of women included in the study. As the study scenario was an institution that meets 99% SUS, it was not expected that only 24 women, of a target population of 138 women, had carried out all the diagnostic and therapeutic steps by the public health system.

## CONCLUSION

The results show that the time intervals between the diagnosis and therapeutic steps of breast cancer in women attended exclusively by SUS, do not meet the scientific indications that ensure the best survival rates for women diagnosed with breast cancer.

The main deficiency in the time interval is related to the specialized service, that is, steps that include biopsy and the beginning of the treatment, as well as to begin the adjuvance with chemotherapy.

The results point to the need for the adoption of strategies for reduction of diagnosis and late treatment of breast cancer and for the attendance of the recommended time intervals by scientific studies. These strategies should be facilitated the realization of mammograms, biopsies, surgery to remove breast carcinoma, expansion of health care, according to the demands of health/disease, increasing the number of specialized professionals for the oncological care in line with the current scientific development.

All women are entitled to SUS, but they need to be agile and competent care, because on a suspicion of cancer diagnosis is impossible to wait for system delays, without anxiety and fear. The diagnosis and treatment of late cancer bring disadvantages to the woman, to society and the SUS.

## TEMPO ENTRE AS ETAPAS DIAGNÓSTICAS E TERAPÊUTICAS DO CÂNCER DE MAMA NO SUS

### RESUMO

Pesquisa descritiva, com abordagem quantitativa, que objetiva descrever o intervalo de tempo entre as etapas diagnósticas e terapêuticas do câncer de mama em mulheres assistidas no sistema público de saúde em instituição oncológica de Santa Catarina/Brasil e caracterizar o perfil sociodemográfico dessas mulheres. A coleta de dados foi realizada em todos os prontuários das mulheres atendidas exclusivamente pelo sistema público de saúde (24), no ano de 2009. Os dados foram analisados por estatística descritiva, 41,5% das mulheres estava na faixa etária 40-49 anos, possuíam ensino fundamental, eram do lar, apresentavam estágio III da doença. O intervalo de tempo da mamografia ao início do tratamento da doença oscilou entre 31 e 233 dias, entre a cirurgia e a adjuvância 21 e 136 dias. Intervalos encontrados não atendem às recomendações científicas. Os maiores intervalos foram encontrados nas etapas para a realização da biópsia, para dar início ao tratamento e à adjuvância com quimioterapia. Os resultados apontam para a necessidade de adoção de estratégias para o atendimento dos intervalos de tempo recomendados cientificamente. Essas estratégias devem contemplar agilização na realização das mamografias, biópsias e cirurgia para retirada do carcinoma mamário.

**Palavras-chave:** Neoplasias da mama. Oncologia. Diagnóstico tardio.

## TIEMPO ENTRE LAS ETAPAS DIAGNÓSTICAS Y TERAPÉUTICAS DEL CÁNCER DE MAMA EN EL SUS

### RESUMEN

Investigación descriptiva, con abordaje cualitativo, que tuvo como objetivo describir el intervalo de tiempo entre las etapas diagnósticas y terapéuticas del cáncer de mama en mujeres asistidas por el sistema público de salud en una institución oncológica de Santa Catarina/Brasil y caracterizar el perfil sociodemográfico de esas mujeres. La colecta de datos fue realizada en todos los prontuarios de las mujeres asistidas exclusivamente por el sistema público de salud en el año de 2009. Los datos fueron analizados por estadística descriptiva, 41,5% de las mujeres tenían entre 40-49 años de edad, tenían educación primaria, eran amas de casa, y se encontraban en el estadio III de la enfermedad. El intervalo de tiempo de la mamografía al inicio del tratamiento de la enfermedad osciló entre 31 y 233 días, entre la cirugía y la adyuvante 21 y 136 días. Intervalos encontrados no siguen las recomendaciones científicas. Los intervalos más grandes fueron encontrados en las etapas para la realización de biopsia, para dar inicio al tratamiento y la adyuvante con quimioterapia. Los resultados indican la necesidad de la adopción de estrategias para el seguimiento de los intervalos de tiempo recomendados científicamente. Estas estrategias deben contemplar la agilización en la realización de las mamografías, biopsias y cirugías para la retirada del carcinoma mamario.

**Palabras clave:** Neoplasias de la Mama. Oncología. Diagnóstico Tardío.

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**Corresponding author:** Luciana Martins da Rosa. Avenida Mauro Ramos, 1250, bloco A2/31. CEP: 88020-301. Florianópolis, Santa Catarina

**Submitted:** 10/10/2012

**Accepted:** 29/01/2013