

# Sequels associated with breast cancer treatment: what is important to measure in a report

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## ABSTRACT

Breast cancer treatment is associated with functional sequelae that limit patients in their daily activities or work, impacting their quality of life. This fact becomes more noticeable in the Public System, the tumors are more advanced, leading to more aggressive treatments. Women with low education generally perform menial activities, playing an important role in family income. After cancer treatment, many are unable to carry out their usual activities, having difficulties with their work activities, requiring rehabilitation. These dysfunctions make it difficult or unfeasible to return to work, limiting family income. Knowledge of the Laws, the main sequelae and evaluation methodologies facilitates a more accurate diagnosis of functional conditions, determining the need for rehabilitation. Social Security provides economic support, but to have access to the benefit, a good report is necessary. This, well directed, helps the social security expert and the patients, who are generally so fragile by the disease and the treatment. In this article we discuss the main functional sequelae, how to evaluate them, and how to make a good report to be sent to an expert.

**KEYWORDS:** breast neoplasms; diagnosis; diagnostic techniques and procedures; rehabilitation; quality of life.

Early diagnosis and multiple treatment modalities have increased the cure rate and survival of patients with breast cancer. The different therapeutic modalities can be associated with sequelae that can impact the quality of life, hence the need to diagnose these changes in order to provide treatment and/or physical therapy support<sup>1-5</sup>.

The treatment implies changes in the patient's life, and in those who work, the consequences can impact the return to work, the need for rehabilitation and/or the need for retirement. A Brazilian study carried out in a hospital that treats women with breast cancer, exclusively attended by the Unified Health System (*Sistema Único de Saúde* – SUS), showed that 54.0% of women return to work after cancer treatment, and these are generally younger, with higher education, higher income, and with smaller tumors, and that the loss of shoulder mobility determines an increase in the risk of not returning to work<sup>6</sup>. Returning to work is a multifactorial matter, as it involves conditions related to the woman (age, race, education, physical activity), the context (marital status,

family income, participation in the family income), the type of activity (remuneration, work activity, possibility of relocation, working conditions), the disease (stage, treatment impact, associated sequelae, recurrence, and quality of life), in addition to the laws that support cancer patients<sup>6</sup>. This fact is more important in patients from the public system, in which social security assistance is of fundamental importance.

We sought to analyze the issue in Brazil from the perspective of different professionals who deal with patients undergoing different breast cancer treatments, assessing the main functional sequelae, and, based on this condition, identifying points to be implemented in a report.

## PATIENT ASSISTANCE LAWS

There are some laws created to help breast cancer patients, especially those with functional dysfunction, namely:

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- Decree No. 3.048, of May 1999<sup>7</sup>, which regulates the Social Security System. This legal instrument values the mandatory contributory nature, allowing contributors to cover temporary or permanent disability events, as well as the possibility of aid (temporary or permanent), temporary leave and rehabilitation, in addition to disability retirement associated with total and definitive disability, with the need for evaluation by an expert social security doctor. The definitive concession is made by two independent experts and separately. Subject to these conditions are patients who previously contributed to the disease — in the case of breast cancer, there is no waiting period.
- Organic Law of Social Assistance (*Lei Orgânica da Assistência Social* – LOAS), Federal Law No. 8.742, of December 7, 1993<sup>8</sup> — provides for the possibility of benefit for people with no social security system and family income of less than one quarter of the minimum wage for people with physical disabilities and inability to work.
- Law No. 8.036, of May 11, 1990 (art. 20, items XI, XIII, XIV, and XVIII)<sup>9</sup> — provides for withdrawal from the Severance Indemnity

Fund (*Fundo de Garantia por Tempo de Serviço* – FGTS) for people with serious illnesses, including cancer. For this, the patient must be symptomatic, even with locoregional symptoms, and be under outpatient treatment/follow-up.

- Decree No. 9.580, of November 22, 2018 (art. 35, item II, items B and C)<sup>10</sup> — provides for exemption from income tax and the granting of disability benefits and pensions.

## FUNCTIONAL SEQUELS

Knowledge about potential sequelae associated with treatment is of utmost importance<sup>2</sup>, especially the functional ones<sup>1</sup>: lymphedema, changes in shoulder mobility, rotator cuff syndrome, changes in sensitivity, breast asymmetry, fibrosis, syndrome axillary, changes in muscle strength, pain, brachial plexopathy, hand-foot syndrome, and secondary heart disease. Table 1 presents the main dysfunctions<sup>1,5</sup>. Figure 1 presents the main instruments that can be used in diagnostic evaluation, and their acquisition is simple and inexpensive (R\$ 200; US\$ 50).

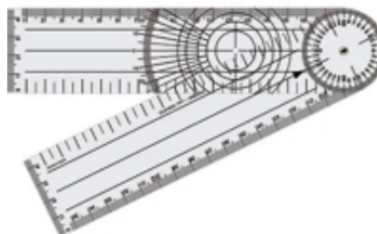
**Table 1.** Main sequelae associated with treatment<sup>1,5</sup>

Sequelae	Treatment	Rate (%)
Lymphedema	Reversible but incurable	9.5 to 49.0
Change in shoulder mobility	Reversible	mean 19.2; 18 to 49 associated with lymphedema
Rotator cuff syndrome	Reversible	–
Sensitivity change*	Irreversible	100 intercostobrachial injury
Brachial plexopathy*	Difficult treatment	Up to 13.6
Her2 heart disease Anthracycline (Taxol)	Reversible (Her2) Reversible or not	4
Hand-foot syndrome	Reversible	20 to 60
Breast asymmetry	Treatable	–
capsular contracture	Treatable	14.7
Fibrosis	Irreversible	29.1
Pain	Treatable	19.2

A



B



C



(A) Measuring tape; (B) goniometer; (C) dynamometer.

**Figure 1.** Simple instruments that improve clinical assessment.

Of the main complications associated with treatment, some have an important functional impact and can be assessed using simple methodologies<sup>1,6,11</sup>, which improve our clinical examination, helping in the functional assessment of patients, namely:

- Lymphedema is one of the main sequelae. It has a chronic nature, usually irreversible. Evaluation of the perimeter of the upper limb, using a tape measure (Figure 1A), taking measurements from defined and symmetrical points, always comparing one limb with the other, is a simple way to measure it. Lymphedema is considered when there is a difference of  $\geq 2$  cm in the perimetry of the side ipsilateral to the treatment in relation to the other side.
- Shoulder mobility. Patients may present limitations in the mobility of the shoulder ipsilateral to the treatment. Evaluation is performed with the aid of a goniometer (Figure 1B), through which the angles of the active movements of flexion, extension, abduction, and internal and external rotation of the shoulder are analyzed. The instrument also assesses range of motion, with good references for bilateral assessment and the inclusion of data on abduction and flexion of the upper limb. A change in shoulder mobility is considered when there is active goniometry  $< 150^\circ$  for shoulder flexion and/or abduction.
- Muscle strength. A difference of 12%<sup>12</sup> between limbs is estimated in disease-free individuals. The easiest way to measure strength is by means of a handheld dynamometer (Figure 1C). The presence of brachial plexopathy will be an important functional diagnostic tool.
- Brachial plexopathy is associated with irradiation of the supraclavicular fossa and axilla; although infrequent, it is associated with neurogenic pain with progressive motor and sensory deficit in the ipsilateral limb to treatment<sup>13</sup>. The LENT/SOMA Scale (late effects of normal tissue/subjective-objective-management-analytic) can be used to define its gradation<sup>1</sup>.
- Hand-foot syndrome<sup>14</sup>, which is also infrequent, may occur after treatment with chemotherapy drugs such as taxol, anthracyclines, and carboplatin<sup>15</sup>, causing peripheral neuropathy. The complaint should be valued, since the neuropathy is mainly sensitive, however, when associated with motor alteration (gait or strength), this must be reported. The etiological diagnosis is difficult<sup>16</sup>. It leads to therapeutic discontinuity, affecting the quality of life.
- Breast reconstruction using autologous flaps or implants is associated with changes in shoulder mobility<sup>17</sup>. In patients undergoing reconstruction with a retromuscular implant, there is thinning of the pectoral muscle, influencing mobility and local functionality.
- Shoulder functional assessment quality questionnaires<sup>18</sup>. The SPADI (Shoulder Pain and Disability Index) stands out, validated into Portuguese<sup>11</sup>, a simple questionnaire that indirectly assesses the degree of disability and pain in the limb

ipsilateral to the treatment. Although it can be considered subjective, it presents objective clinical responses. It becomes an important tool in the evaluation, as it is able to provide the physician and the physiotherapist with information about the patient's level of function, contributing to the clinical diagnosis and physiotherapeutic decision-making.

## REPORT

There are four main ways to report (or assess) the patient's condition to another professional:

- Medical attending statement: document issued by the attending physician, which certifies a momentary condition.
- Medical report: represents the scenario of the patients' illness, and should contain information on diagnosis, treatment performed, evolution, etc.
- Physiotherapeutic technical report: document with technical-scientific opinion resulting from the physiotherapeutic evaluation. Information on the studied situation must be reported, analyzed, and integrated. It is important to contain the proposed objective, the therapeutic plan, the evolution of the treatment, and the International Classification of Functioning, Disability and Health (ICF)<sup>19</sup>.
- Technical report or expert report: to be carried out by official experts/specialists, legally qualified professionals, who issue their report according to specific knowledge, data collected from patients and impressions they had about what or who evaluated it. The report is always conclusive and serves as technical support to the social security doctor.

According to the legislation, proving the allegation of incapacity is the duty of the insured person (patients). The presentation of a good certificate/report help social security experts to have subsidies with objective and solid data, so that they can make a conclusive report. The report will be forwarded to the social security expert, and the better and more detailed it is, the greater the possibility of successful removal of the patient who has sequelae associated with the treatment. It is the experts' job to:

- Establish the disease and the degree of functional limitation;
- Establish the functional requirements necessary for the exercise of one's usual work activity;
- Establish adaptive capacity (current and future perspective);
- Define the existence or not of labor incapacity;
- If there is incapacity, the professional will assess whether it is partial or total and whether it is temporary or permanent;
- Establish the onset dates of the illness and disability, as well as the benefit termination date;
- Grant the benefit, which can be aid or disability retirement. To this end, this will assess whether the disability is partial or total, irreversible or subject to rehabilitation, with the possibility of professional rehabilitation.

Aiming to support the experts, when preparing a medical report, it is appropriate to present the report with the code of the International Statistical Classification of Diseases and Related Health Problems (ICD) — or literal diagnosis —, pointing out the different treatments performed, the main complaints, and detailed clinical examination. Regarding physiotherapists, their report should contain the physiotherapy diagnosis or the functional kinetic diagnosis, obtained through the evaluation of complaints, physical examination and classification of functionality by ICF<sup>19</sup>, having fundamental importance in the treatment, control, and rehabilitation. The main points to be included in a medical and physiotherapeutic report are found in Tables 2 and 3, respectively.

Patients may have temporary or permanent disabilities, being eligible for temporary social security benefits during personal and functional rehabilitation. Some, due to disease conditions, age, education/activity or type of sequelae, may be considered invalid, but this definition depends on the criteria of the social security expert.

A well-designed report depends on time and good will and can help both patients and experts in their evaluation. The report can only be prepared after the patients' request and authorization.

Some information can and should be included in the medical report, which may help the patient and the social security expert, namely:

- According to the Code of Medical Ethics<sup>20</sup>, the patient's physician is prohibited from carrying out an expert report, and may only prepare a medical report;
- A summary of the treatment should be presented, pointing out the main conditions that can lead to a potential sequel. Some situations increase the risk of sequelae and, when present, should be scored, such as axillary lymphadenectomy and radiotherapy under the supraclavicular fossa<sup>4,13</sup>;

- A record of complaints and clinical alterations can be presented, allowing to point out the clinical conditions associated with treatment sequelae, such as lymphedema, change in shoulder mobility, change in strength. It should include the LENT/SOMA Scale in the presence of brachial plexopathy. The SPADI questionnaire can help, as long as it is associated with a clinical condition of pain and disability;
- Notes such as:
  - a. "The treatment can result in alterations/sequelae in the breast and in the limb ipsilateral to the treatment performed, a fact that can influence daily activities and quality of life. These changes are influenced by time, individual response and the type of treatment";

**Table 3.** Points to be approached in the physiotherapy report.

Item	Description
Diagnosis	ICD (or literal diagnosis) and ICF, ICF being optional
Physiotherapy diagnosis	Targeted complaints; painful symptom
	Physical therapy examination: associated skeletal alteration Diagnosis and degree of alteration
Care	Care to be taken with the manipulated limb
Diagnostic hypothesis	Neoplasm
	Pain complaint
	Functionality (SPADI can be used)
Conclusion	Treatment/treatment time Activity limitation

ICD: International Statistical Classification of Diseases and Related Health Problems; ICF: International Classification of Functioning, Disability and Health; SPADI: Shoulder Pain and Disability Index.

**Table 2.** Points to be approached in the detailed medical report.

Item	Description
Diagnosis	ICD (or Literal Diagnosis)
Treatment carried out	Start of treatment, clinical stage, molecular subtype
	Surgery, chemotherapy, radiotherapy, hormone therapy
	Current status of the disease
Clinical complaints	Systemic, local and locoregional (as long as they are associated with the underlying disease) SPADI can be added (determines a percentage of disability and pain)
Clinical examination	Locoregional
	Aimed at the main sequelae: perimetry, goniometry, dynamometry
Diagnostic hypothesis	Neoplasm and associated sequelae hypothesis
Conclusion	Time away from patients undergoing treatment
	Referral to other specialists
	Referral to a physiotherapist if sequelae that require evaluation/treatment are found

ICD: International Statistical Classification of Diseases and Related Health Problems; SPADI: Shoulder Pain and Disability Index.

- b. “The treatments carried out followed current guidelines, aimed at controlling the disease”;
- It may be suggested that patients undergoing oncological treatment or who have metastases be on temporary leave. However, outside of these conditions, only the social security expert will be able to determine the length of leave or retirement;
- The term “functional limitation” may be used, but the term disability cannot.

With regard to the physiotherapeutic report:

- It should present a summary of the physiotherapeutic treatment, pointing out the main conditions that can lead to a potential sequel.
- You may have complaints and clinical changes associated with treatment sequelae, such as lymphedema, change in shoulder mobility, change in strength, fibrosis. The SPADI questionnaire can help, as long as it is associated with a clinical condition of pain and disability.
- It must contain the physiotherapeutic diagnosis or functional kinetic diagnosis, obtained through the evaluation of complaints and physical alterations and classification of functionality by the ICF<sup>19</sup>.
- It may suggest day-to-day care and limitation of some activities of daily living and work, due to the risk of progressing to lymphedema, if the patient has undergone axillary lymphadenectomy.

- The term “functional limitation” can be used, but the term disability cannot.

## CONCLUSION

This discussion sought to present objective parameters that can help patients with functional disorders, improving the report to be presented to the expert. Its preparation demonstrates a new level of document, which depends on goodwill, attention and affection for patients, already weakened by the disease. In the context of SUS, this fact is accentuated by the financial condition, the advanced stage and the sequelae associated with the treatment.

## AUTHORS' CONTRIBUTION

RACV: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Supervision, Visualization, Writing – original draft, Writing – review & editing. RESC: Data curation, Formal analysis, Visualization, Writing – original draft Writing – review & editing. MAA: Data curation, Formal analysis, Visualization, Writing – original draft Writing – review & editing. ADS: Data curation, Formal analysis, Visualization, Writing – review & editing. LCNO: Data curation, Formal analysis, Visualization, Writing – review & editing. AJS: Data curation, Formal analysis, Visualization, Writing – original draft Writing – review & editing.

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