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**Review Article**

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### Current treatment of breast cancer

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**ABSTRACT:** Breast cancer is the most common cancer in women. Following breast cancer treatment, a significant number of women will develop treatment-related complications that affect function and quality of life. The complications are not always localized to the breast tissue, as many of the treatments have larger regional and systemic effects on body structures and function, including mental functions; neuromusculoskeletal and movement related functions and structures; and functions of the cardiovascular, hematologic, immunologic and respiratory systems. Many of these complications go unrecognized and few of these women are referred for rehabilitation.

**KEY WORDS:** Breast cancer, oncologist, Chemotherapy, Hormone Therapy, Immunotherapy.

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**INTRODUCTION:** Breast cancer is the most common cancer in women, exclusive of cancers of the skin. In 2009 over 192,000 women in the United States are expected to be diagnosed with invasive breast cancer, and an additional 62,000 with carcinoma in situ. (1) Currently there are over 2 million breast cancer survivors in the U.S. alone. (2) Following breast cancer treatment, a significant number of women will develop complications that affect function and quality of life. Many of these complications go unrecognized and few of these women are referred for rehabilitation. (3)

**PATHOPHYSIOLOGY:** Breast cancer is a malignant tumour that starts in the cells of the breast. Like other cancers, there are several factors that can raise the risk of getting breast cancer. Damage to the DNA and genetic mutations can lead to breast cancer have been experimentally linked to oestrogen exposure. Some individuals inherit defects in the DNA and genes like the BRCA1, BRCA2 and P53 among others. (4) Those with a family history of ovarian or breast cancer thus are at an increased risk of breast cancer. The immune system

normally seeks out cancer cells and cells with damaged DNA and destroys them. Breast cancer may be a result of failure of such an effective immune defence and surveillance.

**DIAGNOSIS:**Breast cancer is sometimes found after symptoms appear, but many women with breast cancer have no symptoms. This is why regular breast cancer screening is so important.Different tests can be used to look for and diagnose breast cancer. If your doctor finds an area of concern on a screening test (a mammogram), or if you have symptoms that could mean breast cancer, you will need more tests to know for sure if it's cancer.(5),(6),(7),(8)

- Mammograms
- Breast Ultrasound
- Breast MRI
- Newer and Experimental Breast Imaging Tests

**MAMMOGRAMS:** A mammogram is a low-dose x-ray that allows doctors called radiologists to look for changes in breast tissue.Mammograms can be used to look for breast cancer, either as a screening test in women without symptoms or in women who have symptoms that might be from cancer.(9)

**BREAST ULTRASOUND:**Breast ultrasound uses sound waves and their echoes to make computer pictures of the inside of the breast. It can show certain breast changes,(10) like fluid-filled cysts, that can be harder to see on mammograms.Ultrasound can also be used to help guide a biopsy needle into an area of the breast so that cells can be taken out and tested for cancer. This can also be done in swollen lymph nodes under the arm.(11)

**BREAST MRI:**Breast MRI (magnetic resonance imaging) uses radio waves and strong magnets to make detailed pictures of the inside of the breast.For certain women at high risk for breast cancer, a screening breast MRI is recommended along with a yearly mammogram.(12)MRI is not recommended as a screening test by itself, because it can miss some cancers that a mammogram would find.(13)

**NEWER AND EXPERIMENTAL BREAST IMAGING TESTS:**Newer types of tests are now being developed for breast imaging. Some of these, such as breast tomosynthesis (3D mammography), are already being used in some centers. Other tests are still being studied, and it will take time to see if they are as good as or better than those used today.(14)

## **MODERN APPROACHES OF THE TREATMENT**

**Breast conserving therapy (BCT):**BCT can be performed with a simple wide excision or with different levels of oncoplastic surgery. For a selection of breast cancer patients, BCT is considered the perfect surgical option, and is oncologically safe [\[\[15\], \[16\], \[17\]\]](#). Oncoplastic BCT facilitates larger resections in relatively small breasts but was introduced mainly to improve cosmetic outcome as up to 40% of women undergoing BCT report poor cosmetic outcome [\[18\]](#). There are several different factors that may influence cosmetic

outcome, both patient-related and surgeon-related, but the most important is the volume of breast tissue that needs to be excised [19]. Locoregional recurrence was previously considered to be a surgical failure but meta-analyses have illustrated that tumour biology is more important in terms of prognosis [20,21].

**Mastectomy:** A mastectomy is no longer a straightforward procedure. It can be performed as a conventional mastectomy, which is often a good choice of treatment for a certain group of patients [22], as it can be performed as an outpatient procedure with a quick recovery and little risk of complications. On the other hand, subcutaneous mastectomy with primary reconstruction is a good option for selected women. This involves a combination of removal of the breast, and hence removal of the tumour, and in the same procedure the skin flaps are prepared for immediate breast reconstruction, either with a prosthesis or using autologous tissue [23].

**Breast surgery after neoadjuvant treatment:** NAC is the standard of care for patients with locally advanced breast cancer [24,25,26,27]. A pathologic complete response (PCR) is a positive prognostic factor with great impact on OS and recurrence-free survival [28,29,30,31], especially in the most aggressive tumours [32,33,34,35]. Neoadjuvant treatment is routinely performed in all patients with a tumour size <5 cm. For patients with tumours between 2 and 5 cm the order of surgery and additional treatment is based upon the histopathological characteristics of the tumour, and treatment is often discussed by a multidisciplinary team.

**Surgical treatment of the axilla in early-stage breast cancer:** The status of the axillary nodes is vital in predicting the outcome for patients with early-stage breast cancer [36,37]. A study by the American College of Surgeons in 1978, which included 498 hospitals distributed over 47 states reported that the five-year survival rate was reduced from 60.5% in clinically localized disease (malignant disease in the breast where regional lymph nodes were not involved) to 49.1% in locoregional disease (malignant disease in the locoregional lymph nodes) [38]. This finding was confirmed in a later review involving 69 trials and more than 8000 patients [39].

**CONCLUSION:** To conclude, it is clear that the treatment of breast cancer is a field that is undergoing continuous change and improvements are occurring constantly. It is mandatory for the clinicians to be cognizant of, and up to date with, all these changes in order to be able to offer the best possible treatment. Fortunately, many patients diagnosed with breast cancer will outlive their cancer, which means the choice of optimal treatment will be crucial in terms of prognosis and quality of life.(40)

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