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The role of physiotherapy for the management of breast cancer and enhancing lifestyle for breast cancer survivors through physical activity and exercises

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Abstract
The roles of physical exercise techniques in the cancer journey are very important. The physical techniques, improve patients psychologically as well as physically who are suffering life threatening illness disease like cardiovascular disease, respiratory disease, diabetes and cancer. Physiotherapy respiratory techniques, pain control techniques, neurological rehabilitation education and lymphedema management very significant in different kind of illness. Breast cancer is associated with hormonal imbalances. The treatment of breast cancer includes multiple modalities like Surgery, radiation therapy, hormonal therapy, chemotherapy, and biologic as well as physical therapy that can all be used in many different combinations based on a patient's specific disease. Exercise may prevent weight gain during cancer treatment and also cause reduction in fatigue. Few physical techniques like, lying down exercises, sitting up exercises, standing exercises after surgery maximize recovery and provide information is prevent forthcoming complications. This mini review suggested that exercise can contribute to improved mood, reduced anxiety and depression undergoing breast cancer treatment.

Keywords: Physiotherapy techniques, American Cancer Society, Breast cancer

Introduction

Cancer is physiologically condition where affected cells in a body parts grow and reproduce uncontrollably growth. The cancerous cells can assault and wipe out surrounding healthy tissue, including organs [1, 2]. Tumor metastases word became like an umbrella which illustrate more than 50 different kinds of cancer diseases with the similar characteristic of uncontrolled malignant cell growth. Tumor metastases to distant sites generally have a greater effect than the primary tumor on the frequency of complications and the patient's quality of life and mortality. Each year, the American Cancer Society (ACS) publishes an estimate for the number of new cases and number of cancer-related deaths. Breast cancer is the most common malignancy in American women and is second to lung cancer in mortality rates [3, 4]. Breast cancer arises from the breast tissues, the ducts (tubes that carry milk to the nipple) and lobules (glands that make milk). In 2010, it was estimated that 209,060 women would be diagnosed with breast cancer and approximately 40,230 were expected to die from their disease. Approximately 1,970 cases were estimated to be diagnosed in men, indicating it is not a disease solely of women. The incidence rates of breast cancer have continued to decline from 1999 through 2004 due to the decreased use of hormone-replacement therapy. This decline follows the results of the Women's Health Initiative study, which demonstrated increased risk of breast cancer in those receiving hormone-replacement therapies. One in eight women are expected to develop the disease over the course of their lifetime [5,6]. However, this frequently quoted statistic may overestimate the risk of breast cancer because it is derived from women who live to be 110 years of age. If breast cancer is diagnosed early, it is curable. The likelihood of diagnosing breast cancer is increased by the use of standardized screening methods. Currently, many different guidelines are available for breast cancer screening including recommendations from the American Cancer Society and the US Preventative Services Task Force [7, 8]. All recommend combination modalities of screening because no one test is considered conclusive. Breast cancer can be prevented in patients who are considered at high risk of developing breast cancer. Both surgical, non-surgical (post-operative) and anticancer drugs (Pharmacological therapy) are available. Prophylactic mastectomies can be successfully completed; however, they do not provide a 100% guarantee of the prevention of breast cancer [9, 3, 4]. Pharmacologic therapies have been approved for the prevention of breast cancer including tamoxifen and raloxifene. Two large studies in high risk women demonstrated decreased incidences in breast cancer in those women who received tamoxifen or raloxifene for 5 years. Non-surgical (post-operative), physiotherapists (Physical therapists) are experts to improve fitness by exercise techniques, who give strengthen to those people who are optimize their physical ability [10, 11]. Their exercise techniques can help in preventing and treating the four major, life threatening and non-communicable diseases in the world, as identified by the United Nations: cardiovascular disease, respiratory disease, diabetes and cancer. Physical therapists set down exercise as part, safe and effective programme for physically and mentally challenged [11, 12].

Risk Factors for Developing Breast Cancer [13, 14].

Known Risk Factors

1. Gender: Female > male
2. Personal history of breast cancer
3. Family history of breast cancer (first-degree relatives)
4. Benign breast "cancer" (i.e., atypical hyperplasia)
5. Early menarche (<12 years of age), late menopause (>55 years of age)

6. Late first pregnancy (≥ 30 years) or no pregnancy
7. Advancing age
8. Long-term use of hormone-replacement therapy (estrogen)
9. Previous chest wall irradiation

Possible Risk Factors
1. Alcohol
2. Obesity
3. High-fat diet

Stages of breast Cancer [15].
The information collected on tumor size and how it has spread around within breast and organs (T), lymph node involvement (N), and the presence or absence of distant metastases (M) by using TNM staging system. Once the T, N, and M are determined, a stage of 0, I, II, III, or IV is assigned [Figure 1], with stage 0 being in situ, stage I being early stage invasive cancer, and stage IV being the most advanced. The commonly used system in clinical trials is TNM [Figure 2].

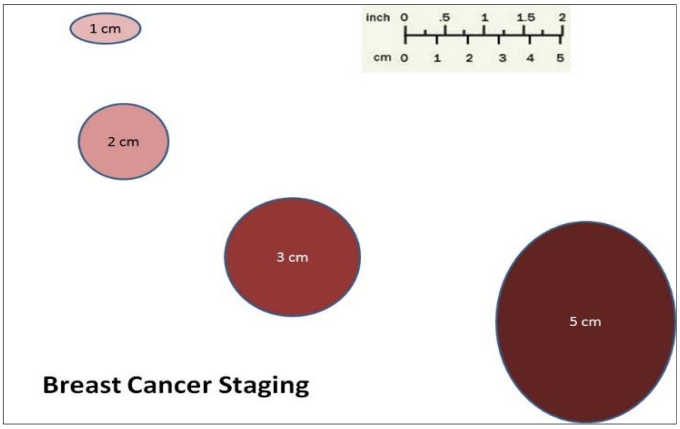

Fig 1

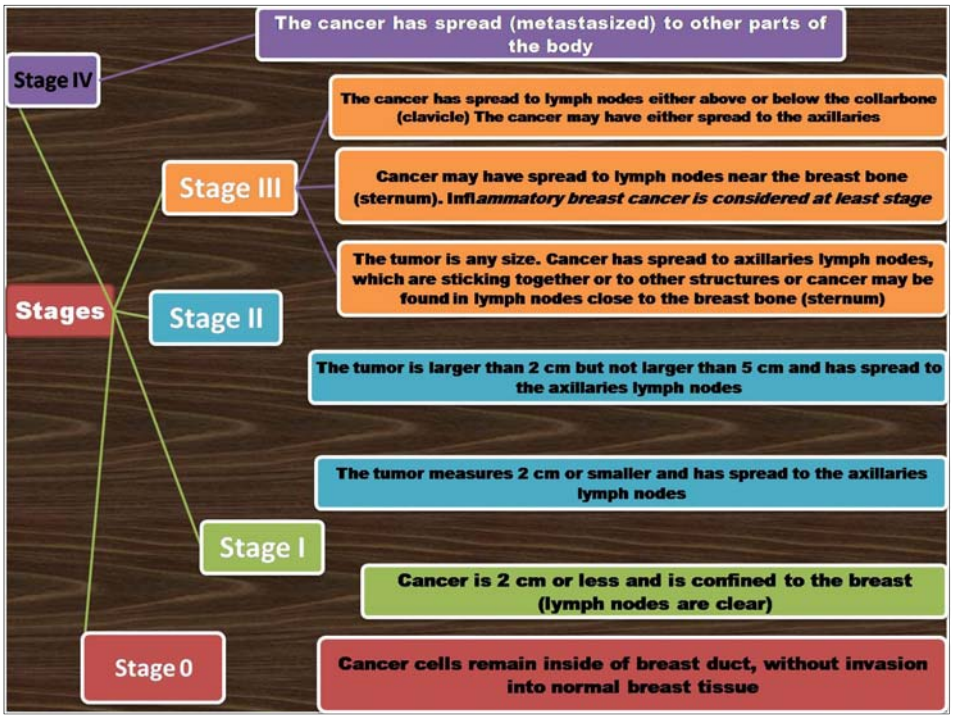

Fig 2: Stages of breast Cancer

Role of Physiotherapy in breast cancer and their techniques
Physiotherapy or physical therapy is part of rehabilitation back to the times of Hippocrates, who acknowledged that blood circulation of body parts by the physical exercise to be encouraged for a patient's recovery from any kind of illness. The recognition of physiotherapy and its outcomes were well-known during the polio outbreak in the 1950's when it became main rehabilitation technique in prevention the disabling effects diseases. Treatment modalities by physiotherapy can be broadly divided into three categories which include physical therapy like massage therapy, spray and stretch technique, therapeutic exercise, physical activity and yoga [16, 17]. Electrotherapy methods are like TENS (Transcutaneous Electrical Nerve Stimulation), MENS (Micro Current Electrical Nerve Stimulation, Electro acupuncture ,Short Wave Diathermy, Micro Wave Diathermy, Ultra Violet Radiation, Infra Radiation, Ultra sound therapy, Lasers, Iontophoresis and thermal modalities like hot packs, paraffin wax's, ice packs, ice massage,

cold spray are also recommended [18].

Physiotherapy or physical therapy is part of rehabilitation during the hospital period, particularly in the postoperative phase in breast cancer. Patients are instructed how to protect it against acute infection factors and the risk of lymphedema in breast cancer. Along with the improved survival rates, the quality of life in patients who have been cured of their cancer has become an important issue. ACMS (American College of Sports Medicine) recommended programmes and physical activities for breast cancer patients' that they immediate go for post-surgical physiotherapy [19, 20]. According to physio-experts recommendations strengthen exercise should be 50% of one repetition maximum (1RM) carried out 5-7 days per week. The long-term goal of rehabilitation is to return the person to work, domestic activities and social interaction with as few physical deficits as possible. To achieve this, intervention should occur as soon as the like hood of disability is anticipated [23, 24]. From the first follow-up for rehabilitation the impaired shoulder movements in relation to post-operative incidence show an increase in range of motion that vary from 10% to as high as 45%. Factors related to impaired shoulder movements are older age, nonparticipation in physical exercise programmes, and subcutaneous fibrosis. But Physiotherapy or physical therapy is part of rehabilitation improve shoulder movements breast cancer patients by number of different physical techniques [25, 27].

The physical techniques, improve patients psychologically as well as physically health whose are suffering life threatening illness. The following type of techniques are Suggested for breast cancer patients [28, 31].

1. lying down techniques (exercises)
1.1 Wand exercise
1.2 Elbow winging

2. Sitting up techniques (exercises)
2.1 Shoulder blade
2.2 Shoulder blade squeeze
2.3 Side bending

3. Standing techniques (exercises)
3.1 Chest wall stretch
3.2 Shoulder stretch

1. Lying down techniques (exercises)

These exercises can be done on a bed or the floor. Lie on your back with your knees and hips bent and your feet flat.

1.1 Wand exercise

This exercise helps increase the forward motion of patient shoulders. The exercise needed broom handle, yardstick, or other stick-like object to use as the wand. (Figure 3)

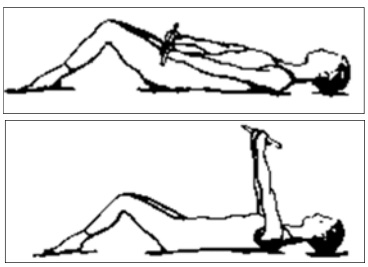

Fig 3

1.2 Elbow winging

This exercise helps increase the movement in the front of chest and shoulder this exercise takes 6 to 7 weeks of regular exercise before your elbows get close to the bed or floor. (Figure 4)

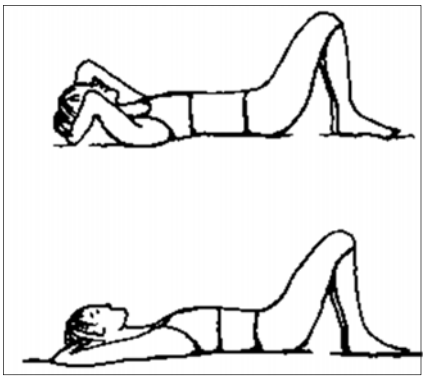

Fig 4

2. Sitting up techniques (exercises)

2.1 Shoulder blade Exercises

This exercise helps increase your shoulder blade movement. Figure 5

Fig 5

2.2 Shoulder blade squeeze

This helps increase shoulder blade movement. Figure 6

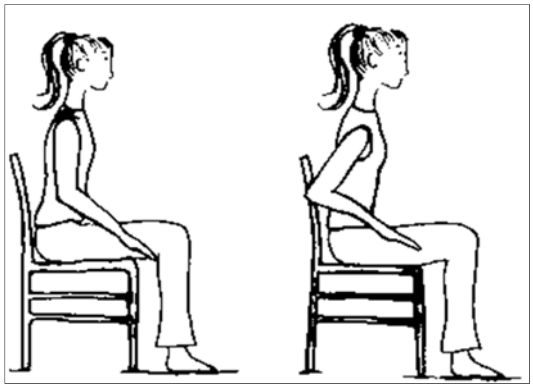

Fig 6

2.3 Side bending

This technique helps increase movement of your trunk and body. Figure 7.

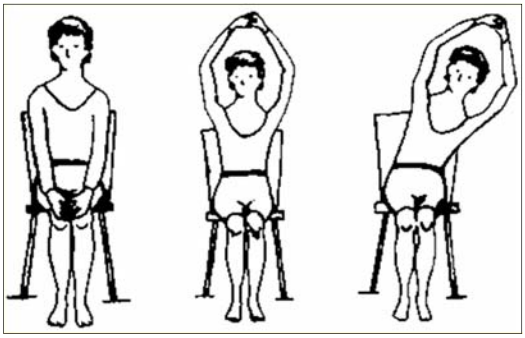

Fig 7

3. Standing techniques (exercises)

3.1 Chest wall stretch

This exercise helps stretch your chest. (Figure 8)

Fig 8

3.2 Shoulder stretch

This exercise helps increase the mobility in your shoulder. (Figure 9)

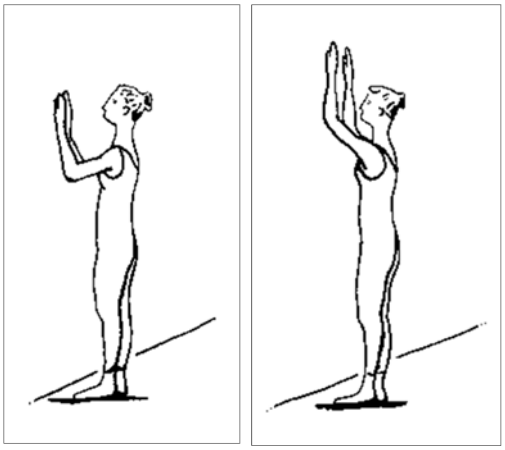

Fig 9

Conclusion

The Physiotherapist understands the patients underlying pathological condition. This review suggested that exercise can contribute to improved mood, reduced anxiety and depression suffering breast cancer treatment. Exercise may prevent weight gain during cancer treatment and cause reduction in fatigue; it may also be useful in alleviating menopausal symptoms in breast cancer survivors who experience early menopause. Physical techniques may also reduce the risk of other chronic disease among survivors. The review showed that it is safe for breast cancer patients to exercise, but what type of exercise is the most effective for individuals with specific problems.

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