



Contemporary Issues in Cancer Rehabilitation

The Underutilization of Rehabilitation to Treat Physical Impairments in Breast Cancer Survivors

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Abstract

Breast cancer survivors can experience multiple neuromuscular, musculoskeletal, pain, and functional disorders as a result of their cancer and its treatment. Common disorders include shoulder dysfunction, postmastectomy syndrome, chemotherapy-induced peripheral neuropathy, axillary cording, lymphedema, and a host of others. Cancer rehabilitation is a process that helps breast cancer and other survivors to obtain and maintain the highest possible physical, social, psychological, and vocational functioning within the limits created by cancer and its treatments. There are good data supporting the safety and efficacy of cancer rehabilitation in the treatment of many breast cancer–related impairments, including shoulder dysfunction and lymphedema, among others. Despite the goals and efficacy of cancer rehabilitation, there is a marked underuse of services. The reasons for this phenomenon are many, but broadly result from a lack of knowledge about cancer rehabilitation on the part of patients and referring clinicians, limited access to services, and suboptimal adherence. This article explores underutilization of cancer rehabilitation in breast cancer survivors and provides an opportunity to consider ways to improve this gap in care.

Introduction

Cancer rehabilitation is a process that helps cancer survivors to achieve and maintain the highest possible physical, social, psychological, and vocational functioning within the limits created by cancer and its treatments [1]. Although cancer itself has obvious potential for limiting function by invading and disrupting tissues, in some malignancies impairments may more commonly result from the treatment of the cancer. This is potentially the case for breast cancer, in which nearly 90% of women will have one or more adverse treatment effects at 6 months and 62% at 6 years [2]. This compares with an 89% 5-year relative survival rate or, conversely, an 11% death rate for breast cancer [3].

Breast cancer treatment includes surgery (both tumor resection and reconstruction), radiation therapy (RT), chemotherapy, and, in recent years, hormonal and biologic therapies. A comprehensive review found that patients treated with axillary lymph node dissection have the highest risk of developing impairments of the arm and shoulder, including reduced range of motion (ROM) and strength, pain, lymphedema, and impaired activities of daily living (ADLs) [4]. Lumpectomy is associated with a decline in ADLs

[4]. Radiotherapy and hormonal therapy are major risk factors for pain [4]. In addition to ROM restriction, pain, and impaired ADLs, symptoms commonly resulting from breast cancer treatment include numbness, muscle spasm, arthralgias, and abnormal muscle recruitment/movement patterns [5]. Pain has been reported to affect 12%-51% of women 6 months to 3 years after breast cancer treatment [5]. The reported incidence of lymphedema varies widely (0%-94%) in recent studies because of variation in diagnostic methods and time to assessment [5]. Women with metastatic breast cancer fare worse in terms of functional impairments and rehabilitation. A consecutive sample of outpatients with metastatic breast cancer receiving chemotherapy found that 92% had at least one physical impairment. Although 92% required a physical rehabilitation intervention and 88% would have benefited from physical therapy (PT) and/or occupational therapy (OT), only 30% of impairments requiring rehabilitation services and 21% of those requiring PT/OT received treatment [6].

The causes of upper body pain and functional disorders in breast cancer survivors have been well described. They can be categorized as largely neuromuscular, musculoskeletal and lymphovascular. Specific

causes of dysfunction include postsurgical pain, rotator cuff disease, adhesive capsulitis, arthralgias, cervical radiculopathy, brachial plexopathy, mononeuropathy, postmastectomy pain syndrome, aromatase inhibitor–induced arthralgias, lymphedema, axillary web syndrome, deep vein thrombosis, cellulitis, and others [7].

Lack of robust scientific evidence for the utility of cancer rehabilitation has been cited as a major barrier to its acceptance by nonrehabilitation clinicians and third-party payers [8]. Despite this, there is little question that specific disorders resulting from breast cancer treatment benefit from rehabilitation [7,9]. A comprehensive review concluded that upper limb exercise, including ROM and stretching, are helpful in recovering upper limb movement following breast cancer surgery [10]. It was noted that early initiation of exercise (day 1 to day 3) may improve short-term gains in shoulder movement, but at the expense of increased wound drainage volume and duration. The review also found that structured exercise programs, such as those provided in PT, result in improved movement and use of the upper extremity for activities such as overhead reaching. A meta-analysis of 15 randomized controlled trials assessing the safety and efficacy of progressive resistance training (PRT) in breast cancer concluded that PRT improves physical function and reduces breast cancer–related lymphedema [11]. A systematic review concluded that multimodal PT, including modalities such as stretching and active exercises, are effective in treating postoperative pain and impaired ROM after breast cancer treatment [12]. Rehabilitation has also been demonstrated to improve quality of life (QOL). For instance, a recent study demonstrated that PT improves shoulder pain and function as well as QOL in breast cancer patients with axillary web syndrome [13]. Another demonstrated that supervised PT improves cardiorespiratory fitness, physical function, and QOL in breast cancer patients previously treated with chemotherapy and RT [14].

Despite the clear need for and efficacy of rehabilitation in breast cancer survivors, there remains underutilization of services throughout the continuum of care. Cheville et al reported treatment rates for physical impairments, even those that are easily treatable, to be as low as 1%-2% for cancer patients [15]. Much speculation, but little investigation, is available to fully understand the cause of this marked underuse.

Conceptually, barriers to use can be classified as deficits in knowledge, access, and adherence (Table 1). Knowledge barriers include lack of education, awareness, and information on the part of both the oncology clinician and the patient. Access barriers include not only limited time, money, and/or transportation, but also a lack of dedicated programs and rehabilitation clinicians, including cancer rehabilitation physicians and therapists (PT, OT, etc), with the requisite

Table 1
Common barriers to cancer rehabilitation

Knowledge barriers
Education concerning cancer rehabilitation
Awareness about cancer rehabilitation services
Information about cancer rehabilitation services
Clear definition of who makes referrals to cancer rehabilitation
Access barriers
Personal resources (time, money, transportation)
Career rehabilitation clinicians (physicians, therapists, etc)
Suitable facilities for cancer rehabilitation (rehabilitation center, gym, parks, sidewalks, pool, etc)
Accessible cancer rehabilitation programs
Clinician time to evaluate and refer patients to cancer rehabilitation
Physician referral
Funding for cancer rehabilitation programs
Adherence
Convenience of services/clinicians
Self-motivation
Enjoyment of cancer rehabilitation program
Self-confidence/ability to participate in a cancer rehabilitation program
Self-management skills
Encouragement/support
Understanding of common barriers to cancer rehabilitation and how to overcome them
Fear of injury
Appointment fatigue
Illness

knowledge, skill, and experience to safely and effectively treat cancer-related impairments. Additional access barriers may include a lack of facilities and resources (therapy center, gym, park, sidewalks, pools, etc) suitable for the patient's needs. A lack of time on the part of the oncology clinician (including the medical oncologist, surgical oncologist, radiation oncologist, advanced practice nurse, etc) to fully evaluate rehabilitation needs and to prescribe suitable treatment, including referrals to therapy, is also an obstacle to accessing cancer rehabilitation [16]. Barriers to adherence are perhaps the best studied and can include convenience, self-motivation, lack of enjoyment, finding exercise boring, lack of self-confidence and ability to exercise, lack of self-management skills, lack of encouragement and support, and a lack of understanding of common barriers and how to overcome them. Fear of injury and appointment fatigue are also obstacles to cancer rehabilitation for some patients. Illness, whether from progressive cancer or other causes, is also a common barrier to participation in cancer rehabilitation.

This narrative review will discuss the reasons for underutilization of cancer rehabilitation services in the context of the breast cancer patient.

Literature Review

A search of the MEDLINE database using Boolean logic with the search heading "breast cancer AND use AND

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