EDITORIAL

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Monitoring and caring for breast cancer patients with post-treatment problems: what can we do?

Kathleen
Sturgeon¹

Kathryn
Schmitz*¹

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Breast cancer patients that have completed prescribed therapies are often faced with post-treatment problems. Depending on the treatment, common sequelae include: lymphedema, postmastectomy pain syndrome, brachial plexopathy, pneumonitis, secondary malignancies, ovarian failure, myelosuppression, neuropathy, bone health issues, reduced functional status, thrombosis and cardiomyopathy, among others. These physical issues often arise in conjunction with far reaching psychosocial, emotional, cognitive, spiritual and economic concerns for this population. Complications due to treatment are highly prevalent in all cancers with 98% of cancer survivors reporting at least one problem associated with their treatment [1]. Late effects of breast cancer treatment were recently investigated in a study that followed 287 breast cancer survivors for 6 years. In this follow-up study, which specifically assessed complications amenable to rehabilitation interventions (postsurgical complications, skin or tissue reaction to radiation therapy, upper-body symptoms, lymphedema, >10% weight gain, fatigue and upper-quadrant function), the proportion of breast cancer

survivors who still reported facing at least one of these issues was greater than 50% at 6, 12, 18 and 24 months – and even at 6 years [2].

One challenge in meeting the unique and complex medical and non-medical needs of breast cancer survivors is coordination of care. Many of these needs remain unmet in the current healthcare system, precisely because coordination of care for cancer survivors remains problematic [3,4]. The Institute of Medicine and National Research Council recognize prevention, surveillance, intervention and coordination as key components to survivorship care. Breast cancer survivors also report a need for better coordination of survivorship care; Mao *et al.* surveyed 300 breast cancer survivors on their perception of care and only 28% believed their primary care physician (PCP) and oncologist communicated well [5]. With coordination lacking and a projected shortfall of oncologists, other relationships need to be established for breast cancer survivors to address their health problems [6,7].

What can we do to care for breast cancer patients with post-treatment problems? Given the litany of complications due to

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¹Abramson Cancer Center, University of Pennsylvania School of Medicine, Philadelphia, PA, USA

*Author for correspondence: schmitz@mail.med.upenn.edu

various breast cancer therapies and the barriers inherent in current coordination efforts, this question should be addressed, not just by an oncologist or PCP, but an integrated core of specialists. Unfortunately, survivorship care plans (SCPs) are lacking in their concordance with Institute of Medicine recommendations.

Of particular interest, a study investigating SCPs observed that of 65 different forms for SCPs, only 46% had content mapped to the areas of prevention and health promotion. Additionally, 0 out of the 13 sites surveyed reached satisfactory concordance in addressing health and prevention [8]. These topics in SCPs could be addressed through exercise-based health promotion.

There is emerging evidence that exercise may extend survival for breast cancer survivors, and established evidence of the influence of regular exercise on the quality of life, psychosocial well being and physiological function of cancer survivors [9–11]. There have been over 68 randomized controlled trials examining the use of exercise in improving clinical treatment sequelae in thousands of breast cancer survivors [12]. More specifically, the prevention and/or treatment of fatigue, reduced functional status, upper-body limitations and lymphedema have been supported by clinical trial data [13–15].

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An integrated approach has been proposed to appropriately and safely refer breast cancer patients through a phased program of health promotion and prevention via rehabilitative exercise [16]. Phase one of this program incorporates the oncology clinic as the initiation for exercise referrals based on patient needs and clinical sequelae. As a significant number of breast cancer survivors may need to have continued evaluation with specific specialists, as per their SCP, these issues are addressed with the intent to return patients to the trajectory for health promotion and prevention. Akin to cardiac rehabilitation, phase two of the plan works at the level of secondary triage for survivors that need supervised

sessions prior to continuing exercise sessions safely on their own. Following an appropriate ramping protocol with exercise physiologists, if necessary, survivors would then transition to a community-based setting with programs developed for cancer survivors. This would be phase three – the ultimate goal in health promotion and prevention via exercise rehabilitation.

Such a program would place survivors on a track to not only mitigate cancer sequelae but also other health issues associated with aging. In addition, healthcare professionals in phase two have hands on interaction with survivors during a crucial time period. Surveillance and documentation of cancer-related side effects is an advantageous step for prevention and intervention, as indicated by the Institute of Medicine. Phase three also provides an opportunity for continued surveillance. This phase involves community-based cancer-specific exercise programs with qualified exercise practitioners to further monitor cancer sequelae. By knowing signs and symptoms of the late effects of cancer treatment, these practitioners can petition the survivor to report to their PCP.

There are, of course, concerns and barriers involved with implementing an exercise-based program into clinical healthcare. The above proposed program is specific to the breast cancer survivor. Emerging evidence indicates that initiating an exercise program during treatment is well tolerated, important for mitigation of treatment-induced side effects and benefits patients years after the intervention [17]. Thus, implementing a treatment-based exercise program prior to survivorship status could improve patient education and individualized exercise programs. Accordingly, the proposed model of prescribing exercise for breast cancer survivors could be altered.

Another concern is the lack of discussion between oncologist and patient with regard to exercise. Jones and Courneya report that while 82% of cancer survivors preferred an oncologist to initiate a discussion about exercise, this only happened for 28% of their respondents. Furthermore, cancer survivors are even less likely than their oncologists to initiate this discussion (13.9% report bringing exercise up during a treatment consultation) [18]. While over 60% of physicians believe exercise is beneficial and safe, only 55% think it is important [19]. It appears that the priority of exercise is lacking for many oncologists, and this modality of care for breast cancer patients is often overlooked.

Aside from concerns regarding initiation of an exercise program, there are still many barriers. Limited resources, varied infrastructure and negotiating a shared-care model, are several current limiting factors in implementing an exercise program for SCPs [20]. While resources may be limited, perhaps visits to PCPs for not only ongoing cancer-related care, but also age-related care, can be synergistic. More than 60% of cancer survivors are over 65 years of age [21]. An oncology-oriented curriculum during continuing medical education requirements for PCPs could be an option to help mitigate resource issues for surveillance in this population. Additionally, as exercise programs improve care and mitigate post-treatment problems, oncology departments can seek funding from government sources, private donors, insurance companies or corporate sponsorships.

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While infrastructure limitations are present in models of exercise-oncology programs, there is similarity to cardiac rehabilitation. Clinically, cardiac rehabilitation is an accepted standard of healthcare. Yet, it is underutilized. Many eligible patients are not referred, and these facilities could be marginally repurposed for oncology patients. Following graduation from a cardio-oncology rehabilitation program, transitioning into a community-based system could become a standard of care for SCPs. Partnerships with community-based health groups are already negotiating affordable approaches to out-patient exercise programming [16].

Inherent in the concept of specialized exercise programming is the issue of not only educating oncologists and PCPs, but also exercise

specialists. Survivors are much more likely to maintain their SCP if they trust their exercise specialist due to cancer-specific training [22]. The American College of Sports Medicine has issued guidelines on exercise for cancer survivors and has a curriculum for certified cancer exercise trainers [11]. The issue of having qualified specialists providing consultations and individualized program development is quickly becoming a nonissue.

In summary, breast cancer survivors face a variety of complications following treatment, although many of these complications have shown significant improvement or mitigation through the use of exercise training. Modeling cardiac rehabilitation into a phased exercise rehabilitation model for care and surveillance may be a clinically valid option; however, there are obstacles to its implementation. Coordination of care for monitoring health promotion and prevention is necessary among oncologists, PCPs and exercise specialists. Additionally, oncologists need to be greater advocates for exercise with their patients. Resources, infrastructure and education are also issues, yet the benefits associated with exercise with regard to oncology are irrefutable. Therefore, we need to make greater strides in implementing exercise programming into clinical care practices.

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