Beware! Reduced Functional Capacity and Quality of Life with Increased Fatigue Level among the Breast Cancer Survivors Undergoing Chemotherapy in India

Sir,

Breast cancer impact affects physical, social, psychological, and many other aspects of life among the cancer survivors. For the past two decades, there has been an increasing number of studies highlighting the importance of physical activity and prevention, reduction, and reoccurrence of cancer. There is a paucity of information available on the functional capacity and quality of life (QoL) among the breast cancer survivors (BCS). The objective of this study is to determine the postchemotherapy changes on functional capacity and QoL among BCS. The functional capacity was determined by 6-min walk test (6MWT). QoL was measured by the European Organization for Research and Treatment of Cancer (EORTC) breast cancer-specific QoL questionnaire (QLQ-BR23) (EORTC QLQ-BR23). The EORTC QLQ-BR23 questionnaire consists of 23 items under two sections, function, and symptom. The answers for each question are in a Likert scale format. This questionnaire contains two scales, namely, the functional scale and the symptom scale. In addition to the above, the fatigue level was monitored by Schwartz Cancer Fatigue Scale (SCFS).

The university research and ethics committee (ACS/2016/57) approved the study protocol. A total of 116 female BCS, aged between 38 and 56 years, were included for the quasi-experimental, one-group pretest-posttest study design. The study was done in accordance with the guidelines of the Helsinki Declaration, revised 2013. The detailed purpose, procedure, risks, and benefits of the study were explained to them after obtaining signed consent form before data collection and assured confidentiality of the collected data. Anthropometrics were measured according to the recommendations of the International Standards for Anthropometric Assessment. The total sample was stratified according to the Union for International Cancer Control/American Joint Committee on Cancer/International Association for the Study of Lung Cancer tumor, node, and metastasis staging. Before the commencement and end of 4th-week chemotherapy, 6MWT was measured according to the guidelines of American Thoracic Society, QoL by EORTC QLQ-BR23, and fatigue level by SCFS.

Normality of collected data was established by Kolmogorov–Smirnov test. As the collected data follow normal distribution, descriptive statistics were expressed in mean ± standard deviation. Parametric tests (paired t-test) were used to analyze the significant difference between sessions. Among 116 females (46.7 ± 8.3 years old; 154.8 ± 6.6 cm; 82.2 ± 3.6 kg; 28.2 ± 3.6 kg/m²), 47.5% were in Stage III and 52.5% were in Stage IV. There were 12 dropouts out of 116 BCS. However, they were analyzed using intention-to-treat analysis. Baseline and 4-week changes in 6MWT, EORTC QLQ-BR23, and SCFS were elaborated in Table 1.

The change score of 6MWT, EORTC QLQ-BR23, and SCFS is 51.1 ± 13.4 m, 10.9 ± 1.8, and 8.8 ± 2.2, respectively. Minimal clinically important difference for 6MWT in patient with cancer is 43.1 m and EORTC QLQ-BR23 is a 10-point change in score. The minimal detectable change of SCFS is 5.7. There is a clinically significant reduction in functional capacity and QoL with increased fatigue level among BCS. Thus, we can rightly say that the chemotherapy has a potential to reduce functional capacity and QoL and increases the fatigue level among BCS in 4 weeks.

**Financial support and sponsorship**
Nil.

**Conflicts of interest**
There are no conflicts of interest.

---

**Table 1: Baseline and postchemotherapy changes in functional capacity, quality of life, and fatigue level among the breast cancer survivors**

| Variables     | Prechemotherapy score (baseline) | Postchemotherapy Score (end of 4th week) | Change score | P    |
|---------------|----------------------------------|------------------------------------------|--------------|------|
| 6MWT (m)      | 435.3±30.5                       | 384.2±23.8                               | 51.1±13.4    | <0.001|
| EORTC QLQ-BR23| 23.3±3.6                         | 34.2±4.1                                 | 10.9±1.8     | 0.003 |
| SCFS          | 7.8±1.2                          | 16.6±3.4                                 | 8.8±2.2      | 0.001 |

6MWT: Six-minute walk test, EORTC QLQ-BR23: European Organization for Research and Treatment of Cancer breast cancer-specific quality of life questionnaire, SCFS: Schwartz Cancer Fatigue Scale
S Ramachandran, Selvaraj Sudhakar1, Fousiya Thaslim, S Veena Kirthika2, K Padmanabhan3, Asir John Samuel4
Department of Cardiopulmonary Physiotherapy, 1Sports Physiotherapy, 2Neuro Physiotherapy and 3Ortho Physiotherapy, Faculty of Physiotherapy, Dr. M.G.R. Educational and Research Institute University, Chennai, Tamil Nadu, 4Department of Pediatric and Neonatal Physiotherapy, Maharishi Markandeswara Institute of Physiotherapy and Rehabilitation, Maharishi Markandeshwar University, Mullana, Ambala, Haryana, India

Address for correspondence: Dr. Selvaraj Sudhakar, Department of Sports Physiotherapy, Faculty of Physiotherapy, Dr. M.G.R. Educational and Research Institute University, Chennai, Tamil Nadu, India. E-mail: drsudhakar.acs@gmail.com

References
1. Schmidt K, Vogt L, Thiel C, Jäger E, Banzer W. Validity of the six-minute walk test in cancer patients. Int J Sports Med 2013;34:631-6.
2. Sprangers MA, Groenvold M, Arraras JI, Franklin J, te Velde A, Muller M, et al. The European Organization for Research and Treatment of Cancer breast cancer-specific quality-of-life questionnaire module: First results from a three-country field study. J Clin Oncol 1996;14:2756-68.
3. Schwartz AL. The schwartz cancer fatigue scale: Testing reliability and validity. Oncol Nurs Forum 1998;25:711-7.
4. World Health Organisation. Declaration of Helsinki World Medical Association declaration of Helsinki ethical principles for medical research involving human subjects. J Am Med Assoc 2013;310:2191-4.
5. Mirsadraee S, Oswal D, Alizadeh Y, Caulo A, van Beek E Jr. The 7th lung cancer TNM classification and staging system: Review of the changes and implications. World J Radiol 2012;4:128-34.
6. Crapo RO, Casaburi R, Coates AL, Enright PL, MacIntyre NR, McKay RT, et al. ATS statement: Guidelines for the six-minute walk test. Am J Respir Crit Care Med 2002;166:111-7.
7. Hamidou Z, Dabakuyo TS, Mercier M, Fraise J, Causeret S, Tixer H, et al. Time to deterioration in quality of life score as a modality of longitudinal analysis in patients with breast cancer. Oncologist 2011;16:1458-68.
8. Nordin Å, Taft C, Lundgren-Nilsson Å, Dencker A. Minimal important differences for fatigue patient reported outcome measures—a systematic review. BMC Med Res Methodol 2016;16:62.

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

How to cite this article: Ramachandran S, Sudhakar S, Thaslim F, Kirthika SV, Padmanabhan K, Samuel AJ. Beware! reduced functional capacity and quality of life with increased fatigue level among the breast cancer survivors undergoing chemotherapy in India. Indian J Palliat Care 2018;24:117-8.