

Category II-C. Patient Care and Support

Impact of 6-Week Progressive Resistance Training Program on Functional Strength and Quality of Life in Breast Cancer Survivors: Retrospective Analysis

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Objective: Persistent muscular weakness and reduced quality of life is a common treatment related adverse effect among breast cancer survivors. The benefits of progressive resistance training (PRT) for 12 weeks and longer time using 1 repetition max (RM) are well documented. This is a retrospective analysis investigating the effects of a 6-week resistance training program performed to volitional fatigue on functional strength and quality of life (QOL) in survivors.

Materials and Methods: This single-arm retrospective pilot analysis examined the effects of PRT in 20 breast cancer survivors (mean age 62.9 ± 11.1 years). Participants completed PRT twice per week for six consecutive weeks. We evaluated changes in grip strength, skeletal muscle mass (SMM), lower body

strength, and QOL. Participants completed pre and post measurements of grip strength, sit-to-stand test, SMM measured by bioelectrical impedance, and QOL measured by FACT-G scale. Women who had completed surgery, chemo, and/or radiation treatment within the two years preceding the study (2024–2025) were included in the program. Training sessions included 30–45 minutes of PRT along with 5 to 10 minutes of warm-up and cool-down, respectively. Intensity was standardized by training to fatigue, rather than percentage of 1RM. Paired t-tests were used to assess change in SMM and grip strength. Wilcoxon signed rank test was used to analyze change in sit to stand test, and FACT-G scores.

Results: There was a significant increase in functional lower-body strength [sit to stand: +2.50 reps, 95% confidence interval (CI) (1.54, 3.46), $p < 0.001$] and bilateral grip strength [right: +3.48 lbs., 95% CI (0.11, 6.86), $p = 0.043$; left: 5.35 lbs., 95% CI (2.52, 8.18), $p < 0.001$]. Positive impact on QOL was observed [FACT-G: + 7.00 points, 95% CI (1.22, 12.78), $p = 0.003$]. No significant changes were seen in SMM [+0.21 lbs., 95% CI (-0.16, 0.58), $p = 0.254$]. Strength gains were not correlated with QOL improvements.

Conclusion: A 6-week resistance training program performed to volitional fatigue is an effective rehabilitation strategy for breast cancer patients. The intervention yielded significant improvements in functional lower-body strength, grip strength, and overall QOL. No changes in SMM occurred. Improvements in FACT G scores were independent of strength.

Keywords: Quality of life; muscular weakness