

## The Effects of an 8-Week Interdisciplinary and Supervised Exercise Program on Post-Treatment Cancer Survivors: A Case Series

Cierra Barnes Hulbert, Sara Brown, Jenna Danko, Rachel Gray, Matthew Koval, Nicole Sorrentino, Veronika Todd

Evidence suggests that exercise has positive effects on physical functioning, quality of life (QOL), recurrence of cancer and survival rates after cancer treatment.<sup>1,2</sup> Studies have also exhibited that a combination of resistance training and aerobic conditioning have been more beneficial than a program consisting of solely one method of exercise.<sup>3</sup> Currently, the recommended amount of physical activity according to the American College of Sports Medicine (ACSM) includes 150 minutes of aerobic activity, resistance training twice a week and avoidance of inactivity.<sup>4</sup> Although physical activity has proven to be beneficial in cancer survivors, long term medical complications may limit their ability to adhere to these guidelines.<sup>5</sup> Due to these complications, precautions need to be taken to ensure safety while exercising in this population.<sup>4</sup> A physical therapist and clinical exercise specialist (with a background in exercise science) each have their own unique perspective, knowledge and experience to supervise and implement an individualized plan of care. Given the potential lifelong side effects of cancer treatment, an interdisciplinary approach may be optimal when designing a fitness program. At this time, no studies have looked at the collaboration among the physical therapy and clinical exercise science disciplines in creating an exercise prescription for this population. The purpose of this study is to examine the effects of an 8-week interdisciplinary, supervised exercise program on QOL, physical functioning and adherence of post-treatment cancer survivors.

**Methods:** Eight cancer survivors, within 3 years of their final treatment, participated in an 8-week individualized, supervised exercise program consisting of both aerobic and resistance exercise. The program was designed by both physical therapy and exercise science disciplines. For 8-weeks, participants were strongly encouraged to complete their specific program three times a week while tracking their aerobic activity outside of the clinic. Each program was based on current evidence, the ACSM guidelines for cancer survivors, participants' tolerance and goals. Following the 8-week intervention, participants were given a home exercise program (HEP) and monthly follow-up calls to assist in tracking adherence. QOL was measured using validated outcome measures including the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire C30 (EORTC QLQ-C30) and Short Form-36 (SF-36). Physical function, including strength, balance, endurance and flexibility, was measured using the following outcome measures: grip strength, 30 second sit to stand, single leg stance (eyes open/closed), 6 minute walk test (6MW), and sit and reach. All measurements were taken at baseline, 8 weeks and 24 weeks. Adherence throughout the program was tracked by recording number of workouts completed and minutes of aerobic activity.

Results will be analyzed using descriptive statistics upon completion of the program following a 16-week follow up assessment. Projected completion date is April 7th, 2017. We hypothesize that after our 8-week supervised program, our participants will have an improvement in physical functioning, QOL, and exercise adherence. After a 24-week follow up, we hypothesize that if participants continuously adhere to the given home exercise program, then post 8-week outcome measurements will be maintained or improved.

Discussion and conclusions: A majority of research has been specifically conducted on people with breast or prostate cancer, creating a gap in the literature. Studies on the effects of exercise on a variety of cancer populations have yet to be conducted. This study has looked at the effects of exercise on a large variety of cancer patients, including: breast, melanoma, Non-Hodgkin's Lymphoma, ovarian, esophageal, osteosarcoma, and primary peritoneal cancer. Following the completion of the study in March 2017, the outcomes of this diverse group of cancer survivors will be discussed, and conclusions will be drawn. Both will be analyzed and included in the Whalen presentation.

#### References:

<sup>1</sup>Lahart IM, Metsios GS, Nevill AM, et al. Randomized controlled trial of a home-based physical activity intervention in breast cancer survivors. *BMC Cancer*. 2016;16:234-258.

<sup>2</sup>Rock CL, Doyle C, Demark-Wahnefried W, et al. Nutrition and physical activity guidelines for cancer survivors. *CA Cancer J Clin*. 2012;62:242-274.

<sup>3</sup>Fletcher GF, Balady G, Blair SN, et al. Statement on exercise: benefits and recommendations for physical activity programs for all Americans. *Circulation*. 1996;94:857-862.

<sup>4</sup>Schmitz KH, Courneya KS, Matthews C, et al. American College of Sports Medicine Roundtable on exercise guidelines for cancer survivors. *Med Sci Sports Exerc*. 2010;42:1409-1426.

<sup>5</sup>Montazeri A. Health-related quality of life in breast cancer patients: a bibliographic review of the literature from 1974 to 2007. *J Exp Clin Cancer Res*. 2008;27:32.