Long-term effects of supervised high-intensity-interval training on fatigue, health-related quality of life and symptoms  
-findings from the OptiTrain trial

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Introduction and aims

Increasing evidence exists of the benefits with exercise for patients with breast cancer. Studies have shown positive effects on cancer-related fatigue (CRF), health-related quality of life (HRQoL) and symptom burden. However, there is a lack of studies on long-term effects.

Therefore the aim was to study changes over time in CRF, HRQoL and symptoms in a sample of women with breast cancer previously randomized to two exercise regimens or usual care during chemotherapy treatment.

Material and methods

A sample of Swedish women with breast cancer were randomized to 16 weeks of supervised resistance and high-intensity-interval training (RT-HIIT), moderate-intensity aerobic and high-intensity interval training (AT-HIIT) or usual care (UC), during chemotherapy treatment.

Self-reported measurements were performed at baseline, post-intervention (16 weeks) and at 12 months. Fatigue was measured with Piper Fatigue Scale, HRQoL with EORTC-QLQ-C30 and symptoms with Memorial Symptom Assessment Scale.

A linear mixed model was used to assess differences between groups from baseline to 12-months, and from 16 weeks to 12 months.

Results

For CRF, from baseline to 12-months follow, the change was significant between RT-HIIT and UC, with RT-HIIT being superior to UC for total CRF, (ES=-0.34), behavior/daily life CRF, (ES=-0.76), and emotional/affective CRF (ES=-0.60).

Changes over time in HRQoL was favorable in role functioning for RT-HIIT compared to UC from baseline to 12 months (ES=0.46), while from 16 weeks to 12 months the change favored UC compared to RT-HIIT (ES=-0.38).

For symptoms and symptom burden; from baseline to 12 months both RT-HIIT and AT-HIIT reported significant decreases for total symptoms (ES=-0.46; ES=-0.46), and physical symptoms (ES=-0.65; ES=-0.61) compared to UC. Additionally, AT-HIIT reported lower symptom burden versus UC (ES=-0.46).

Conclusion

Changes over time for self-reported CRF, aspects of HRQoL, symptoms and symptom burden in women with breast cancer previously randomized to AT-HIIT or RT-HIIT and now entering survivorship, are promising and emphasize the benefits of engaging in HIIT during chemotherapy treatment.