

Feasibility of a Cardio-Oncology Tele-Rehabilitation Program in Pediatric Patients with Cancer

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ABSTRACT

Childhood cancer survivors are eight times more likely to die of heart disease than people who have never had cancer. Exercise during treatment has been found to help protect the heart against the harmful effects of treatment and reduce the risk of developing heart disease in early adulthood. There is insufficient data on the feasibility of delivering cardio- oncology rehabilitation (CORE) in an outpatient telehealth setting. **PURPOSE:** This study aims to pilot the feasibility and safety of tele-CORE in children ages 10-15 years old. **METHODS:** Pediatric cancer survivors who underwent cancer treatment participated in this study. Participants performed a 12-week tele-CORE program. A cardiopulmonary exercise test (CPET) was administered prior to intervention to generate an exercise prescription (with heart rate zones) and screen for exercise contraindications. A stationary bike with modifiable resistance levels, resistance bands, dumbbells, and FitBit were provided. Supervised 45-60 min virtual exercise sessions were held twice weekly consisting of cardio, strength training, stretching, and plyometrics. **RESULTS:** The study is actively enrolling. Preliminary findings of the first 4 participants (Ages 12.5 ± 2.5 ; Female 25%; BMI 35.8 ± 3.3) are as follows. Baseline peak VO_2 values were 22.0 ± 5.4 ml/kg/min. Average attendance was 16 out of 24 sessions (95%CI 9-22). There has been one minor adverse event where a patient expressed chest discomfort during cycling. Exercise was terminated, patient rested, then resumed at a lower intensity. Chest discomfort did not persist. The clinical team was notified, the patient was cleared to resume exercise, but a repeat echocardiogram was ordered to investigate possible cardiotoxicity from cancer therapy. **CONCLUSION:** Our pilot data demonstrates good compliance of tele-CORE in pediatric cancer patients receiving treatment. The team was able to successfully intervene during a minor adverse event. Preliminary findings show tele-CORE to be feasible and safe in children and adolescents undergoing cancer treatment.