Group Exercise Therapy for Patients with Colon Cancer after Surgery and Chemotherapy: Study Protocol for a Controlled Trial

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Introduction
Patients with colon cancer commonly suffer from declined physical function after medical treatments including operation, radiotherapy and chemotherapy. Although published studies suggested the multiple advantages of regular exercise like improvements in muscle strength, endurance, physical performance etc., the benefits of an established exercise program for patients suffering from colon cancer has not been established.

Objectives
1. To examine the feasibility of exercise therapy shortly after chemotherapy among colon cancer survivors
2. To examine the effectiveness of the exercise program

Methodology
Twenty patients were recruited after screening by Clinical Oncology doctor and divided into the intervention and control group. They will join the program within one month after completion of chemotherapy, either receiving CAPOX (Capecitabine + Oxaliplatin) or Capecitabine alone. The patients in the intervention group will have eight weekly group-exercise training sessions under physiotherapists' supervision. The exercise program includes strengthening exercise, aerobic exercise and stretching exercise. The control group patients will attend an educational talk about home exercise. Pre- and post- physical assessment including cardiovascular aspects, upper and lower limb muscle strength, balance and psychosocial aspects for both groups will be measured at baseline and after 8 weeks. Any adverse event will be recorded. For the statistical analysis, independent t-tests and chi-square tests will be
conducted to compare the demographic data describing the two groups. Independent t-tests will be conducted for group comparison both before and after the interventions. The differences in the pre- and post-exercise training outcomes will be analyzed using dependent t-test in both groups. The intention-to-treat (last observation carried forward) approach was applied in the statistical analyses. Written consents have been obtained from participants. This study was approved by research ethical committee in NTWC.

**Result**

The results of this study may provide novel evidence regarding the efficacy and feasibility of group exercise program for colon cancer patients who have undergone chemotherapy shortly. TRIAL REGISTRATION: CUHK_CCT00446