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Research Report Poster Presentation
Number: RR-PO-14-21-Mon
Monday 4 May 2015 12:15
Exhibit halls 401–403

EFFECTS OF EXERCISE TRAINING IN CANCER TYPES WITH LOW SURVIVAL RATE: SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Improving patients' cardiorespiratory fitness, fatigue and quality of life is an important therapeutic outcomes in cancer rehabilitation. Physical exercise has the potential to improve cardiorespiratory fitness, fatigue and to improve quality of life in cancer patients. However most studies were performed in patients with early stage breast or prostate cancer. Breast and prostate cancer is known as a cancer with high survival rate. Evidence on the effect of physical exercise on physical function, fatigue and quality of life in cancer types with low survival rate is lacking.

Purpose: A review was conducted to study the effect of physical exercise (aerobic, resistance or a combination of both) on cardiorespiratory fitness (maximal oxygen uptake and 6-minute walk distance), fatigue (EORTC QLQ-C30: fatigue) and quality of life (EORTC QLQ-C30: global health) in patient with low survival rate cancer types.

Methods: We performed detailed literature searches of electronic databases concerning changes in cardiorespiratory fitness, fatigue and quality of life in cancer rehabilitation patients. The authors searched PubMed, PEDro, and CINAHL up to April 24th 2013. Two authors independently extracted the data. Cancer types with low survival rate was based on nine types from the bottom of five-year relative survival rates by American Cancer Society. We performed fixed-effects model meta-analysis of mean improvements in cardiorespiratory fitness (maximal oxygen uptake and 6-minute walk distance), fatigue (EORTC QLQ-C30: fatigue) and quality of life (EORTC QLQ-C30: global health).

Results: Thirty-five trials (17 randomized controlled trials, 4 case–control studies, 14 single group trials) were systematic reviewed, with a total of 942 cases, and 16 trials were in meta-analysis. Data from 4 studies ($n = 58$) with a mean improvement of 2.52 (95% CI 1.49–3.55, $p < 0.05$) ml/kg/min (maximal oxygen uptake), data from 11 studies ($n = 245$) with a mean improvement of 58.37 (95% CI 53.84–62.90, $p < 0.05$) m (6-minute walk distance), data from 5 studies ($n = 104$) with a mean improvement of −6.33 (95% CI −11.11 to −1.54, $p < 0.05$) points (fatigue: EORTC QLQ-C30; fatigue), data from 6 studies($n = 148$) with a mean improvement of 13.64 (95% CI 12.60–14.68, $p < 0.05$) points (quality of life: EORTC QLQ-C30; global health) were observed.

Conclusion(s): The results of this study suggest that exercise is effective for the improvement of cardiorespiratory fitness and quality of life.

Implications: This analysis helps describe the characteristics of cancer rehabilitation programmes which can increase patientsćardiorespiratory fitness and quality of life in cancer types with low survival rate.

Keywords: Cancer; Exercise
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EFFECTS OF THE SYMPATHETIC BLOCKER ON THE LACTATE THRESHOLD AND EXERCISE CAPACITY

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Background: Patients with hypertension and heart failure are low endurance capacity. Exercise intervention for increasing endurance capacity is important for those patients in order to improve prognosis. Assessment of endurance capacity is necessary for identifying the effects of exercise intervention. Heart rate (HR) during exercise is known to useful index of endurance capacity. However, some patients with hypertension and heart failure often take sympathetic blocker to reduce cardiac work. Since sympathetic blocker reduces HR, HR seems to be an inadequacy index of endurance capacity for those patients. On the other hand, lactate threshold (LT) is accepted as a method to measure the ability to perform at an optimal intensity for a prolonged period of time, and is strongly related to exercise capacity. However, whether LT is an appropriate method for assessment endurance capacity for patients with sympathetic blocker is unclear. In this study, we investigated the relation between LT and endurance capacity of rats treated with sympathetic blocker.