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Early physical rehabilitation for lung cancer lobectomy: Randomized controlled trial

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Background: Early rehabilitation designed to enhance endurance and aerobic capacity may help to promote recovery from lung cancer lobectomy. The purpose of the study is to test the effects of an early physical rehabilitation for lung cancer patients to improve their muscle endurance, aerobic capacity, and health-related quality of life after lobectomy surgeries.

Methods: The study uses an experimental design. 150 patients scheduled for lung cancer surgeries were recruited and randomly assigned to the intervention or the control group. The intervention includes preoperative homebased rehabilitation for 5 days, postoperative in-hospital rehabilitation for 5 days, and homebased exercise program for three months after discharged from the hospital. The main components of the intervention were aerobic and strength exercises as well as breathing training by using an incentive spirometry. The outcomes on muscle endurance, aerobic capacity, and health-related quality of life were measured 1 week prior lobectomy surgery, 1 week, 6 week, and 12 week post operation. The study outcomes were evaluated by using 30-second arm curl test, 30-second chair sit-to-stand test, six-minute walk test, and the Functional Assessment of Cancer Therapy-Lung (FACT-L) questionnaire.

Results: The patients' demographics and baseline measures were equivalent between groups. Results of GEE showed a significant group by time interaction effect on 30-second chair sit-to-stand test. As for the parameter estimates, from 1th week to 12th week, the 30-second chair sit-to-stand test improvement in the intervention group was 1.79 times (Wald $X^2 = 7.93$, $p = 0.005$) more than in the control group. Results of GEE showed a significant group by time interaction effect on six-minute walk test as well as on FACT-L. However, results of GEE showed no significant effect on 30-second arm curl test.

Conclusion: The study results support the effects of the early physical rehabilitation program on improving muscle endurance, aerobic capacity, and quality of life for lung cancer patients after lobectomy.

Keywords: lung cancer, early physical rehabilitation, muscle endurance, aerobic capacity, quality of life

Biography

Ying-Lan Tseng is an acute care nurse practitioner. She has worked in acute care settings for more than twenty years. Nephrology and dialysis care are her clinical specialty areas. She has great passionate on proving evidence based care to her patients. She has also put great efforts on developing patient care knowledge.

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