ONLINE EXCLUSIVE

Effects of Home-Based Exercise Training for Patients With Lung Cancer

Ya-Qing Wang, MD, Xin Liu, MD, Ying-Ying Yin, MD, Rui-Chen Ma, MD, Zhuo Yang, MD, Hui-Ping Cao, MD, and Jiao Xie, PhD

PROBLEM IDENTIFICATION: To investigate the effectiveness of home-based exercise training on exercise capacity, dyspnea, anxiety, depression, and health-related quality of life (HRQOL).

LITERATURE SEARCH: A systematic literature search of the Cochrane Central Register of Randomized Controlled Trials, Embase®, PubMed®, and Web of Science databases was performed for articles published through July 22, 2018.

DATA EVALUATION: The meta-analysis was conducted with Review Manager, version 5.3, following PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines.

SYNTHESIS: 10 articles with a total of 453 patients met the inclusion criteria. Home-based exercise training was found to increase the six-minute walk distance. In addition, anxiety was also improved after the intervention. However, no improvements in dyspnea, depression, or HRQOL were observed.

IMPLICATIONS FOR RESEARCH: Home-based exercise training as a nursing intervention for promoting the rehabilitation of patients with lung cancer can be recommended, but more research should be undertaken to determine the most effective exercises and follow-up methods.

KEYWORDS exercise; home-based; lung cancer; meta-analysis; systematic review

***ONF, 46*(4), E119–E134.**

DOI 10.1188/19.ONF.E119-E134

Lung cancer is one of the most common malignancies, with about 1.6 million new cases of lung cancer diagnosed worldwide each year, which is predicted to increase to 2.2 million cases by 2020 (Hong et al., 2015; Siegel, Miller, & Jemal, 2018). Surgery is usually the preferred treatment for patients with early-stage disease (stages I, II, and IIIA), which is often staged using the TNM (tumor, nodes, metastasis) classification system (Goldstraw et al., 2016). However, surgery is deemed suitable for only 25% of patients because of advanced disease or dysfunction, and others choose radiation therapy or chemotherapy (Brunelli et al., 2009). Although these treatments prevent cancer cells from spreading, they also cause a higher burden of symptoms for patients (Cleeland et al., 2013). The most common respiratory symptom in patients with lung cancer is dyspnea, which limits exercise capacity (Lou et al., 2017). In addition, anxiety and depression are the most common psychological problems in patients with lung cancer, with rates of about 21% and 39%, respectively (Jung et al., 2018). Dyspnea, negative emotions, and decreased physical activity may all be potential causes of impaired health-related quality of life (HRQOL), which is closely related to poor prognosis and a low survival rate in patients with cancer (Giese-Davis et al., 2011).

Exercise training is one of the key components of current management of lung cancer and plays a vital role in the rehabilitation of patients. There are many types of exercise training, including endurance training, interval training, strength training, and respiratory muscle training. The most common forms of endurance training are cycling and walking (Spruit et al., 2013). Interval training is an alternative form of endurance training in which high-intensity exercise is often interspersed with rest or lower-intensity exercise. Strength training is a way of training a local muscle group by repeatedly lifting a relatively heavy load (O'Shea, Taylor, & Paratz, 2009). Respiratory