Effects of Breathing Exercises on Patients With Lung Cancer

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Lung cancer is not only one of the most common malignancies in the world, but it is also the number one cause of cancer-related death in the world (Mao, Yang, He, & Krasna, 2016; World Health Organization [WHO], 2019). In the past few years, the global burden of pulmonary cancer has been increasing, and the disease remains a main threat to public health worldwide (Gouvinhas et al., 2018; WHO, 2019). The treatments for lung cancer are surgery, chemotherapy, and radiation therapy. They aim to cure malignant tumors derived from lung tissue or to relieve the adverse effects (Kim, Boffa, Wang, & Detterbeck, 2012). Surgery is the optimal treatment for precancerous lesions and early- to middle-stage lung cancers (Boffa et al., 2008; Kim, Detterbeck, et al., 2012). However, many patients with advanced lung cancer refuse surgery because of the increased risk of postoperative pulmonary complications and lung function impairment; therefore, they choose chemotherapy, radiation therapy, and other treatment approaches (Baser et al., 2006; Boffa et al., 2008; Kim, Detterbeck, et al., 2012).

Regardless of the type of lung cancer treatment, the development of cancer and the invasion of lung tissue or surrounding tissues by cancer cells can interfere with normal breathing and lead to dyspnea or shortness of breath. In addition, most patients often experience other severe symptoms, such as decreased exercise capacity, anxiety, and depression, which lead to a significant decline in the quality of life (Ha, Ries, Mazzone, Lippman, & Fuster, 2018; Molassiotis, Charalambous, Taylor, Stamatakis, & Summers, 2015).

Breathing is vital to maintaining the operation of the body organs and systems. However, surgery and other treatments targeting lungs inevitably present a substantial risk to the respiratory function of patients. The purpose of breathing exercises is to correct the incorrect breathing patterns, reestablish correct breathing methods, increase diaphragmatic activity, elevate alveolar ventilation, reduce energy consumption during the respiration, and ease shortness of breath in patients with lung cancer (Wei et al., 2013).